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Editorial Comments

It is with great pleasure that we present the proceedings of the 44th Annual General Meeting and Scientific Conference of the Ophthalmological Society of Nigeria (OSN) in this fourth edition of the Transactions of the Ophthalmological Society of Nigeria. The Conference took place between the 5th and 7th of September, 2019 at the International Conference Center, Calabar, Cross-River State.

The meeting brought together specialists and subspecialists in ophthalmology from various parts of Nigeria and beyond; and provided a unique opportunity for ophthalmologists at different levels of training to interact and share ideas with colleagues. The theme of the Conference was “Universal Eye Health: Leveraging on Integration, and Collaborations”. The sub themes were “Global Trends and Changing Practice Pattern in Eye Care” and “Diabetic Retinopathy: When All Hands Must be on Deck”.

One major focus of the Ophthalmological Society of Nigeria (OSN) is to develop evidenced based practice locally by encouraging members to generate valid Nigerian data and evidence on local eye diseases and vision related conditions. To that effect, the OSN has resolved to produce into journal articles, the presentations made during each conference of the society. Furthermore, at the Abuja OSN Conference in 2018, the Editorial Board was mandated to publish full length articles in addition to the refereed Conference proceedings. The Board has therefore commenced the process of establishing a manuscript management system to ease the handling of articles.

This edition of the Transactions of the Ophthalmological Society of Nigeria includes the outputs of research work conducted by several ophthalmologists of different sub-specialities from various public and private institutions in the country and abroad. The articles, which have undergone peer review, are drawn from various subspecialties including Retina and Vitreous, Glaucoma, Paediatric Ophthalmology, Community Ophthalmology, Cornea and Anterior Segment as well as Orbit and Oculoplasty. It is believed that this volume will constitute a significant body of knowledge generated by research conducted locally and which should translate to better approaches at managing ocular conditions in our various communities. Many of the articles presented here can comfortably be used as templates for better patient management and further research in addition to being a pool of ideas for implementation by policy makers.

The contributions of the various people and groups that worked tirelessly in making this issue a reality are well appreciated. Notable amongst them are the OSN Executive Council, the NJO Crew, the representatives of subspecialties on the Editorial Board and the authors, who have also been charged a minimal publication fee to help us offset the high cost of publication.

Thank you.

The Editorial Team
Pattern of Presentation of Pseudoexfoliation Deposits on the Lens Capsule in a Tertiary Eye Hospital in Dhaka, Bangladesh

H. A. Ginger-Eke¹, A. Sadiq², O.N. Iganga¹, B.K. Sarker³, Z. Hasan³, S. J. Kabir³, T.R. Chhara³, C. E. Ogbonnaya¹, C.N. Ezisi¹

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Introduction: Pseudoexfoliation syndrome (PES) is an age-related systemic microfibrillopathy, caused by progressive accumulation and gradual deposition of extracellular grey and white material over ocular tissues.[1] This deposits are seen more commonly in the anterior segment of the eye, mainly the anterior lens capsule and iris.[2] PES can cause chronic open-angle glaucoma, angle-closure glaucoma, lens subluxation and blood-aqueous barrier impairment.[2]

This study aims to provide data on the common pattern of presentation of pseudoexfoliation (PXF) deposits of the lens capsule in patients with PES and Pseudoexfoliation glaucoma (PEG) among the Bangladesh population.

Methods: This prospective observational study included all patients with PES/PEG screened in the glaucoma department of Ispahani Islamia Eye Institute and Hospital, Dhaka, Bangladesh from January 2018 – June 2018. Ethical approval for the study was obtained from the institutional review board of the hospital and adhered to the tenet of Helsinki Declaration. Clinical and demographic variables, pattern of presentation of Pseudoexfoliation glaucoma and pseudoexfoliation syndrome, location of pseudoexfoliation deposit on the lens surface and pupillary abnormalities seen with slit lamp examination were recorded and subsequently descriptively summarized.

Results: A total of 46 eyes of 27 patients with Pseudoexfoliation deposit were studied. There were 24 (88.9%) males and the mean age of the patients was 67.0 (±10.8) years. Peripheral ring of pseudoexfoliation (PXF) deposit was observed on the anterior lens capsule of 12 eyes (26.1%) while the central ring of PXF deposit was seen in only two eyes (Figure 1). However, pseudoexfoliation deposits on the pupillary ruff (Figure 2) was the most common type of PXF deposit observed in 42 eyes (91.3%). Poor pupillary dilation was observed in only one eye. Out of the 46 eyes of 27 patients studied, 25 eyes had cataract. There were also cases with subluxated lens (n=2), pseudophakia (n=4), aphakia (n=1). There were 22 patients with PEG and five patients with PES. Open angle glaucoma was the commonest glaucoma observed in 38 eyes (82.6%) The patients had mean baseline intraocular pressure (IOP) of 22.7 (±12.7) mmHg and 17.5 (±8.0) mmHg in the right and left eye respectively. Some patients were treated with medical treatment or trabeculectomy while those that had cataract were treated with combined trabeculectomy and small incision cataract surgery or combined trabeculectomy and phacoemulsification. The mean IOP after 2 months of treatment was 13.8 (±7.9) mmHg and 15.8 (±6.9) mmHg in the right and left eye respectively.

Figure 1: Pseudoexfoliation on the lens capsule showing the peripheral and central ring with an intermediate clear zone.
Conclusion: Bilateral involvement of pseudoexfoliation deposits was the predominant pattern seen in this study. However, other studies have reported that unilateral involvement is more common.\(^3,4\) Peripheral ring of PXF was seen as the classical deposit on the anterior lens capsule while the central ring of deposit was absent in most cases. This was similar to previous report findings.\(^5,6\) Poor pupillary dilation was rare. Rao et al also found only 30 eyes out of 84 eyes studied with poor pupillary dilation.\(^7\) Poor pupillary dilation may not be a universal pattern of presentation in patients with PES as previously believed. This study also found open angle glaucoma to be the common presentation in eyes with PXF associated with glaucoma. This finding is consistent with previous studies.\(^8,9\)

References


An Assessment of Knowledge and Practice of Goldmann Applanation Tonometer Calibration Error Checks among Ophthalmology Residents in Nigeria

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Introduction: Goldmann applanation tonometer (GAT) is the gold standard for the measurement of intraocular-pressure (IOP).\(^1\) The importance of an accurate value of intraocular pressure in patients’ eye care cannot be overemphasized as patient’s management decisions are based on the intraocular pressure measurement taken by the Goldman applanation tonometer, thus, it is imperative that the accuracy of this instrument be assessed regularly in clinics. In many ophthalmic...
clinics in Nigeria, the GAT is commonly used for measuring patients IOP. In routine clinical practice, error of measurement could arise from a non-calibrated tonometer and thus it becomes necessary to ensure routine calibration of the tonometer.\textsuperscript{2} The aim of the study was to assess the level of knowledge and practice of GAT calibration among ophthalmology residents in Nigeria.

**Methods:** A cross sectional study was carried out among one hundred and eleven (111) ophthalmology residents in various tertiary institutions in Nigeria over a period of three months. A semi-structured questionnaire was used to assess the level of knowledge and practice of GAT calibration. Data obtained was analyzed using statistical package for social sciences version 20.

**Results:** A total of one hundred and eleven (111) ophthalmology residents from fifteen (15) tertiary hospitals in five (5) geopolitical zones of the country participated in the study. The majority of the participants were females with a male female ratio of 0.8:1. Majority, 105 (94.6\%) were over 30 years and about a third had been in residency training for an average duration of three years. Ninety-four (85\%) of the participants did not know about the calibration errors of the GAT. Seventy-nine (71\%) did not know how to calibrate the GAT. Ninety-two (83\%) who use GAT were not aware that periodic calibration checks should be conducted on the instrument.

**Discussion:** Intraocular pressure (IOP) control is a well-known risk factor for the development and progression of glaucoma\textsuperscript{3}. Therefore, IOP measurement is a basic examination for treatment and follow-up of patients. GAT still remains the standard for measuring IOP. Our finding is similar to the study done by Kumar and Jivan in the United Kingdom who reported that 85\% of residents never checked the GAT for errors\textsuperscript{2}. The findings from this study emphasize the need for all eye units to develop protocols regarding calibration checks to ensure accurate measurements of IOP when using GAT.

**References**


**Table 1:** Sociodemographic characteristics of participants in the study

<table>
<thead>
<tr>
<th>Variables</th>
<th>Ophthalmology Residents</th>
<th>Total (N= 111)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age (years)</strong></td>
<td>Freq. (%)</td>
<td>Freq. (%)</td>
</tr>
<tr>
<td>21-30</td>
<td>6(5.4)</td>
<td></td>
</tr>
<tr>
<td>31-40</td>
<td>90(81.1)</td>
<td></td>
</tr>
<tr>
<td>41-50</td>
<td>12(10.8)</td>
<td></td>
</tr>
<tr>
<td>&gt;50</td>
<td>3(2.7)</td>
<td></td>
</tr>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>51 (46.0)</td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>60 (54.0)</td>
<td></td>
</tr>
<tr>
<td><strong>Geopolitical zones of institutions</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>North Central</td>
<td>15(13.5)</td>
<td></td>
</tr>
<tr>
<td>North West</td>
<td>33(29.7)</td>
<td></td>
</tr>
<tr>
<td>South East</td>
<td>14(12.6)</td>
<td></td>
</tr>
<tr>
<td>South South</td>
<td>24(21.6)</td>
<td></td>
</tr>
<tr>
<td>South West</td>
<td>25(22.5)</td>
<td></td>
</tr>
<tr>
<td><strong>Duration of residency training (years)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1-2 years</td>
<td>24(21.6)</td>
<td></td>
</tr>
<tr>
<td>3-4 years</td>
<td>44(39.7)</td>
<td></td>
</tr>
<tr>
<td>&gt;5 years</td>
<td>43(38.7)</td>
<td></td>
</tr>
</tbody>
</table>

**Attitude of Ophthalmologists to Transscleral Diode Laser Cyclophotocoagulation Treatment for Glaucoma Before and After Training**

*Abdull M. Mahdi\textsuperscript{1}, Fatima M Ladan\textsuperscript{1}, Gilbert Clare\textsuperscript{2}*

\textsuperscript{1}Abubakar Tafawa Balewa University Teaching Hospital, Bauchi

\textsuperscript{2}London School of Hygiene and Tropical Medicine
Background: Transscleral diode laser cyclophotocoagulation as treatment for glaucoma is effective in controlling IOP and preserving vision. Scaling up of the treatment by training has the potential to change attitudes among ophthalmologists as a viable option not just for painful blind eyes but also seeing eye, even as primary treatment. This has the potential to avoid needless blindness from poor adherence to treatment and reduced acceptance of glaucoma surgery. The purpose of this study was to assess the change in attitudes of ophthalmologists to transscleral diode laser cyclophotocoagulation treatment for glaucoma before and after training.

Methods: A qualitative study with Ethical approval from ATBU Teaching Hospital Bauchi and London School of Hygiene and Tropical Medicine. It is a multicentre study conducted across seven University Teaching Hospitals in Nigeria. Structured questionnaires with Likert scales were administered to each trainee before training and four months to one year later after obtaining written informed consent. Data was collected and entered into Epidata database, converted and analysed by simple proportions on Stata.

Results: Seven tertiary hospitals were involved. A total of 143 doctors were trained in the project. Out of these, 45 were consultants. Table 1 shows the details of the participation during the training. Table 2 shows some responses from the questions asked.

### Table 1: Distribution of participants

<table>
<thead>
<tr>
<th>Training centre</th>
<th>Consultants</th>
<th>Residents MOs</th>
<th>Total</th>
<th>Nurses, assistants</th>
<th>Total trained</th>
</tr>
</thead>
<tbody>
<tr>
<td>Federal Teaching Hospital (FTH) Gombe</td>
<td>5</td>
<td>3</td>
<td>8</td>
<td>8</td>
<td>16</td>
</tr>
<tr>
<td>Lagos university Teaching Hospital, (LUTH) Lagos</td>
<td>6</td>
<td>9</td>
<td>15</td>
<td>0</td>
<td>15</td>
</tr>
<tr>
<td>Enugu State University Teaching Hospital, (ESUTH) Park lane, Enugu</td>
<td>6</td>
<td>17</td>
<td>23</td>
<td>2</td>
<td>25</td>
</tr>
<tr>
<td>National Eye Centre (NEC) Kaduna</td>
<td>11</td>
<td>18</td>
<td>29</td>
<td>0</td>
<td>29</td>
</tr>
<tr>
<td>University of Calabar teaching Hospital, (UCTH) Calabar</td>
<td>7</td>
<td>20</td>
<td>27</td>
<td>6</td>
<td>33</td>
</tr>
<tr>
<td>Jos University Teaching Hospital, (JUTH) Jos</td>
<td>5</td>
<td>14</td>
<td>19</td>
<td>1</td>
<td>20</td>
</tr>
<tr>
<td>Aminu Kano Teaching Hospital, (AKTH) Kano</td>
<td>5</td>
<td>17</td>
<td>22</td>
<td>1</td>
<td>23</td>
</tr>
<tr>
<td>Total</td>
<td>45</td>
<td>98</td>
<td>143</td>
<td>18</td>
<td>161</td>
</tr>
</tbody>
</table>
Before the training, few doctors agreed that they have sufficient knowledge and training to assess patients for cyclodiode and carry it out, and fewer still advised patients to have the treatment but after the training, doctors were more confident in advising, assessing, offering or even carrying out laser treatment on their patients (Table 2).

When trainees were asked how was the training you received? These were some of the responses from the trainees: “The training was quite adequate and I think it was good enough for us to actually be able to do the procedure without having any issues.”

“the training I received was really excellent. .... we have been having good reduction in the intra ocular pressure”. “I will rate it very high.....prior to the training, we were not doing laser surgery for our patients ...but since the cyclodiode transscleral laser lecture, we don’t even wait for them not to do well in medical or surgical first before we give them all the options”. “The training was excellent”

**Conclusion:** Adequate training and support with accessories were responsible for improved acceptance and use of laser treatment among ophthalmologists. Further support with the provision of more equipment is needed.

**Funding:** This study was sponsored by the Seeing is Believing Innovation Fund of the Standard Chartered Bank.

**References**


Challenges of Surgical Management of Glaucoma in Aniridia: A Case Series

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Introduction: Congenital Aniridia is a rare condition which is mainly associated with PAX6 gene mutations, though other genes such as FOXC1, PITX2 and CYP1B1 have also been implicated. 1 Glaucoma associated with Aniridia has been reported to be between 6% and 75% of patients 2 and though it usually occurs later in life, it can also be present at birth. Treatment of glaucoma is difficult and challenging 3 due to the angle anomalies and the progressive angle changes that take place. Surgical intervention is the most commonly utilized mode of management to achieve good intraocular pressure (IOP) control. 2

Methods: Clinical records of patients who had surgical intervention for glaucoma with aniridia between May 2016 and June 2019 were reviewed. Relevant data was retrieved and analyzed.

Results: We report 4 patients with aniridia, 2 of which had associated bilateral glaucoma and the other 2 with unilateral glaucoma. All 6 eyes with aniridia and glaucoma had surgical intervention in

<table>
<thead>
<tr>
<th>Patients’ initials</th>
<th>Age at diagnosis of glaucoma</th>
<th>IOP prior to Surgery; RE/LE (mmHg)</th>
<th>No of AGMs prior to surgery</th>
<th>Type of Surgery</th>
<th>IOP post-op day 1 (mmHg)</th>
<th>IOP 6m post-op (mmHg)</th>
<th>Other surgeries</th>
</tr>
</thead>
<tbody>
<tr>
<td>I. H.</td>
<td>5 days</td>
<td>36/30</td>
<td>1</td>
<td>Biltrabs + 5FU</td>
<td>10/10</td>
<td>20/16</td>
<td>Bil GDD</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(fine tube)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>S. M.</td>
<td>2 ½ yrs</td>
<td>24/18</td>
<td>2</td>
<td>Biltrabs + 5FU lens extraction of dislocated lens from LE, vitreous noted in LE</td>
<td>08/02</td>
<td>13 RE LE phthisical</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>K. J.</td>
<td>6 yrs</td>
<td>36/28</td>
<td>3</td>
<td>GDD (RE fine tube)</td>
<td>07 RE</td>
<td>10</td>
<td>RE temporal SICS + PCIOL 9m post op</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>O. A.</td>
<td>16 yrs</td>
<td>36 LE (only eye)</td>
<td>2</td>
<td>GDD (LE Ahmed tube)</td>
<td>15 LE</td>
<td>21</td>
<td>On 2 AGMs</td>
</tr>
</tbody>
</table>

IOP= Intraocular pressure, RE= right eye, LE= left eye, AGM= anti-glaucoma medication, m= month, GDD= glaucoma drainage device, Bil= Bilateral, trab= trabeculectomy, 5FU= 5-Fluoro-uracil, SICS+PCIOL= Small incision cataract surgery with posterior chamber intraocular lens implantation
the period under review. Age range at presentation was 5 days – 16 years. Male to female ratio was 1:3. Four eyes had trabeculectomy surgery and two had glaucoma drainage device (GDD) surgery as primary procedure. Three eyes had more than one surgery. Of the three eyes that had more than one surgery, two eyes had GDD (fine tube) after trabeculectomy. One eye had other surgeries (capsulectomy for an encysted bleb and temporal small incision cataract surgery with posterior chamber intraocular lens). All patients had good IOP control (10 – 21mmHg) as at 6 months post-operatively. The table below gives a summary of the surgeries and post-operative clinical state of the patients.

**Discussion:** The treatment of glaucoma associated with aniridia can be challenging. Outcome from medical therapy and surgical therapy has not been satisfactory. All six eyes in our series were initially started on medical therapy prior to surgery (the definite treatment) but none had significant IOP reduction. Inconsistent success rates ranging from 0% to 83% has been reported with trabeculectomy. Of the four eyes that had trabeculectomy one eye had good outcome with IOP less than 21mmHg. In a series by Wiggins et al4, one of 15 trabeculectomies were successful. Grant and Walton6 reported failures in all their patients that had trabeculectomy. However, Nelson et al2 reported successful outcome in 11 of 14 eyes. Glaucoma drainage device surgery appears to be effective in obtaining control in aniridic glaucoma. Reported success rates ranges from 66% to 100% 3. The two eyes that had GDD as initial surgery had good outcome at 6 months. Two eyes had GDD surgery as secondary procedure with good control of IOP within the first 3 months. Wiggins et al4 reported success in 5 of 6 eyes following GDD and all the patients in their series had previous multiple ocular surgeries. Management of aniridia with glaucoma is difficult. Patients may require more than one glaucoma surgery to increase the chance of successful IOP control with or without anti-glaucoma medications.

**Conclusion:** Though intervention with GDD shows promise in the control of glaucoma in patients with aniridia the challenges of management can sometimes lead to unsatisfactory outcomes.

**References**


**Correlation of Macula Ganglion Cell Complex Thickness and Central 10-2 Visual Field Changes of Patients with Primary Open Angle Glaucoma: A Multicenter Study in Lagos, Nigeria**

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3College of Medicine and Surgery, University of Nigeria, Ituku Ozalla, Nigeria.

**Corresponding author:** Emenike AI, Email: aemenike@amaramedicare.com,kamba276@gmail.com

**Introduction:** The macula region bears the highest density of retinal ganglion cells (RGC).1 Macula damage is seen early in glaucoma using the ganglion cell complex (mGCC or mGCL++) of the Optical Coherence Tomography (OCT).2 Standard Automated Perimetry (SAP) is an integral tool in glaucoma diagnosis and management in our local clinics. On SAP, this macula region falls within 10 degrees from fixation. This area is better tested using the 10-2 visual field (VF) tests than the 24-2 VF test because the former tests 68 points while the latter tests only 4 points within this 10 degrees.3 Early structural macula defects detected by OCT may correspond to functional defects detected using the 10-2 test. The aim of
this study is to investigate the correlation of structure to function in glaucoma evaluation, if any, in order to improve timely glaucoma diagnostic ability among African descents.

**Methods:** This was a cross sectional study carried out in public tertiary and private ophthalmic centers in Lagos State. Three hundred and seventeen consenting adults who met the inclusion criteria were recruited. Detailed ophthalmic evaluation was performed by the same ophthalmic doctor. Optical coherence tomography was carried out with the Topcon 3D OCT-2000 (TRC-NW200, Topcon, Inc., Tokyo, Japan), while the Humphrey Visual Field Analyzer II (VFA) (Carl Zeiss Meditec, Inc., Jena, Germany) was used for visual field analysis. Each test was performed by the same trained operator to reduce inter observer error. Print outs were reviewed by the same glaucoma specialist.

For quantitative analysis, the SAP Mean Sensitivity (MS) was recorded in its raw nonlinear decibel (dB) format. Visual sensitivity loss was calculated using the decibel scale values at each test location on the pattern deviation numerical plot. The sum of the values from all test points within the visual field sectors corresponding to the anatomic sectors of the macula was obtained and correlated with the corresponding macula area mGCC thickness value. Data entry, cleaning and analysis was done using the statistical package for the social sciences, IBM SPSS software version 21.0 (IBM Corporation, USA).

**Results:** Readings from 504 eyes were analyzed. There was significant correlation between mGCC of the inferior macula area and corresponding superior hemifield VF defects ($r = 0.117, P < 0.01$), and also the total mGCC and corresponding global

![Figure 1](image-url)
Using linear regression, all macula areas had significant association with their corresponding VF: superior mGCC with inferior hemifield (R² = 0.018, P < 0.05); inferior mGCC with the superior hemifield (R² = 0.014, P < 0.01) and total mGCC with the global VF loss (R² = 0.014, P < 0.01).

Discussion: On OCT, the inferior macula area, also called the macula vulnerability zone of Hood, an area most susceptible to glaucomatous damage had considerable correlation with its corresponding superior area on VF. Factors such as increasing age and severity of glaucoma also had significant correlation with reducing mGCC thickness in this study.

Conclusion: There is considerable correlation between OCT mGCC thickness and SAP central 10-2 VF changes. Correlating the mGCC and the 10-2 VF test in POAG patients can help in diagnosis of glaucoma.

References

New Trends in the Medical Management of Glaucoma

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Introduction: Glaucoma management is continuously evolving to safer more effective and less invasive modalities. Topical anti-glaucoma medications are still the first line therapy in glaucoma management.1 Recently there has been a lot of research into novel drugs, delivery systems and medications with better preservatives. A few years ago, available therapeutic options mainly increased uveo-scleral outflow or decreased aqueous humor production in order to lower intraocular pressure. There were no medications that targeted the diseased trabecular meshwork (TM) directly. Pilocarpine, a miotic glaucoma drug that works to increase aqueous humor outflow does not directly target the TM. Rather it induces contraction of the ciliary muscle in order to expand the TM and decrease outflow resistance.

Methods: A PubMed, and Med-Line search was carried out to review the recent or new trends in the medical management of glaucoma based on evidence from literature. The PubMed search conducted included the following search terms: Recent OR New OR latest AND Advances OR trends AND Glaucoma medical management and then within the last 5 years

Results: A total of 214 papers were retrieved from the initial search. However after adding a duration of 5 years (only papers published in the last 5 years to the search term), a total of 93 papers were retrieved. Using strict criteria of including only papers that specifically reported medical management of glaucoma and advances or recent trends in medical management, 10 papers were selected.

Discussion: New drug formulations have been developed to improve efficacy and duration of action, decrease the need for multiple medications, decrease side effect profile, improve adherence and improve overall quality of life. New formulations include Latanoprostene and Bunod
0.024% (Vyzulta) which is a nitrous oxide-donating prostaglandin analogue which acts by increasing both uveoscleral and trabecular outflow through the release of nitrous oxide. It is a once daily dosing and it is indicated for open angle glaucoma (OAG) and ocular hypertension (OHT). Another new medication is Rhopressa (Netarsudil 0.02%) which is a Rhokinase transporter inhibitor recently approved in 2017. It lowers IOP by the triple action of reducing aqueous production, increasing trabecular outflow, and decreasing episcleral venous pressure. It is indicated in OAG and OHT. Roclatan is combination of Netarsudil (0.02%) and Latanoprost (0.005%). There are other novel delivery systems such as ocular inserts, (polymer filled drugs) which are designed to be placed in the conjunctival cul-de-sac or in the puncta. The Bimatoprost ocular ring is an example of the ocular inserts. These are mainly to improve adherence to medications. Others include nanoparticle-based topical formulations and contact lens based delivery systems. There are also novel preservatives such as Polyquad, Purite and Sofzia as alternatives to Benzalkonium Chloride which has more side effects. Neuroprotective agents such as Citicoline, Gingko Biloba are also at different stages of investigation. 

Conclusion: Significant progress has been made in the last few years to improve medication adherence by providing more drug delivery methods, alternative medications with fewer side effects associated with the use of better preservatives in anti-glaucoma medications.

References

Outcome and Efficacy of Goniotomy with Kahook Dual Blade in the Management of Primary Open Angle Glaucoma: A Retrospective Intervventional Case Series

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Background: The juxtacanalicular part of the trabecular meshwork is known as the site of greatest resistance to aqueous outflow. Goniotomy using Kahook Dual Blade (KDB) is one of the minimally invasive surgical methods used in removing perceived trabecular obstruction and Table 1: Demographic and clinical characteristics of the patients

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>KDB</th>
<th>Phaco + KDB</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (years)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean±SD</td>
<td>68.0±8.83</td>
<td>64.5±8.23</td>
</tr>
<tr>
<td>Range</td>
<td>63-77</td>
<td>54-82</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>2 (22.2%)</td>
<td>3 (33.3%)</td>
</tr>
<tr>
<td>Female</td>
<td>1 (11.1%)</td>
<td>3 (33.3%)</td>
</tr>
<tr>
<td>Eye</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Right</td>
<td>3 (25%)</td>
<td>4 (33.3%)</td>
</tr>
<tr>
<td>Left</td>
<td>1 (8.3%)</td>
<td>4 (33.3%)</td>
</tr>
<tr>
<td>Glaucoma severity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mild</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Moderate</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Severe</td>
<td>1</td>
<td>6</td>
</tr>
</tbody>
</table>
The objective of this study was to describe the efficacy and safety of goniotomy with trabecular meshwork excision using the Kahook Dual Blade (KDB, New World Medical Inc., Rancho Cucamonga, CA) in patients with Primary Open Angle Glaucoma (POAG).

**Patients and Methods:** This was a retrospective analysis of data collected from medical records of adult patients with primary open angle glaucoma of varying severity who had goniotomy with KDB either as a standalone procedure or with phacoemulsification at Eye Foundation Hospital, Ikeja Lagos Nigeria, from April 2017 to July 2018. The procedures carried out in this study followed the ethical standards of the hospital and the tenets of the Helsinki Declaration. Informed consent for the study was taken from every individual in the study.

Data retrieved and assessed were age, gender, laterality, types and severity of glaucoma, type of surgery, any new adverse events, and any secondary surgical interventions for IOP control. Data of patients with at least 6 months of follow-up was included in the analysis. The primary efficacy outcome measure was a >20% reduction in intraocular pressure (IOP) from baseline. The secondary outcome measure was IOP-lowering medical regimen reduced by >1 medication compared with preoperative therapy.

**Results:** A total of 12 eyes of 9 patients were included in the study. The mean age of the patients was 66.4±8.8 years. Eight eyes had goniotomy thereby enhancing the conventional outflow pathway.\(^2,^3\)

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean follow-up (months)</td>
<td>10±1.95</td>
</tr>
<tr>
<td>Mean IOP preoperative (mmHg)</td>
<td>18.58 ± 5.42</td>
</tr>
<tr>
<td>Mean IOP Postoperative</td>
<td>13.0 +5.70</td>
</tr>
<tr>
<td>IOP reduction (n, %)</td>
<td>5.5 (30.0)</td>
</tr>
<tr>
<td>t-test (p-value)</td>
<td>2.46 (0.02)*</td>
</tr>
</tbody>
</table>

**Table 2:** Intraocular pressure at baseline and follow-up for all eyes, eyes post KDB+Phaco, and eyes that had standalone KDB goniotomy

**KDB + PHACO**
- Mean follow-up: 9.38±1.92
- Mean IOP preoperative: 17.0 ± 4.93
- Mean IOP postoperative: 11.88 ± 3.94
- IOP reduction: 5.12 (30.1)
- t-test (p-value): 2.30 (0.04)*

**KDB standalone**
- Mean follow-up: 11.25±1.5
- Mean IOP preoperative: 21.75 ± 5.56
- Mean IOP postoperative: 15.25 ± 8.54
- IOP reduction: 6.5 (29.9)
- t-test: 1.28 (0.249)

*Statistically significant (p<0.05)

**Table 3:** Number of topical antiglaucoma medications at baseline and follow-up period

<table>
<thead>
<tr>
<th>Type of Surgery</th>
<th>Topical medication</th>
<th>t-test (p-value)</th>
<th>Number in Reduction</th>
<th>Conclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Preop Mean ± SD</td>
<td>Postop Mean ± SD</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kahook alone</td>
<td>2.25 ± 0.957</td>
<td>1.75 ± 1.26</td>
<td>0.63 (0.550)</td>
<td>0.5</td>
</tr>
<tr>
<td>Kahook + Phaco</td>
<td>2.50 ± 0.93</td>
<td>0.63 ± 0.74</td>
<td>4.47 (0.001)*</td>
<td>1.87</td>
</tr>
<tr>
<td>All</td>
<td>2.42 ± 0.90</td>
<td>1.0 + 1.04</td>
<td>3.56 (0.001)*</td>
<td>1.42</td>
</tr>
</tbody>
</table>

*Statistically significant (p<0.05)
with KDB plus phacoemulsification with posterior intraocular lens implantation while 4 eyes had goniotomy with KDB alone. Majority of the eyes (7, 58.3%) had severe Primary Open Angle Glaucoma (POAG). See Table 1. After a mean follow-up period of 10±1.95 months, the baseline mean intraocular pressure (IOP) reduced by 5.58mmHg (30%) from 18.58 ± 5.42mmHg to 13.0 +5.70mmHg which is statistically significant (p<0.005). See table 2.

The number of topical antiglaucoma medications showed a decline of all eyes and Phaco +KDB only (table 3). Ten eyes (83.3%) achieved primary objective of reduction in intraocular pressure from baseline as shown in table 4. Complications included transient hyphaema in two (16.7%) eyes. None of the eyes had any additional surgical intervention to reduce the IOP.

**Discussion:** Kahook Dual Blade only recently became a tool for anterior chamber angle surgery. In our series, the success rate was better when goniotomy with Kahook Dual Blade was combined with phacoemulsification (87.5%) than when used as a standalone procedure (75%). This finding is comparable to the success rate of 71.8% for KDB+Phaco and 68.8% for KDB alone respectively reported by Sieck EG et al.

**Conclusion:** Goniotomy with Kahook Dual Blade either as a standalone procedure or with phacoemulsification achieved greater than 20% reduction in intraocular pressure in these series with transient postoperative hyphaema occurring in two eyes.

**References**
Patterns of Central 10-2 Visual Field Changes in Patients with Primary Open Angle Glaucoma in South West Nigeria

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Introduction: In glaucoma there is progressive death of the retinal ganglion cells and axons. The highest density of retinal ganglion cells (RGC) lies at the macula1 and damage to the macula has now been shown to occur early in glaucoma.2 On standard automated perimetry, the macula is represented within 10 degrees of fixation. The traditional 24-2 visual field (VF) strategy tests only 4 points in this region, while the 10-2 strategy tests 68 points. The 24-2 test has previously missed VF defects that were detected using 10-2 test.3 Quality of vision, and invariably quality of life for glaucoma patients can be adversely affected if macula damage is overlooked because functionally, the macula is key to daily tasks like reading, driving, and contrast sensitivity. The aim of this study is to determine patterns of VF defects of this vulnerable macula using the 10-2 VF strategy in Africans with early to moderate primary open angle glaucoma.

Methods: The clinical study was conducted over a period of 18 months. Glaucomatous eyes of consenting patients which met inclusion criteria were studied. Comprehensive ophthalmic assessment including Optical Coherence Tomography (OCT) evaluation was done. The Humphrey Field Analyzer II was used for both 24-2 and 10-2 test strategies. The second or third perimetric readings were used for the analysis to reduce learning effect. This was performed within one month of initial test. The same trained operator carried out the perimeter tests. The pattern deviation plots of only reliable VF print out was evaluated for the VF patterns.

Results: A total of 504 eyes, 282(56%) eyes with early POAG and 222(44%) with moderate POAG were included in final analysis. Only reliable 10-2 VF print outs were analyzed. The different patterns of 10-2 VF seen were grouped as previously described by Traynis et al.4 Figure 1 shows the patterns and their percentages seen among the study respondents. Fifteen eyes (3%) did not have any defects on their 10-2 VF, but further evaluation of their corresponding 24-2 VF revealed defects that were more peripheral, outside the central 10°.

Discussion: The predominant patterns were cluster points close to fixation and partial arcuate patterns. These defects were more superior and closer to fixation, an area which corresponds to the inferotemporal macula area, the Macula Vulnerability Zone,5 an area most susceptible to early damage in glaucoma. Such defects that are closer to fixation are known to increase patient’s risk of developing field loss earlier and faster,6 thus such eyes may benefit from more aggressive treatment. Our study also highlighted the need to examine 24-2 test for peripheral defects when the 10-2 test shows no defect. As limitation, we used Swedish Interactive Threshold Algorithm (SITA) fast in order to improve patient cooperation. However, SITA Fast underestimates scotoma or defect detection. Therefore, one can infer that perhaps even more 10-2 VF scotomas or VF defects are more likely present using SITA standard. This further buttresses the presence of VF defects on 10-2 tests. A recent study using trend based

Figure 1: Patterns of visual field defects on 10-2 VF test of POAG patients aged 40 years and above with early to moderate disease.
analyses reported 10-2 test detects progression earlier than 24-2 test in eyes with early field defects.

Therefore, in low resource settings, the use of serial 10-2 perimetric tests to monitor early glaucoma progression should be further investigated, as this could be relatively cheaper than serial OCT tests.

**Conclusion:** Perimetry remains an integral tool for glaucoma diagnosis and monitoring despite recent advances in technology. The ability of the 10-2 test strategy to identify VF defects in early POAG confers additional benefit on the use of the comparatively low cost SAP machine in disease evaluation especially in areas with limited resources. We recommend prospective studies to investigate the benefit of using serial 10-2 tests to monitor glaucoma progression. This can be done by monitoring the actual numeric change in decibel (dB) value of each point in every 10-2 test quadrants of patients with early glaucoma.

**References**


**Willingness to Consent to Trabeculectomy among Adult Patients Diagnosed with Primary Open Angle Glaucoma in a Tertiary Health Institution in Southern Nigeria**

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**Introduction:** Glaucoma is a major cause of irreversible blindness in West Africa. It is the second most common cause of blindness after cataract and accounts for about 30% of blindness globally. The Nigerian National blindness and low vision survey reported a prevalence of 16.7% of blindness from glaucoma. Epidemiological studies have reported a higher prevalence of the disease among individuals of West African descent. Studies have also documented a higher prevalence of developing the disease at a younger age among individuals from West African decent with a higher risk of people going blind from glaucomatous optic atrophy following late presentation. Despite the recommendation that trabeculectomy remains the first line treatment option in glaucoma management for Africans, several studies in Africa have documented poor uptake of glaucoma surgery (trabeculectomy) among patients diagnosed with primary open angle glaucoma (POAG) even when the surgery is provided free.
This study therefore seeks to assess the willingness of patients diagnosed with Primary open Angle glaucoma to consent to Trabeculectomy surgery as a management option for the disease. **Materials and Methods:** In this cross-sectional descriptive study, 101 adult patients diagnosed with POAG attending the glaucoma subspecialty unit of the ophthalmology department were consecutively recruited for the study. The study was conducted between February and May 2019 at the ophthalmology clinic of the University of Calabar Teaching hospital. Inclusion criteria: Patients aged 18 years and above diagnosed with POAG, patients with regular follow up with the glaucoma service for at least 6 months, patients who are on ocular anti-hypertensives or have undergone laser for the management of the disease. Exclusion criteria: Patients with secondary glaucoma and patients who had already undergone trabeculectomy surgery in either eye (this category of patients was excluded to reduce bias). Ethical approval for the study was obtained from the Health Research Ethical Committee of University of Calabar Teaching Hospital, Calabar, Nigeria. This study adhered to the Helsinki declaration of Human research. **Results:** A total of 101 participants with Primary open angle glaucoma were interviewed aged 21-84 years with a mean age of 56.72 ± 13.4 years. Majority of the participants were Males (64%). At presentation, only 49.4% of patients had good vision (>6/18); while 13.5% were blind (<3/60) in worse eye. Approximately 93.9% used topical ocular lowering medication only for the management of the disease; with 52.7% using more than one topical lowering medication. Sixty-five percent of participants expressed willingness of consent to trabeculectomy for the management of the disease. On the other hand, of the 35 (34.6%) participants who did not consent to trabeculectomy, Fear of going blind after surgery was the major reason (Figure 1). **Conclusion:** Majority of Adults with Primary Open Angle Glaucoma (POAG) in the tertiary health institution expressed willingness to consent to trabeculectomy as a management option. Therefore, the onus lies on ophthalmologists to...
offer trabeculectomy as a management option for early POAG with intractable intraocular pressure despite adequate use of conservative medical therapy.

References
A Case Series of Congenital Globe Abnormalities Seen at the University of Benin Teaching Hospital, Benin City, Nigeria

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Introduction: Congenital globe anomalies are structural defects of the eyeball that occur during intrauterine life and are present at birth. The cause may be unknown, from genetic or environmental factors. Mal-development of the eyes can range from complete absence, deformed to incompletely developed eyeballs.¹,² The Paediatric Ophthalmology Unit of the University of Benin Teaching Hospital is a referral center for patients from within and outside Edo State. We present a series of seven cases of globe abnormalities at this facility seen in the last two years. Parents gave consent for photographs to be taken and the pictures were carefully cropped to conceal patients’ identities in keeping with the declaration of Helsinski.

Case Presentation:
Case 1: Right microphthalmos, Left cystic eye
EH is a female referred from Delta State at age 5 days with a history of inability to open the eyes at birth. Examination revealed a microphthalmic right eye (RE) and a cystic mass in the left socket with no eyeball visualized.

Case 2: Bilateral Anophthalmia
OE, a male, presented at age 2 months with a history of difficulty in opening the eyes since birth. On examination, there was bilateral anophthalmia.

Case 3: Left Congenital cystic eyeball
KA is a 16 day old male baby who presented with mass in the left eye since birth. The mass had remained the same in size and did not change with crying. On examination, there was a pedunculated cystic mass, measuring about 3cm by 4cm, which transilluminated brightly (Figure 1). The right eye was normal.

Case 4: Right microphthalmia and left incomplete cryptophthalmos
IE, a one week old female presented with inability to open the right eye and a swelling of the left eye from birth. Examination showed a microphthalmic right eye (RE) and the left eye was completely covered with skin. Ultrasound scan of left orbit showed an amorphous echogenic structure without a well-defined globe.

Case 5: Left Cryptophthalmos
SL is a 15 day old baby who presented with inability to open the left eye. On examination, the right eye was normal. The left eye had absence of the lids with the skin continuous over the globe (Figure 2).

Cases 6 and 7: Mass right eye
OE and AS. These patients, both males presented at different times at age 3 weeks and 4 months with a mass in the right orbit and a normal looking left eye. The surface of the mass appeared...
covered with keratinized conjunctiva. The patients were worked up for enucleation.

**Conclusion:** It is difficult to ascertain the causes of the congenital anomalies observed because many of the parents were unable to give a useful account of the incidents that occurred in early pregnancy. Exposure to irradiation may contribute. Facilities for genetic studies are not readily available to help determine the genetic make-up or chromosomal abnormality that may have contributed to the development of the abnormality. In studies by Chuka-okosa et al and Onwasigwe, the possible causes of these anomalies were also not ascertained. Three patients were referred from Delta State known for its environmental pollution which may be a pointer to a possible role. More studies will need to be done to clarify this role.

**References**


**Retinopathy of Prematurity Screening in University of Benin Teaching Hospital, Benin City**

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**Introduction:** Retinopathy of prematurity (ROP) is a disorder of the developing retinal blood vessels in preterm infants who have birth weight of 1500g or less or gestational age of 32 weeks or younger. With better neonatal care, preterm babies are surviving at an earlier gestational age. Prolonged stay in neonatal care with sustained use of oxygen predisposes these babies to developing retinopathy. Other predisposing factors include anemia, multiple blood transfusions, septicaemia, multiple births, respiratory distress syndrome and apnoea. The aim of this study is to report on our experience screening preterm babies in the Special Care Baby Unit (SCBU) in University of Benin Teaching Hospital, Benin City, Nigeria.

**Methods:** This was a retrospective study conducted from October 2018 to June 2019. All babies who were 34 weeks gestation and below, 1.9kg and less or who had been on oxygen, with predisposing factors for retinopathy of prematurity were included in the study. The first screening was done 3-4 weeks post-delivery.

**Results:** Forty babies met the inclusion criteria and were screened. There were 18 males and 22 females giving a male: female ratio of 1: 1.2 with birth weight ranging from 410g to 1820g and gestational age from 26 weeks to 33 weeks. Eighteen babies (45%) had retinopathy of prematurity. Five of these babies (27.8%) had type 1 ROP requiring treatment while thirteen (72.2%) had type 2 ROP which required close follow up but was not severe enough for immediate treatment. One baby was treated and is alive. One died before treatment could be instituted. The remaining three

**Figure 1:** Examination of preterm by Pediatric Ophthalmologist
defaulted due to financial constraint. Of these three, one presented after 5 months with stage 5 retinopathy in both eyes. All the babies who had ROP had multiple risk factors.

**Discussion:** The proportion of babies detected with ROP in this study was 45%. This is similar to Adio’s study in Port Harcourt and Onyango’s study in Kenya.\(^2,3\) This is in contrast to the Lagos study which had a prevalence of 15%.\(^4\) Although the gestational age for Adio’s study was less than 32 weeks compared to our study of less than 34 weeks, older babies between 32 and 34 weeks still presented with ROP, necessitating the screening of these children.

The lowest birth weight in our study was 410g (GA 28 weeks) and had type 1 ROP which was treated with anti-VEGF (Lucentis). This is low compared to the Ilorin study where minimum birth weight was 950g and Port Harcourt 900g.\(^2,5\) This shows that preterm infants who have extremely low birth weight can survive indicating the improvement in our neonatal service.

Five of the babies with ROP (27.8%) had type 1 ROP which required treatment within 48 hours. This compares to the Kenya study of 20.9% but is higher than what obtained in Palestine\(^6\) where severe type 1 ROP accounted for 11.3%, as well as in Lagos where treatable ROP accounted for 7.5% and Port Harcourt where threshold disease was 4%. This may be due to the duration of exposure to oxygen as these babies were younger with gestational age ranging from 27-30 weeks. All babies with ROP had multiple risk factors. This is similar to what was found in the Ilorin study. The presence of multiple risk factors could have predisposed these infants to developing ROP. Challenges encountered during screening included poor documentation, poor referral system between the ophthalmologists and neonatologists, financial constraint of parents which prevented treatment of patients and poor coordination of follow up visits. The solutions proffered to overcome these challenges included retraining of the assistant to properly document information, active involvement of the neonatologist and other members of the team in data collection and referral of patients to the eye clinic, education of the parents to create awareness of the need for follow up after discharge, education and encouragement of parents whose children needed treatment as well as liaising with records to develop follow up appointment schedule to incorporate the patients into the regular eye clinic.

**Conclusion:** The presence of a high prevalence of ROP brings to fore the need for early screening of preterm babies who have low birth weight or factors which could predispose them to retinopathy of prematurity. This is because such children are at a risk of severe loss of vision from this disease. The challenges encountered in screening these children can be overcome by improved documentation, better referral system, exploration of possible funding for treatment and coordination of follow up visits.

**References**


Purtscher’s Retinopathy Following Road Traffic Accident: A Case Report

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Introduction: Purtscher’s retinopathy is a rare occlusive, vasculopathy which occurs following trauma to the head, chest, long bone fractures¹⁴. It is characterized by sudden visual loss of variable severity, intraretinal haemorrhages, Purtscher flecken and cotton wool spots.

Case Presentation: A 50-year-old female accountant, of Bette tribe, presented to our facility with a history of sudden bilateral painless loss of vision of 11 days duration following a Road Traffic Accident (RTA). Patient lost consciousness for about 10 minutes and regained consciousness spontaneously. She experienced severe chest and back ache following the RTA which warranted her admission in a private clinic. Visual loss was observed 2 days following the RTA. There was no associated flashes of light, metamorphopsia, micropsia or macropsia. Patient had no systemic illness.

Past ocular history was not contributory. There was no family history of blindness.

On examination, the presenting visual acuity was Hand Movement (HM) in the right eye and CF @ 1m in the left eye. There was no improvement with pinhole. Pupils were equal, regular, round, briskly reactive to light in both eyes. There was no relative afferent pupillary defect. Slit lamp examination of the anterior segment was unremarkable in both eyes. Intraocular pressures (IOP) were normal. Dilated funduscopy showed extensive intraretinal haemorrhages, cotton-wool spots and Purtscher’s flecken as shown in the fundus photographs (Figures 1 & 2).

A diagnosis of Purtscher’s retinopathy was made based on the history and clinical findings. She received intravitreal injection of 0.05mg in 0.5ml of ranibizumab in RE a day after presentation. A month later visual acuity had improved to 6/60 in both eyes with no improvement with pinhole. Patient went for job related program a month after presentation to another city and presented at a tertiary health facility where a diagnosis of bilateral burnt out sickle cell retinopathy (grade 5) with macula ischaemia was made and patient had bilateral panretinal laser photocoagulation.

Discussion: Incidence of Purtscher and Purtscher-like retinopathies is about 0.24 persons per million per year¹². Purtscher-like-retinopathy has a similar fundus appearance as Purtscher’s Retinopathy but without a history of trauma and...
has been associated with complement-activating conditions such as acute and chronic pancreatitis, renal failure, collagen vascular diseases, thrombotic thrombocytopenic purpura and HELLP (hemolysis, elevated liver enzymes, low platelet count) syndrome\textsuperscript{1,2,6} and following childbirth.\textsuperscript{2,6} The exact pathogenesis of Purtscher and Purtscher-like retinopathy is not completely understood. Postulated pathogenetic mechanisms include venous dilatation due to high intrathoracic pressure after chest compression, vasculitis secondary to lipase release after acute pancreatitis and vascular occlusion resulting from air, fat, leukocyte aggregates, platelets and fibrin.\textsuperscript{1,6} Visual prognosis in Purtscher’s Retinopathy is variable and depends on underlying condition with spontaneous recovery of at least 2 snellen’s lines seen in half of cases.\textsuperscript{2}

**Conclusion:** Patients with visual loss following trauma to the head or chest should be referred to an ophthalmologist as soon as possible as this could be a pointer to Purtscher’s retinopathy. The findings on the retina may normalize or improve with time and may pose a diagnostic challenge if the patient presents later in the course of the disease. Reporting of cases is useful to further strengthen available evidence.

**References**


**Central Serous Retinopathy**

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**Background:** Central Serous Retinopathy (CSR) is a localized well-circumscribed exudative detachment of sensory retina with or without detachment of the retinal pigment epithelium (RPE).\textsuperscript{1,5} The purpose of this write-up is to provide a concise up-to-date information on CSR.

**Methods:** The Internet was searched in English with Google Scholars, Hinari and Elsevier’s Scopus for key words such as central serous retinopathy, update, latest discovery and new treatment modalities.

**Results:** Thirteen relevant peer reviewed articles were downloaded of which nine had direct bearing with the objective of this article. In addition, two textbooks were reviewed to complement available information.

**Discussion:** Several pathogenic mechanisms have been opined by several authors\textsuperscript{4-7}. Gass\textsuperscript{4} stated that focal increase in permeability of the choriocapillaris leads to leakage of electrolytes, water and proteins in the sub-retinal space. Piccolino\textsuperscript{5} on the hand postulated that retinal adhesion force in this condition is not sufficient enough to resist the hydrostatic pressure in the choriocapillaris. The malfunctioning of RPE pump was put forward by Spitznas\textsuperscript{6}. In a more liberal perspective, Yannuzzi\textsuperscript{7} wrote that CSR most likely results from multifactorial interplay of genetics, environment and behaviour.

Steroid use, type A personality, emotional stress, alcohol, systemic lupus erythematosus, organ transplantation, gastro-esophageal reflux, Cushing’s syndrome, and pregnancy are the more consistent risk factors.\textsuperscript{2} Typically, CSR is sporadic, unilateral, occurs in young to middle-aged healthy males. If the macular is spared, CSR is asymptomatic. Symptomatic cases present with sudden onset of defective vision, which is variable and could be as fair as 6/9. The impaired vision is non-progressive, improves with pin hole and corrected to 6/6 with low plus lens. Metamorphopsia, macropsia/micropsia, positive and negative central scotoma
Slit lamp examination with 90/78D lens reveals macula elevation from sub retinal fluid (SRF). Sub-retinal fibrin precipitates, retinal pigment epithelium (RPE) atrophy, pigment clumps and RPE track in chronic cases and serous RPE detachment are variable findings.

Fundus photography (Figure 1) and Optical Coherence Tomography (OCT) (Figure 2) provide avenues for patients’ education and disease follow-up. Fundus Fluorescein Angiography (FFA) which may show typical smoke stack or ink blot appearance (Figures 3 and 4) guides laser ablation of leaking points, if necessary.

CSR, being largely self-limiting, is managed conservatively in most instances. However, there are certain indications for treatment. These include, loss of vision due to any cause including CSR in one eye, persistent SRF of more than three months duration, occupational need for early visual recovery and when steroids cannot be stopped due to systemic condition. The role of potassium-sparing eplerenone is not well established in literature. In sub-foveal leaks, laser therapy is inappropriate making photodynamic therapy the best option.

Conclusion: In conclusion, CSR is a self-limiting ocular disease of young men that could recur following treatment and progress into a chronic stage that unleashes severe ocular morbidity from scarred choroidal neovascularization or denuded outer retina.
Head-Mounted Smartphone-Based Indirect Ophthalmoscopy in Adult Patients With Retinal Diseases: Materials and Methods

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Purpose: To describe an inexpensive modified head-mounted smartphone-based indirect ophthalmoscopy technique for obtaining fundus images in adult patients with retinal diseases.

Materials and Methods: A headset with capacity to hold several kinds of smartphones was designed out of available and affordable materials which included a selfie stick, specially strapped to a construction helmet with a masking tape (Figures 1a & 1b). The smartphone phone to eye distance was adjusted to the comfort of the examiner. The resulting headset was used to take fundus video recordings, through dilated pupils of adult patients with retinal pathologies, using an iPhone SE (Apple Inc., Cupertino, California), a Pan-Retinal 2.2 indirect ophthalmoscopy lens (Volk Optical Inc., Mentor, Ohio) and the FiLMiC Pro mobile application (Filmic Inc., Seattle, Washington). The procedure was performed in a darkened clinic room with the patients lying supine on an examination couch. The lens to smartphone distance was about 12-15cm while the lens to patient distance was about 5cm. Fine adjustments in positioning and alignment are made until the full image of the patient’s retina within the lens fills the screen of the smartphone. Video acquisition time per eye was limited to ninety seconds, with an intervening break period if patient felt discomfort. Acquisition time was doubled for cases requiring scleral indentation. Screenshots photographs were taken from video frames, labeled and securely stored.

Results: The headset proved to be safe, adjustable and easy to use. Fundus images of acceptable quality were obtained using a regular indirect ophthalmoscope (Figure 2). The head-mounted design also permitted the use of a scleral...
depressor by the examiner without the need for assistance. The headset system was more intuitive compared with holding the smartphone in one hand and the indirect BJO lens with the other hand. 

**Conclusion:** Indirect ophthalmoscopy using a modified head-mounted smartphone-based setup is possible and allows for viewing/documentation of central and peripheral retina through a dilated pupil.

**References**


**Idiopathic Polypoidal Choroidal Vasculopathy (IPCV)**

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**Email:** favouredolu@yahoo.com

**Background:** Idiopathic polypoidal choroidal vasculopathy (IPCV) is a disease of choroidal vasculature resulting in idiopathic exudative and or haemorrhagic disorder of the macula. Its end point is subretinal fibrosis that is associated with severe ocular morbidity. The aim of this article is to provide a basic and current information on IPCV.

**Methods:** The Internet was searched in English with Google Scholars, Hinari and Elsevier’s Scopus for key words such as idiopathic polypoidal choroidal vasculopathy, update, latest discovery and new treatment options.

**Results:** Twelve recent and relevant peer reviewed articles were downloaded after an internet search.

**Discussion:** Typically bilateral, IPCV affects all races but commoner in heavily pigmented people with no gender bias. Cases thought to be wet age-related macular degeneration (AMD) have been reported to be IPCV.

The etiology is not clearly understood. However, reviewed articles agreed that there is a disorder of inner choroidal vasculature in which there is a network of branching vessels deep to choriocapillaris in association with terminal aneurysmal dilatations. The assumption that IPCV is a subtype of choroidal neovascular membrane (CNVM) is not supported by its course and worse visual prognosis.

Patients’ complaints are decreased and/or distorted vision, central or paracentral scotoma from sub-foveal fluid accumulation. On slit lamp bio-microscopy with 90/78D lens, lesions are orange-reddish bulb-like lesions budding from chorioid into the subretinal space, with predilection for peripapillary area. Macula and even the periphery are not exempted. Subtotal or total haemorrhagic /exudative retinal detachment...
and pigment epithelial detachment (PED), with or without breakthrough vitreous haemorrhage or hard exudates may also be seen (Figure 1).\textsuperscript{3,7,8}

Optical coherence tomography (OCT) shows tall peaked serous/haemorrhagic PED and sub-retinal fluid (SRF) (Figure 2). The polyps are seen as dome-like elevations of the retinal pigment epithelium with moderate internal reflectivity. A highly reflective line just below these lesions is consistent with location of the branching vascular network (BVN). The dual reflective layers are also called “double-layer sign,” and are seen in 59% of eyes with IPCV.\textsuperscript{2,10,11}

Indocyanide green angiography (ICGA) is the gold standard and shows the BVN better than fundus fluorescein angiography. Polyps are seen as focal hyperflourescent spots (Figure 1). Two types of polyps could be seen based on ICGA: type 1 (polypoidal CNV); poly(s) with well-defined BVN (both feeder and draining vessels), and type 2 (typical PCV): poly(s) with absent BVN (neither feeder nor draining vessels).\textsuperscript{2,12}

Treatment is based on ablation of leaks seen on ICG with photodynamic therapy (PDT). Intravitreal injection of anti-vascular endothelial growth factors (anti-VEGF) have variable success. Combination of both treatments seem to yield greater therapeutic results.\textsuperscript{5}

In conclusion, IPCV affects all races but tends to be commoner in heavily pigmented people. Visual outcome could be good especially with combined PDT and intravitreal anti-VEGF injections.

**References**

9. Cheng CK, Peng CH, Chang CK, Hu CC, Chen LJ. One-year outcomes of intravitreal bevacizumab (avastin) therapy for polypoidal...
Proceedings of 2019 OSN Conference: VITREO-RETINA


Knowledge of Diabetes and Diabetic Retinopathy among a Rural Population

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Introduction: Diabetes as well as diabetic retinopathy have currently become global epidemics.1 Unfortunately, the burden is more in developing countries compared to the developed countries.2 Diabetes is associated with significant morbidity and mortality. Diabetic retinopathy is one of the major complications of diabetes and is associated with visual impairment. Early detection and prompt treatment remain the gold standard for the prevention of visual impairment from diabetic retinopathy.1 The effectiveness of this is however dependent on the baseline knowledge regarding these disease conditions which in turn has been shown to influence practice.3,4 The aim of this study is to determine the knowledge regarding diabetes and diabetic retinopathy among a rural population in Enugu.

Methods: This was a cross-sectional descriptive study carried out in Umugma community of Enugu State in September 2017. An interviewer-administered questionnaire was used to assess their knowledge regarding diabetes and diabetic retinopathy (DM and DR). Participants’ responses were graded into ‘good/poor’ knowledge using predefined scores. Eleven questions with a total of 26 options were used to assess knowledge of DM while 4 questions with a total of 14 options were used to assess knowledge of DR. The former was scored from 0 to 26 and a score of ≥13 was regarded as poor knowledge while the score was regarded as good knowledge. Similarly, knowledge of DR was scored from 0 to 14 and a score of ≥7 was regarded as poor knowledge while the score was regarded as good knowledge. IBM-SPSS version 21 was used for data analysis. Multivariate regression analysis was used to determine the predictors of good knowledge with p < 0.05.

Results: A total of 539 participants consisting of 227(42.1%) males and 312(57.9%) females were interviewed. The mean age of the participants was 40.9±16.9 (range: 18 to 87years). Approximately 73.0% of the participants had good knowledge of diabetes but only 39.9% had good knowledge of diabetic retinopathy. Younger age, formal education and white-collar occupation were statistically significant predictors of good knowledge of diabetes (p = 0.001, 0.001 and 0.015 respectively) while formal education alone was predictive of good knowledge of diabetic retinopathy (p = 0.002).

Conclusion: The poor knowledge of diabetic retinopathy with good knowledge of diabetes observed in this study may be due to the fact that diabetic retinopathy is not an obvious complication of diabetes; people will be more conversant with the term blindness which it causes than diabetic retinopathy itself. This finding is similar to the finding by other researchers6 and the poor knowledge of diabetic retinopathy was attributed to illiteracy. Hussain et al7 however observed good knowledge of diabetic retinopathy in their study and attributed it to high female literacy, although there were more diabetics among their participants.

It is not surprising that younger age, formal education and white-collar occupations were predictive of good knowledge of diabetes. Younger people are likely to be more inquisitive; formal education and white-collar occupation are
associated with exposure to educative materials, learning and training opportunities. There is need to channel more effort towards educating the populace on diabetes and its ocular complications particularly diabetic retinopathy in order to contribute to curbing the menace of visual impairment arising from these disease conditions.

References

Ocular Toxoplasmosis among Livestock Farmers and Raw Meat Handlers in Uyo, Nigeria

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2Department of Microbiology, University of Uyo Teaching Hospital, Uyo, Nigeria

Background: Toxoplasmosis is the most common cause of infectious posterior uveitis in humans and can lead to low vision and blindness. Cats are the definitive host of Toxoplasma gondii. Serological studies estimate that 30-50% of the global population has been exposed to and may be chronically infected with T. gondii. Most infections in Africa are acquired through improperly cooked contaminated meat, unwashed contaminated fruits, vegetables, meat chopping boards and unwashed contaminated hands, and by contact with infected cat droppings.

The seroprevalence of Toxoplasma gondii IgG varies from 14% in USA to as high as 98% in southern Brazil. In Nigeria, 28.7% seroprevalence of T. gondii infection has been reported in healthy adults and 37.8% to 54.2% among HIV-positive persons. This study aimed to determine the prevalence of ocular toxoplasmosis and potential risk factors amongst livestock farmers and raw meat handlers in Uyo, Nigeria.

Methods: This was a descriptive cross-sectional community-based study involving clinical eye examination to detect presumed ocular toxoplasmosis (POT) and laboratory detection of anti-Toxoplasma gondii IgG antibody using Enzyme Linked Immunosorbent Assay for serologically-confirmation of ocular toxoplasmosis (OT). HIV status of participants was determined using standard rapid testing kits. Interviewer-administered questionnaires were used to collect information on socio-demography, occupation and potential risk factors.

Results: Out of 339 participants aged 15-78 (mean 34.8±11.6) years, males were 283 (83.5%). A total of 189 (55.8%) participants tested seropositive for anti-T. gondii IgG antibodies. Eight (2.4%) participants had POT; among these six (75%) were seropositive for anti-T. gondii IgG antibody while two (25%) were HIV-seropositive. Factors associated with OT were age (31-50 years) and female gender (P value = 0.049 and 0.001, respectively). Most of the ocular lesions (87.5%) were unilateral and located at the posterior pole (77.7%).

Conclusion: Overall, the prevalence of OT among livestock farmers and raw meat handlers in Uyo
was found to be 1.8%, while the prevalence among those seropositive for anti- *T. gondii* IgG antibody was 3.2%. A similar cross sectional population-based study in Ghana recorded a prevalence of 2.6%. However, a meta-analysis report in a tertiary hospital in northern California, indicated that OT was diagnosed in 8.4% of patients with uveitis. The higher prevalence of OT noted in the Californian report could be due to the fact that it was a hospital-based study. Our study showed a high anti-*T. gondii* IgG seroprevalence of 55.8% out of which 3.2% had OT. In a Brazilian study, 74.5% were seropositive for IgG anti-*T. gondii* antibody; of these, 27.3% had OT. Most of the ocular lesions affected the posterior pole (77.7%) which explains high percentage of blurring of vision complained by the patients.

### Table 1: Factors associated with ocular toxoplasmosis among study participants

<table>
<thead>
<tr>
<th>Variables</th>
<th>Total N=339(%)</th>
<th>Presumed ocular toxoplasmosis (POT) (%)</th>
<th>P value</th>
<th>Sero-confirmed ocular toxoplasmosis (OT) (%)</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age group (year)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>≤30</td>
<td>145 (42.8)</td>
<td>0 (0.0)</td>
<td>0.002+*</td>
<td>0 (0.0)</td>
<td>0.049+*</td>
</tr>
<tr>
<td>31-50</td>
<td>162 (47.8)</td>
<td>8 (100.0)</td>
<td></td>
<td>6 (100.0)</td>
<td></td>
</tr>
<tr>
<td>Above 50</td>
<td>32 (9.4)</td>
<td>0 (0.0)</td>
<td></td>
<td>0 (0.0)</td>
<td></td>
</tr>
<tr>
<td>Sex</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>283 (83.5)</td>
<td>3 (37.5)</td>
<td>0.004+*</td>
<td>1 (16.7)</td>
<td>0.001+*</td>
</tr>
<tr>
<td>Female</td>
<td>56 (16.5)</td>
<td>5 (62.5)</td>
<td></td>
<td>5 (83.3)</td>
<td></td>
</tr>
<tr>
<td>Occupation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Livestock sellers</td>
<td>166 (49.0)</td>
<td>3 (37.5)</td>
<td>0.184*</td>
<td>1 (16.7)</td>
<td>0.056*</td>
</tr>
<tr>
<td>Butchers/meat sellers</td>
<td>121 (35.7)</td>
<td>2 (25.0)</td>
<td></td>
<td>2 (33.3)</td>
<td></td>
</tr>
<tr>
<td>Middlemen</td>
<td>52 (15.3)</td>
<td>3 (37.5)</td>
<td></td>
<td>3 (50.0)</td>
<td></td>
</tr>
<tr>
<td>Drinking unpasteurized milk</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>151 (44.5)</td>
<td>2 (25.0)</td>
<td>0.307*</td>
<td>2 (33.3)</td>
<td>0.696*</td>
</tr>
<tr>
<td>No</td>
<td>188 (55.5)</td>
<td>6 (75.0)</td>
<td></td>
<td>4 (66.7)</td>
<td></td>
</tr>
<tr>
<td>Eating undercooked meat</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>103 (30.4)</td>
<td>2 (25.0)</td>
<td>1.00*</td>
<td>1 (16.7)</td>
<td>1.00*</td>
</tr>
<tr>
<td>No</td>
<td>236 (69.6)</td>
<td>6 (75.0)</td>
<td></td>
<td>5 (83.3)</td>
<td></td>
</tr>
</tbody>
</table>

* Fischer’s Exact Test; + Significant p value

### Table 2: Prevalence of presumed ocular toxoplasmosis (POT) and confirmed ocular toxoplasmosis (OT)

<table>
<thead>
<tr>
<th>Ocular toxoplasmosis</th>
<th>Presumed ocular toxoplasmosis among respondents (%)</th>
<th>Confirmed ocular toxoplasmosis among respondents (%)</th>
<th>Among participants seropositive for <em>T. gondii</em> IgG, n=189 (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>8* (2.4)</td>
<td>6 (1.8)</td>
<td>6 (3.2)</td>
</tr>
<tr>
<td>No</td>
<td>331 (97.6)</td>
<td>333 (98.2)</td>
<td>183 (96.8)</td>
</tr>
<tr>
<td>Total</td>
<td>339</td>
<td>339</td>
<td>189</td>
</tr>
</tbody>
</table>

* blurring of vision (100 %)
The prevalence of POT and OT among livestock farmers and raw meat handlers in Uyo is 2.4% and 1.8%, respectively. Potential risk factors are female gender and persons between fourth and fifth decades of life. Awareness creation on toxoplasmosis among this occupational group is advocated.

References
Audit of Ophthalmology Discharge Summaries in a Nigerian Teaching Hospital

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Introduction: Discharge summaries are important components of hospital care which ensure continuity, especially in hospital transitions.¹ A discharge summary eases out readmission to the hospital and extraction of data for research and as a summary for other purposes.¹ It is generally accepted that provision of a discharge summary is part of good clinical practice.² In the United States of America, the Joint Commission International (JCI) acknowledges its importance and mandates that certain essential elements be included³.

Methods: This was a retrospective review of all discharge summaries written by house officers and residents in ophthalmology from 1st January to 31st December, 2012 in University of Nigeria Teaching Hospital, Enugu. The summaries were checked for presence, completeness and accuracy of domains considered essential.

The following items/domains were assessed:
1. Biodata
2. Date admitted and date discharged
3. Consultant in charge of case
4. Referral doctors address (where applicable)
5. Principal diagnosis
6. Complications and associated conditions
7. Operations/surgeries
8. Summary of clinical course
9. Condition at discharge
10. Discharge/follow up instructions, especially discharge medications (i.e. dosage, duration)
11. Next clinic appointment date
12. Name, signature, and rank of discharging resident doctor.

Exclusion criteria were case files with missing discharge summaries, illegible discharge summaries, and case files of any patient who died while on admission.

Data analysis was performed with the use of Statistical Package for Social Sciences (SPSS) version 17.

Results: A total of 420 discharge summaries were studied. Fourteen case files were excluded; 11 had missing discharge summaries, while one was for a patient who died in the ward.

Table 1: Frequency of completeness and accuracy of key information provided for some of the content items checked in the 420 discharge summaries

<table>
<thead>
<tr>
<th>Content Item</th>
<th>Accurate/Complete (%)</th>
<th>Inaccurate/Incomplete (%)</th>
<th>Absent (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biodata</td>
<td>267 (63.3)</td>
<td>153 (36.4)</td>
<td>Nil</td>
</tr>
<tr>
<td>Admission/discharge dates</td>
<td>412 (98.1)</td>
<td>8 (1.9)</td>
<td>Nil</td>
</tr>
<tr>
<td>Consultant in charge of the patient</td>
<td>418 (99.5)</td>
<td>2 (0.5)</td>
<td>Nil</td>
</tr>
<tr>
<td>Principal diagnosis</td>
<td>386 (91.9)</td>
<td>30 (7.1)</td>
<td>4 (1)</td>
</tr>
<tr>
<td>Complications/associated conditions</td>
<td>139 (33.1)</td>
<td>165 (39.3)</td>
<td>116 (27.6)</td>
</tr>
<tr>
<td>Surgical procedures (n=197)</td>
<td>371 (88.3)</td>
<td>43 (10.2)</td>
<td>6 (1.4)</td>
</tr>
<tr>
<td>Condition on discharge</td>
<td>398 (94.8)</td>
<td>10 (2.4)</td>
<td>12 (2.8)</td>
</tr>
<tr>
<td>Follow up notes/discharge medications</td>
<td>322 (76.7)</td>
<td>44 (10.5)</td>
<td>54 (12.8)</td>
</tr>
<tr>
<td>Next clinic appointment date</td>
<td>296 (70.5)</td>
<td>7 (1.7)</td>
<td>117 (27.8)</td>
</tr>
<tr>
<td>Name/signature of doctor</td>
<td>144 (34.3)</td>
<td>273 (65)</td>
<td>3 (0.7)</td>
</tr>
</tbody>
</table>
Most items assessed had some contents in their respective fields, the exception being the field for referral doctor’s address (Table 1). Five discharge summaries were found to have no entries made for referral doctors’ address.

The most problematic field was the summary of clinical course during admission with varying proportions of incomplete and absent information (Table 2).

**Table 2:** Frequency of completeness and accuracy of key information provided in the 420 discharge summaries concerning the clinical course (“summary”) portion of the discharge summary template currently being used at the Teaching Hospital.

<table>
<thead>
<tr>
<th>Content Item checked</th>
<th>Complete/accurate(%)</th>
<th>Incomplete/ inaccurate(%)</th>
<th>Absent(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>History of presenting illness</td>
<td>376(89.5)</td>
<td>38(9.1)</td>
<td>6(1.4)</td>
</tr>
<tr>
<td>Significant examination findings</td>
<td>293(69.8)</td>
<td>21(5)</td>
<td>106(25.2)</td>
</tr>
<tr>
<td>Results of relevant investigations</td>
<td>79(18.8)</td>
<td>7(1.7)</td>
<td>334(79.5)</td>
</tr>
<tr>
<td>Changes in medications</td>
<td>52(12.4)</td>
<td>Nil</td>
<td>368(87.6)</td>
</tr>
<tr>
<td>Main treatment given</td>
<td>281(66.9)</td>
<td>15(3.6)</td>
<td>124(29.5)</td>
</tr>
</tbody>
</table>

Notable errors/observations included widespread use of the abbreviation ‘ad’ for adult in the field for age; use of several other abbreviations without first writing the words in full; and mixing up the laterality of the affected eye or the eye being treated, i.e. writing “right eye” instead of “left eye”.

In addition, there was widespread use of only terms such as “satisfactory,” “not satisfactory,” “stable,” and “not stable,” when providing information in the field for “patient’s condition on discharge”.

Another error noted was writing only the full name of the discharging doctor without a signature. Other errors also noted were mixing up of eye ointments with eye drops during documentation and the practice of writing only an original copy of the discharge summary instead of the stipulated duplicate or triplicate copies.

**Conclusion:** For a good discharge summary to be written, proper training and guidance is needed and it is erroneous to assume that every doctor can write a good /correct summary. Lack of proper guidance from supervising consultants may result in discharge summaries being given low priority. In this study, the most problematic portion was the area on “summary” which contains pertinent information on clinical course during hospital stay and demonstrated need for improvement.

Against this backdrop, one can infer that the under reporting of results from relevant investigations and changes in medications (as noted in our study) is a worrisome trend for the promotion of continuing care.

Based on the above, although no universal consensus exists on the ideal format for discharge summaries, we propose that several of these deficiencies can be mitigated if appropriate sub-headings are provided in the summary to serve as a guide.

To improve our discharge summary system, interventions which may be required include the following measures:

1. Intensive and regular physician education on the importance and process of writing discharge summary;
2. The supervising consultants should oversee the preparation of these summaries on a regular basis;
3. Development of validated standardized discharge summary templates which will recognize the peculiarities of specialized patient groups;
4. The transition to computer based electronic discharge summary system as most Nigerian public institutions are still using paper-based electronic records.

Finally, health policy makers should make and implement recommendations on the provision of an appropriate format for writing hospital discharge reports.

**References**

Accuracy of Diagnosis and Referral of Ophthalmic Patients by General Practitioners

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Introduction: The general outpatient department of a hospital is the first point of contact for most patients. Health care services are offered for a wide variety of diseases, including eye diseases. Ocular diseases have been found to be common in general practice.1,2 The ability of the general practitioner to accurately identify and manage ophthalmic patients is vital to patients’ outcome.3 This study aimed to determine the level of agreement between the general practitioners (GP) and the ophthalmologist in the diagnosis and referral of patients with ocular disorders at Enugu State University of Science and Technology (ESUTH) Teaching Hospital, Parklane, Enugu.

Methods: New patients presenting at the General Out-Patient Department (GOPD) of ESUT Teaching Hospital, Parklane, Enugu with different complaints, including eye complaints, were selected by systematic random sampling. Old or follow up patients were excluded. Selected patients were evaluated by the ophthalmologist after they had been independently assessed by the general practitioners. Diagnoses and referral decisions of the GPs were compared with those of the ophthalmologist using Kappa statistics.4 Ocular disorder was defined as any eye disease; referral decision refers to whether or not a patient was referred to the ophthalmologist. Over-referral was defined as referral of a patient with an eye disease that could be managed by the GP while under-referral was defined as non-referral of a patient with eye disease requiring referral to the ophthalmologist.

Results: A total of 382 patients were studied; and 22 GPs participated. Thirty-six (9.4%) patients were diagnosed to have ocular disorders by the GPs, while 112 (29.3%) patients were diagnosed with ocular disorders by the ophthalmologist. Only 36 (32.1%) of those with ocular disorders diagnosed by the ophthalmologist had also been diagnosed with ocular disorder by the GPs. No patient was diagnosed with ocular disorder by GP that was not diagnosed by the ophthalmologist. Correct diagnosis was made by GPs for 18 (16.1%) patients (k=0.102, p<0.05). The highest diagnostic agreement was obtained for conjunctivitis (k=0.464, P<0.05). None of the patients with posterior segment disorder was diagnosed by the GP. Majority (68 (81%); k = 0.616, p<0.05) of referrals were correctly made by GP. There were 28 (25.0%) under-referrals and 16 (19.0%) over-referrals.

Conclusion: Approximately one-third of patients seen by general practitioners had ocular disorders. But the GP detected disorders only in a third of those patients with ocular disorders; correct diagnosis of ocular disorders was made in only 16.1%, while no posterior segment disease was diagnosed. There was incorrect referral decision for up to a third of patients. This trend is worrisome as it suggests that some patients with ocular disorders who have presented to the hospital may go undetected or may not receive requisite care. Regular continuing medical education in ophthalmology, training in ophthalmoscopy as well as other skills and support for general practitioners are recommended to enhance diagnostic skills, referrals and overall management of patients.

References
3. Statham M, Sharma A, Pane A. Misdiagnosis of acute eye diseases by primary health care providers: incidence and implications | Medical
Mental Health Status of Visually Impaired Patients in Ogbomoso, Oyo State, South-Western Nigeria

Susannah Temitope Adepoju¹; Joshua Owoeye²; Yinka Ologunsua¹ and Olukayode Abayomi²

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Introduction: Loss of vision may have negative psychosocial consequences that affect everyday life. Poor mental health may potentially affect an individual’s capacity to take care of his general health¹, including his eyes. Therefore, poor mental health and visual impairment may form a vicious cycle. The aim of this study was to assess the mental health status of patients presenting with visual impairment to tertiary eye clinic in Ogbomoso, South-Western Nigeria.

Methods: A descriptive cross-sectional study carried out at the Ophthalmology Department of Ladoke Akintola University of Technology Teaching Hospital, Ogbomoso, Oyo State, South-Western Nigeria. Study participants were individuals with visual impairment (defined as best corrected visual acuity 6/9 or worse in one eye or both eyes) seen in the out-patients’ eye clinics of the hospital during the study period.

Eligible patients had their visual acuity checked by an ophthalmic nurse upon presentation at the general ophthalmology clinic and those with unaided distant visual acuity of 6/9 or less in one or both eyes had undergone refraction. Subsequently, those with best corrected distant visual acuity of 6/9 or less in one or both eyes had their names listed on each clinic day and systematic random sampling was then carried out. Questionnaires were administered to obtain information on socio-demographic characteristics and mental health. Test for association was done using Chi-square. Participants with a total score greater than or equal to 4 in the 28-items of the Mental Health General Health Questionnaire were considered to have some form of mental ill-health.

Results: Two hundred and fifty subjects were studied, of which 126 (50.4%) had mental ill-health. Older age (p=0.001), illiteracy (p=0.020), low income occupations i.e. artisans and farmers (p=0.001), shorter duration of visual impairment (p=0.001) and sudden visual impairment (p=0.001) were associated with a higher risk of mental ill-health among study subjects. Those who lost their vision less than two years prior to the time of the study had higher risk of mental health morbidity. Those with sudden loss of vision were 3.48 times more likely to have mental health morbidity compared with those with progressive loss of vision.

Conclusion: Prevalence of mental ill-health among people with visual impairment is high (50%), similar to findings in other studies², ⁴, ⁵. Associated factors included level of education, occupation and duration of visual impairment. Various studies found different factors associated with the mental health of subjects with some overlapping factors², ³, ⁵, ⁶. Predictors of good mental health included younger age group, higher level of education, being employed, longer duration of loss of vision and progressive pattern of visual impairment. Ophthalmologists should pay attention to the mental health status of visually impaired patients, especially those with the factors associated with poor mental health; and those found to have symptoms suggestive of mental ill-health should be referred promptly and appropriately.

References
2. Tunde-Ayinmode M.F, Akande T.M, Ademola-Popoola D.S. Psychological and social adjustment to blindness: Understanding from
### Table 1: Factors associated with the mental health status of subjects

<table>
<thead>
<tr>
<th>Variables</th>
<th>Mental health morbidity</th>
<th>Chi-square/Odds ratio</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Present</td>
<td>Absent</td>
<td></td>
</tr>
<tr>
<td>Age groups</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;20 years</td>
<td>16(28.6)</td>
<td>40(71.4)</td>
<td>(\chi^2 = 14.713)</td>
</tr>
<tr>
<td>21-54 years</td>
<td>55(60.4)</td>
<td>36(39.6)</td>
<td></td>
</tr>
<tr>
<td>55 years and above</td>
<td>55(53.4)</td>
<td>48(46.6)</td>
<td></td>
</tr>
<tr>
<td>Level of education</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No formal education</td>
<td>35(60.3)</td>
<td>23(39.7)</td>
<td>(\chi^2 = 11.479)</td>
</tr>
<tr>
<td>Completed primary</td>
<td>25(52.1)</td>
<td>23(47.9)</td>
<td></td>
</tr>
<tr>
<td>Completed JSS</td>
<td>10(28.6)</td>
<td>25(71.4)</td>
<td></td>
</tr>
<tr>
<td>Completed SSS</td>
<td>24(44.4)</td>
<td>30(55.6)</td>
<td></td>
</tr>
<tr>
<td>Completed Tertiary</td>
<td>32(59.3)</td>
<td>22(40.7)</td>
<td></td>
</tr>
<tr>
<td>Occupation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Civil servant</td>
<td>18(50.0)</td>
<td>18(50.0)</td>
<td></td>
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<tr>
<td>Professional</td>
<td>2(33.3)</td>
<td>6(66.7)</td>
<td></td>
</tr>
<tr>
<td>Artisan</td>
<td>34(81.0)</td>
<td>8(19.0)</td>
<td></td>
</tr>
<tr>
<td>Student</td>
<td>21(28.8)</td>
<td>52(71.2)</td>
<td>(\chi^2 = 32.308)</td>
</tr>
<tr>
<td>Trader</td>
<td>20(45.5)</td>
<td>24(54.5)</td>
<td></td>
</tr>
<tr>
<td>Farmer</td>
<td>10(62.5)</td>
<td>6(37.5)</td>
<td></td>
</tr>
<tr>
<td>Duration of visual loss</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;2 years</td>
<td>43(76.8)</td>
<td>13(23.2)</td>
<td></td>
</tr>
<tr>
<td>2 – 5 years</td>
<td>51(58.6)</td>
<td>26(41.4)</td>
<td>(\chi^2 = 49.184)</td>
</tr>
<tr>
<td>&gt; 5 years</td>
<td>32(27.4)</td>
<td>85(72.6)</td>
<td></td>
</tr>
<tr>
<td>Pattern of visual loss</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sudden</td>
<td>27(75.0)</td>
<td>9(25.0)</td>
<td>Odds Ratio = 3.48</td>
</tr>
<tr>
<td>Progressive</td>
<td>99(46.3)</td>
<td>115(53.7)</td>
<td>95% C.I.1.56 – 7.76</td>
</tr>
</tbody>
</table>

95% C.I. = 95% Confidence interval

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**Traditional Eye Medication: Still a Challenge in the Twenty First Century - Case Report**

**Sarki PD and Bulus SS**

*Department of Ophthalmology, BarauDikko Teaching Hospital, Kaduna State University, Nigeria*

**Corresponding author:** Sarki PD, Email: pdsarki@yahoo.com

**Introduction:** Traditional eye medications (TEM) are substances, naturally occurring or artificial, which are applied to the eyes to achieve a therapeutic aim. In spite of the well documented toxic effects of TEM, their use remains common practice. Studies across Africa confirmed that many individuals still use TEM before presentation to the hospital.
Case Report: A twenty-six-year-old male undergraduate presented with a five-day history of poor vision in both eyes associated with severe pains, redness and discharge which were preceded by redness, mild pain, tearing and photophobia of 2 days duration following application of plant extract and powdery concoction based on advice of friends. He had previously enjoyed good vision in both eyes.

He had a visual acuity of light perception and hand movement in the right and left eyes respectively with good light projection, oedematous lids, copious discharge and features of intense conjunctival inflammation. The right cornea was ulcerated centrally with uveal prolapse at 9 to 10 clock hours while the left cornea was hazy peripherally with uveal prolapse at 2 to 3 clock hours. Both anterior chambers were shallow with the right more than the left and pupils were corectopic. In the right eye no further details could be seen while in the left, fundus view was blurred and extra ocular motility in both eyes were normal. An assessment of bilateral ulcerative keratitis with perforation secondary to use of TEM was made. Fasting blood sugar was 4.6mmol/litre, retroviral screening was negative while conjunctival swab microscopy and culture showed no growth after 24 hours. He was referred to a corneal specialist but declined for financial and logistic reasons, so was commenced on Gutt. Moxifloxacin, Mydriacyl, Diclofenac sodium, Sub-conjunctival Genticin and oral Ciprofloxacin. He improved steadily and by ten weeks, the corneal ulcer had healed with adherent leucoma in the right eye but the left cornea was clear centrally with some peripheral scars. He had a best corrected visual acuity of hand movement in the right eye and 6/9 in the left eye.

Discussion: TEM use is associated with blinding complications due to the toxic components of the TEM. With rising trend in the use of natural medicines and access to traditional healers, there is a need to educate the ‘healers’ on the toxic effects of some of the components, as well as early identification and referral of patients as required. Visual prognosis following the use of TEM is determined mostly by time of presentation, degree of damage and management instituted. Cost of orthodox health care despite early presentation and appropriate management remains a challenge in patient care and visual prognosis. Most patients with corneal blindness are young, causing very high disability life adjusted years (DALys), and adding to the burden on the individual, community and country at large.

Conclusion: The use of TEM remains a challenge in this part of the world, so there is a dire need for more aggressive strategies to create awareness to avert its consequences.

References
Visual Function and Vision-Related Quality of Life Among Adults in Jos, Nigeria

Adeyemi FI, Oduogo OP, Adenuga OO and Mpyet CD

Introduction: Visual function (VF) is important in carrying out normal daily activities and it affects the physical and emotional well-being of an individual. Visual impairment (VI) is known to cause falls, fractures and mortality. The World Health Organization (WHO) defined quality of life (QoL) as “an individual's perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns”. Visual function is necessary for optimal orientation in functional and social life and it has profound effects on physical, psychological, mental and emotional well-being. Activity limitation is one of the effects of visual impairment and it is thought to contribute to the negative effects of VI on QoL. The aim of this study was to assess the impact of the various categories and causes of VI on VF and QoL of adults seeking eye care services in a tertiary health facility in Jos, Nigeria.

Materials and Methods: A cross-sectional study involving new adult patients (18 years and above) attending the Eye Clinic of Jos University Teaching Hospital. A sample size of 630 was calculated and information on demographic data, ocular and medical history were obtained. Visual function and vision-related QoL were assessed using standardised questionnaires. Detailed ocular examination was done to determine the cause of visual impairment. Data was analysed using SPSS version 20, p-value <0.05 was considered statistically significant.

Results: A total of 625 patients participated in the study. There were more females (55.8%) than males (44.2%). The median age of participants was 50.0 years (interquartile range 35.0 - 62.0 years). Worsening severity of visual impairment was associated with lower visual function ($\chi^2 = 79.512, p<0.001$) and QoL ($\chi^2 = 64.013, p<0.001$) scores. Those who had visual impairment from glaucoma had the lowest scores in most subscales. Those with diabetic retinopathy (DR) had the lowest scores in the subscale of general health. The lowest total visual function ($\chi^2 = 38.725, p<0.001$) and QoL ($\chi^2 = 31.519, p<0.05$) scores were also recorded among participants with glaucoma.

Discussion: Increasing severity of visual impairment was associated with decreasing visual function and QoL scores in this study. Similar findings were reported by Adigun et al in Ibadan, the Nigerian National Blindness and Visual Impairment Survey and in the United States. This shows that with worsening vision, there is greater limitation of vision dependent activities and increasing need of various forms of assistance in order to carry out daily life activities. As was found in this study, there was also report of low visual function and QoL scores among individuals with diabetic retinopathy (DR) and in an American population. The low score in the subscale of general health among those with diabetic retinopathy might be because diabetic retinopathy can be associated with other complications such as diabetic nephropathy, which will likely make these individuals perceive their general health as not being optimal.
Table 1: Visual acuity distribution among study participants

<table>
<thead>
<tr>
<th>Presenting VA in the better eye</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt;6/18</td>
<td>470</td>
<td>75.2</td>
</tr>
<tr>
<td>&lt;6/18-6/60</td>
<td>93</td>
<td>14.9</td>
</tr>
<tr>
<td>&lt;6/60-3/60</td>
<td>10</td>
<td>1.6</td>
</tr>
<tr>
<td>&lt;3/60</td>
<td>52</td>
<td>8.3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>625</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

Figure 1: Distribution of mean VF/QoL scores

Conclusion: Periodic assessment of subjective visual function and QoL of clients who access eye care services in various health facilities should be encouraged, as this will bring to the fore those who require psychological support and ultimately improving their quality of life.

References

The Influence of Sociodemographic Characteristics on Vision-Related Quality of Life in Visually Impaired Patients

Ezeh, Ernest I. 1,2, Etim, Bassey A. 1,2, Edet, Bassey3, Ezeh, Roseline N.2, Duke, Roseline E.1,2
Introduction: Vision-related quality of life (VRQOL) describes an individual’s overall sense of well-being that is related to the individual’s level of visual functioning. Visual functioning is defined by two terms: Functional Vision and Visual Function. Functional Vision describes how a person functions in vision-related activities; as opposed to Visual Function which describes how the eyes and the visual system function. Functional vision is a broader measure than visual acuity, because it evaluates patients’ ability to conduct activities of daily living (e.g., reading, driving, writing, orientation and mobility, and face recognition) for which peripheral vision, contrast sensitivity, color vision and visual acuity are important. Visual function is defined by visual acuity, visual field, contrast sensitivity, color vision, dark adaptation, and stereopsis. Currently, the assessments of these parameters are the most-accepted clinical evaluation of visual function. However they have been shown to be inadequate in explaining poor performance in vision-related activities of daily living among visually impaired patients.

The interactions of several factors such as environmental factors, personal factors, socio-cultural norms, social structure, age, gender, etc, interplay to influence the visually impaired patient’s perception of his/her quality of life. Thus, the impact of the degree of visual impairment and associated factors defines the concept of vision-related quality of life. The aim of this study was to determine the influence of sociodemographic factors on the vision-related quality of life among adults who are visually impaired.

Materials and Methods: This was a 6-month prospective cross-sectional study between August 2015 and March 2016 on consecutive adult patients with visual impairment attending the University of Calabar Teaching Hospital (UCTH) Eye Clinic. Ethical approval UCH/HREC/33/239 for the study was obtained from the UCTH Health Research Ethics Committee. All patients had presenting visual acuity worse than 6/18 in the better eye. VRQOL was assessed by the validated English version 25-item National Eye Institute Visual Functioning Questionnaire (NEI VFQ-25). Original numeric values obtained from the respondent’s response are re-coded following the scoring rules in the NEI VFQ-25 manual. All items were scored so that a high score represents better functioning on a 0 to 100 scale. Items within each sub-scale were averaged together to create the 12 sub-scale scores. Hence, scores represent the average for all items in the sub-scale that the respondent answered. The average score of the following subscales: General vision, Near activities, Distance activities, Color vision and Peripheral vision, constituted the visual function (VF) scores. The average score of the following subscales: Social functioning, Mental health, Role difficulties and Dependency, constituted the quality of life (QOL) scores. Sociodemographic characteristics and ocular parameters were also obtained. Sociodemographic characteristics were evaluated based on age, sex, area of residence, marital status, religion, educational attainment, and monthly income. Each characteristic was stratified into groups or levels. Analysis of variance (ANOVA), including Post-hoc analysis was used to evaluate the association between sociodemographic characteristics and VRQOL parameters.

Results: A total of 270 patients were enrolled. After adjustments for category and causes of visual impairment, older age (p< 0.001), rural dwellers (p<0.001), widowhood (p=0.006), and No formal education (p<0.001) were significantly associated with low mean vision function (VF) scores (Table 1). Similarly, older age (p<0.001), rural dwellers (p<0.001), widowhood (p=0.003), and No formal education (p<0.001), were significantly associated with low mean quality of life (QOL) scores (Table 1). The differences in mean scores of VF and QOL due to religion, sex and monthly income were not statistically significant.

Conclusion: Besides the degree of visual impairment, the interplay of certain social and demographic factors play a remarkable role in determining the quality of life in visually impaired patients. Therefore, an individualized management plan, including psychosocial therapy is imperative in the care of visually impaired patients. Particular attention should be considered in the
management of the following groups: advanced age groups, those of low socioeconomic status, and those with low educational attainment, widows/widowers and rural dwellers, with visual impairment.

References:

Table 1: Association of visual function and quality of life with socio-demographic characteristics of study participants

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Total VF Mean (95% CI)</th>
<th>Test statistics (p-value)</th>
<th>Total QOL Mean (95% CI)</th>
<th>Test statistics (p-value)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age group (years)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;20</td>
<td>74.2 (59.7-88.7)</td>
<td>ANOVA (0.560)</td>
<td>70.9 (53.3-88.4)</td>
<td>ANOVA (0.215)</td>
</tr>
<tr>
<td>20-39</td>
<td>80.2 (75.5-84.9)</td>
<td>ANOVA (&lt;0.001*)</td>
<td>80.2 (75.0-85.4)</td>
<td>ANOVA (&lt;0.001*)</td>
</tr>
<tr>
<td>40-59</td>
<td>76.4 (72.8-80.0)</td>
<td>ANOVA (0.003*)</td>
<td>79.7 (75.6-83.7)</td>
<td>ANOVA (&lt;0.001*)</td>
</tr>
<tr>
<td>60-79</td>
<td>71.3 (67.2-75.5)</td>
<td>ANOVA (0.062)</td>
<td>72.8 (68.1-77.6)</td>
<td>ANOVA (&lt;0.001*)</td>
</tr>
<tr>
<td>&gt;80</td>
<td>54.2 (38.3-70.2)</td>
<td>Reference category</td>
<td>44.0 (27.4-60.7)</td>
<td>Reference category</td>
</tr>
<tr>
<td>Sex</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>73.8 (70.6-77.0)</td>
<td>Reference category</td>
<td>75.9 (72.3-79.4)</td>
<td>Reference category</td>
</tr>
<tr>
<td>Female</td>
<td>76.1 (72.6-79.6)</td>
<td>T-test (0.337)</td>
<td>76.5 (72.5-80.6)</td>
<td>T-test (0.798)</td>
</tr>
<tr>
<td>Residence</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Rural</td>
<td>66.8 (70.6-77.0)</td>
<td>Reference category</td>
<td>64.9 (58.7-71.1)</td>
<td>Reference category</td>
</tr>
<tr>
<td>Urban</td>
<td>77.5 (75.0-80.1)</td>
<td>T-test (&lt;0.001*)</td>
<td>79.7 (76.9-82.5)</td>
<td>T-test (&lt;0.001*)</td>
</tr>
<tr>
<td>Marital status</td>
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<tr>
<td>Single</td>
<td>74.7 (69.1-80.3)</td>
<td>Reference category</td>
<td>73.0 (67.0-79.1)</td>
<td>Reference category</td>
</tr>
<tr>
<td>Married</td>
<td>75.2 (72.6-77.7)</td>
<td>ANOVA (1.000)</td>
<td>77.3 (74.4-80.2)</td>
<td>ANOVA (0.609)</td>
</tr>
<tr>
<td>Widow/widower</td>
<td>13.5 (13.5-13.5)</td>
<td>ANOVA (0.006*)</td>
<td>0 (0.0-0.0)</td>
<td>ANOVA (0.003*)</td>
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<td>Religion</td>
<td></td>
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<tr>
<td>Christianity</td>
<td>74.7 (72.3-77.0)</td>
<td>ANOVA (0.222)</td>
<td>76.0 (73.3-78.7)</td>
<td>ANOVA (0.276)</td>
</tr>
<tr>
<td>Islam</td>
<td>87.6 (75.1-100)</td>
<td>Reference category</td>
<td>89.0 (69.7-108.2)</td>
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</tr>
<tr>
<td>Education</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>51.2 (37.6-64.9)</td>
<td>Reference category</td>
<td>48.5 (33.5-63.5)</td>
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<tr>
<td>Primary</td>
<td>62.7 (55.5-70.0)</td>
<td>ANOVA (0.385)</td>
<td>64.6 (56.8-72.5)</td>
<td>ANOVA (0.101)</td>
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<tr>
<td>Secondary</td>
<td>77.7 (74.2-81.3)</td>
<td>ANOVA (&lt;0.001*)</td>
<td>78.2 (73.9-82.5)</td>
<td>ANOVA (&lt;0.001*)</td>
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<td>Vocational</td>
<td>57.8 (37.1-78.9)</td>
<td>ANOVA (1.000)</td>
<td>55.9 (31.8-9.9)</td>
<td>ANOVA (1.000)</td>
</tr>
<tr>
<td>Tertiary</td>
<td>81.1 (78.3-83.9)</td>
<td>ANOVA (&lt;0.001*)</td>
<td>83.3 (80.2-86.5)</td>
<td>ANOVA (&lt;0.001*)</td>
</tr>
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<td>Socioeconomic status</td>
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<td></td>
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<tr>
<td>High</td>
<td>80.4 (59.7-101.1)</td>
<td>Reference category</td>
<td>85.0 (64.0-106.0)</td>
<td>Reference category</td>
</tr>
<tr>
<td>Middle</td>
<td>77.1 (74.5-79.7)</td>
<td>ANOVA (1.000)</td>
<td>79.0 (76.1-82.0)</td>
<td>ANOVA (1.000)</td>
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<tr>
<td>Low</td>
<td>67.3 (62.0-72.5)</td>
<td>ANOVA (0.501)</td>
<td>66.5 (60.5-72.5)</td>
<td>ANOVA (0.248)</td>
</tr>
</tbody>
</table>

*=Statistically significant
Basal Cell Carcinoma of the Ala Nasi in Anoculo-Cutaneous Albino: A Case Report

Dumebi H. Kayoma and Funmilayo O. Osho

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Introduction: Basal cell carcinoma (BCC) is the most common nonmelanocytic eye lid tumour worldwide.\(^1\) The nose and eyelids are common sites of occurrence of basal cell carcinoma which is a locally invasive skin tumour.\(^1,2\) Among Nigerian albinos, BCC is the second most common skin cancer after squamous cell carcinoma.\(^3,4\) BCC of the nose is important to ophthalmologists because of its local invasiveness and proximity to the eye lid, there is a possibility of spread to the eye lid, orbital soft tissue and orbital bones.\(^1,2\)

Case Report: A 51 year old woman, an albino with seven year history of recurrent ulcer on nose. At onset, a glistening red patch was noticed on left side of nose; it was painless, itchy, gradually increased in size and ulcerated after 2 years. No preceding nose trauma; the ulcer extended to the left naso-labial fold, no discharge from the ulcer, no involvement of eyelid, no swelling or ulcer in any other part of body, no cough, night sweat or weight loss. There was a positive history of prolonged exposure to sunlight in childhood. She had excision of the tumour twice within the preceding two years. The last histology report showed basal cell carcinoma of the left ala nasi. She had a history of poor vision in both eyes, for both distance and near, worse in bright light for which she used hand magnifiers and spectacles.

Examination showed a non-tender firm swelling on left ala- nasi, with no differential warmth and an ulcer 20mm by 20mm with rolled-up edges and hyper pigmented scar on left naso-labial groove, but no lymph node enlargement. Unaided visual acuity was 6/36 bilaterally which improved to 6/24 with spectacles. She had normal adnexa bilaterally, nystagmus, no ophthalmoplegia, iris trans-illumination defects, pink discs, with distinct margins, cup to disc ratio of 0.2 and foveal hypoplasia bilaterally. Orbito- cranial computed tomography scan showed left maxillary sinus collection with no erosion of the maxilla. She was jointly managed by the Plastic surgeons, Maxillo-facial, Otorhinolaryngologists and Ophthalmologists. Initial tumour excision showed that margins were involved and a repeat excision was done with tumour- free margins. She is awaiting nasal reconstruction.

Discussion: BCC is a non- melanocytic epithelial skin cancer that originates from the basal cells of the epidermis. Basal cells produce new cells to replace old lost cells.\(^8\) It is the commonest type of skin cancer and can occur on any part of the body especially the face, head and neck (85%), trunk and limbs are affected in 15% of cases.\(^4,5\) The nose and eyelids are the parts of the body mostly affected\(^2,6\). Major risk factors for developing BCC include prolonged exposure to ultra violet radiation, reduced or absent melanin in skin.\(^1\) BCC is locally invasive; may erode orbital soft tissues and orbital bones. Diagnosis is by tumour excision and histology. Treatment options include surgery, radiotherapy and immunotherapy.\(^2\) There is a high cure rate when diagnosed early and completely excised while recurrence rate is high when tumour excision is incomplete.\(^7\)

Conclusion: Basal cell carcinoma of the nose could cause functional esthetic and psycho-social problems.\(^5\) High index of suspicion is required for early diagnosis, referral and treatment. Declaration of patient consent: Consent was obtained from patient to obtain her information and photograph for publication but with
Introduction: Blepharophimosis ptosis epicanthus syndrome (BPES) is a rare disorder associated with maldevelopment of oculofacial structures.1 It is characterized by shortened horizontal palpebral fissure, ptosis, epicanthus inversus and telecanthus.2,3 It is usually bilateral and may be asymmetrical.6 Other features include ectropion, low nasal bridge, microphthalmos, divergent strabismus and amblyopia. Also, cardiac defects, mild mental retardation and psychological challenge from facial appearance may occur.2,4 In females, premature ovarian failure may be present.1,2,6 BPES is usually inherited in autosomal dominant fashion, but may be sporadic.5,7,8 It is due to mutation of the FOXL2 gene, located in 3q23, causing maldevelopment of eyelids and ovaries.5,9 Different phenotypes, BPES types 1 and 2 occur.1,10 Staged surgery is advocated, usually at age 3-5 years.3

Case Report: Master B.S, a 3 month old male infant, presented with bilateral non-progressive drooping upper lids from birth. There was no tearing, redness or discharge. Ante- and peri-natal histories were normal. Developmental milestones were age appropriate, with no known family history of similar eye features. Review of systems was normal. On examination, he followed light and objects well; head tilt and chin up position were present. He had bilateral ptosis, phimosed lids,

References
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Blepharophimosis Ptosis Epicanthus Syndrome: A Case Report

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Figure 1: Bilateral ptosis, phimosed lids, telecanthus and epicanthus inversus

Figure 2: Immediate Post-operatively. Upper lid lift
epicanthus inversus and telecanthus (Figure 1). Anterior segments and fundi were normal. Refraction was +1.50DS -0.25DCx180 (right) and +1.75DS -0.25DCx180 (left). A diagnosis of Blepharophimosis ptosis epicanthus syndrome with imminent amblyopia was made. He subsequently had bilateral tarso-frontalis suspension with silicone sling. Postoperatively, upper lid lift was satisfactory (Figure 2). Repair of epicanthus and telecanthus were scheduled for 4 years of age. Follow-up at the 4th post-operative month showed good lift with no head tilt (Figure 3).

**Figure 3:** Four month Post-operatively. Lifted lids. Residual telecanthus and epicanthus inversus.

**Discussion:** Clinical features and onset in index patient bear similarity to documented studies. No evidence of mental retardation was obvious in this patient. Refractive status was age-appropriate. Head tilt with marked ptosis suggested visual axis obstruction, a risk for amblyopia. This necessitated early ptosis correction to be followed later by correction of the phimosed lids. Published reports note an adequate balance between benefits of early surgery, avoiding amblyopia, and later surgery (just prior to school age), thus allowing for facial maturation before any intervention. Traditionally, staged surgery is done for BPES. First, a medial canthoplasty to correct blepharophimosis, epicanthus and telecanthus; then tarso frontalis sling 6-12 months later to correct ptosis. However, severe ptosis and imminent amblyopia may warrant ptosis surgery before 3 years, as in this index patient. One stage surgery has been advocated. It consists of lateral canthotomy, medial canthoplasty, transnasal wiring and frontalis sling. Genetic studies are recommended, to identify responsible gene and in addition, to identify premature ovarian failure in susceptible females. This was not available for this patient.

**Conclusion:** Knowledge of the defining features of BPES, adequate assessment and surgical procedures are essential for patient evaluation and rehabilitation.

**References**


Management of Cystic Lid Masses with Sodium Tetradecyl Sulfate (STS) Sclerosant Intra-Lesional Injections: Case Series of Three Patients

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Introduction: A dermoid cyst is a congenital choristoma of the orbit. It consists of keratinized epithelium and adnexal structures such as hair follicles, sweat glands, and sebaceous glands.¹ The mainstay of treatment is surgery but if the cyst ruptures during surgery, a lipogranulomatous inflammatory reaction may occur. This necessitates the use of sclerosants which are less invasive. Here in we report the use of sodium tetradecyl sulfate (STS) in the management of cyst of Moll and dermoid cyst.

Case Series:

Case 1: T.W.
A 60 year old clergy man who presented with bilateral painless and slow growing multiple lid lesions of more than 5 years duration. A diagnosis of bilateral multiple cysts of Moll was made and he had injection of STS into the cysts. The patient was reviewed at 4 weeks and 3 months post injection. Most of the cysts had collapsed.

Case 2: O.S.
A 30 year old male presented with a recurrent swelling in the medial aspect of the right upper lid of more than seven years duration. Examination and orbital ultra sound scan findings were consistent with a dermoid cyst. The cyst was aspirated using a 25 gauge cannula and the sac irrigated with normal saline before injecting STS.

The patient was reviewed after 2 weeks and 3 months post injection. The cyst had regressed.

Case 3: A.A.
A 41 year old female presented with a right medial canthal cystic swelling of more than 2 years duration with features consistent with a cyst of Moll. The cyst was aspirated and STS injected to refill it. The patient was reviewed 2 weeks and 3 months post injection. The cyst had regressed.

Discussion: Indications for treatment of orbital cysts are cosmetic, recurrent inflammation or risk of amblyopia in case of large dermoid cyst. Majority of dermoid cysts are removed because of family’s concern for growing lesions.²⁻³ Also, episodes of recurrent inflammation after direct trauma necessitate excision of these cysts.⁴ If the cyst leaks or ruptures with extrusion of oil and keratin into adjacent tissues, granulomatous inflammation may be present.⁵

The use of sclerosants is aimed at obviating the complications associated with surgery. In these reports, there was remarkable reduction in size of cyst in all patients three months post sclerotherapy. This was similar to the result obtained in another study.⁶

Conclusion: The use of sclerosant in general management of cysts is less technically demanding, cost effective and convenient to patient with good aesthetic outcome compared to surgery.

References
Ocular Complications of Stevens-Johnson Syndrome: Management Challenges Following Cyst Sclerotherapy

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Introduction: Stevens - Johnson syndrome (SVJ) 3 is a type IV hypersensitivity reaction characterized by severe generalized erythematous eruptions of skin and mucous membranes including ocular surface following exposure to antigenic substances. Common ocular complications include corneal conjunctivalization, conjunctival cicatrization, dry eye, symblepharon, trichiasis and ectropion 2,3. Earlier studies reported rare cyst formation 4,5 and successful cyst sclerotherapy 6,7. We report another case of SVJ characterized by unusually large pressure exerting palpebral conjunctival cyst resulting in both functional and cosmetic disturbance with vision-threatening ocular surface burns following 3% Sodium tetradecyl sulphate injection sclerotherapy.

Case Report: A 55-year-old self - employed woman presented with three months gradual painless swelling of the left eyelids, inability to open the eye and eyeball pain due to pressure exerted by eyelid swelling. One-year prior this she developed SVJ with severe generalized skin, oral and ocular mucous membrane eruptions within 24 hours of administration of Septrin* (Co – trimoxazole) and Fansidar* (Sulphadoxine + pyrimethamine) by her physician for pain under the sole of her feet. She wears bifocal glasses, on thrice daily topical tears supplement, allergic to chloroquine and had myomectomy 12 years previously. Examination revealed generalized hypo & hyperpigmented skin lesions, visual acuity 6/6 right eye, 6/24 left eye and with glasses 6/5 and 6/12 respectively. Intraocular pressure was 14mmHg right and 26mmHg left eye. Large left upper lid cyst (thin – walled, hypodense non-septate, non-enhancing, 26mm x 13mm x 13mm on CT scan and multiple left lower lid cysts,

Figure 1: Left upper eyelid cyst (top left), cyst seen through everted eyelids (top and below right). CT scan showing cyst 26 x 13 x 13mm (below left).

Figure 2: Acute inflammation and iatrogenic ankyloblepharon 1st day post-sclerotherapy (top left picture). Leaky sclerosant (top right). 1st week post-sclerotherapy- resolving inflammation (below left). Corneal leucoma 20 weeks post sclerotherapy - (below right)
symblepharon, scanty right trichiasis and bilateral immature cataract. (Figure 1) Treatment was by cyst extirpation with injection of 0.4ml (20% of 2ml aspirate) 3% sodium tetradeyl sulphate (sclerosant).

Sclerotherapy caused sac erosion, acute pain, lid edema, temporary ankyloblepharon, conjunctival hyperemia, inferior corneal erosion and reduced vision. Standard therapy for ocular chemical burns was adopted and co – managed with anterior segment specialist. She had challenging prolonged recurrent inferior corneal epithelial erosions, healing in about 20 weeks with inferior corneal leucoma, pannus, reduced best corrected visual acuity of 6/36. (Figure 2)

Discussion: Ocular surface tissues are typically cicatrized and less resilient following SVJ. Chronic low-grade inflammation occurs even in the presence of a white eye 8. These increase the risk of recurrent corneal de – epithelialization, corneal neovascularization, severe visual impairment and blindness. Earlier studies 4,5 reported the rare occurrence of cyst formation following SVJ. The case in study had cysts of functional and cosmetic impact. Dave, et al 6 reported 6 cases of conjunctival inclusion cyst in 4 anophthalmic sockets and 2 sighted eyes and concluded that cyst aspiration and foam sclerotherapy is safe, with insignificant inflammation and without ocular surface or implant complications. Naik et al 7 also reported that foam sclerotherapy is successful in obliterating periorbital dermoid cysts. On the contrary, our study demonstrated that cyst sclerotherapy following SVJ poses additional vision threatening complications.

Conclusion: Cyst sclerotherapy, though found to be successful in some cystic lesions dictates a call for caution in cases of Stevens - Johnson syndrome. Further studies are also necessary to explore additional risk factors for poor outcome of cyst sclerotherapy in SVJ.

Ethics: Written permission was obtained from the patient.

References


Ocular Superglue Injury

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2National Eye Centre, Kaduna

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Introduction: Eye care and prevention of trauma are crucial to the specialized function of the eye. 2 Cyanoacrylate is the active component of Superglue. 2 It has various uses, from industry to surgery. 3,4 Its widespread availability and re-package style have also increased its presence in homes. 4 Commercially available cyanoacrylate appeared in 1958, and in the 1980s, ophthalmic ointment-style packs such as Do-It-Yourself (DIY) and acrylic nail kits became available. 5 It is however, toxic and use of gloves, glasses and mask are recommended. 6 Scenarios of injury include poorly sighted individuals who mis-identify
prescribed treatment, well sighted persons who
carelessly introduce it into the eyes, children at
unsupervised play and more recently, assault. 5,7
Commercial cyanoacrylate is more toxic than the
formulation used in medicine.10 Chemically,
cyanoacrylate is a monomer formed from
condensation of formaldehyde and cyanoacetate,
forming a solid bond in less than 2 minutes, in dry
conditions.11
Ocular injuries from cyanoacrylate mainly involve
the external eye. Only dry surfaces, e.g. tarsal
margin adhere together.8 On instillation,
spontaneous blinking forces glue onto lid margins
and lashes, with resultant adhesion. There is
stinging or burning pain upon instillation, with loss
of vision and resultant psychological distress.
Eyelid skin excoriation, lash adhesion, lash loss,
conjunctivitis, corneal abrasions with punctate
erosions occur.8,12 There is however, no significant
mechanical, chemical, thermal or toxic injury to
ocular tissue.3 Primary treatment is reversal of
acquired tarsorrhaphy, copious irrigation and use
of wet patch.12 The tarsorrhaphy spontaneously
resolves in about a week. However, amblyopia risk
in children and the distress for even adults may
require early intervention.16 Secondary treatment
includes care of ocular injuries along standard
protocol; with appropriate treatment of corneal
abrasion. Prognosis for visual recovery is
excellent.5
Preventive measures include change in package
style, using distinct colour and bold warning, simple
modifications to opening caps, similar to child-proof
safety mechanisms on toxic products.8,13 These are
aimed against accidental instillation. This case
report demonstrates this peculiar type of injury;
with early surgical intervention and initial
conservative measures producing a satisfactory
visual outcome.
Case Report: Mrs. I.H., a 58-year-old housewife
presented 2 hours after accidental instillation of
Superglue to her left eye with sudden difficulty in
parting her eyelids. Examination showed left
acquired tarsorrhaphy involving the mid 2/3 of
upper and lower lids (Figure 1). The right eye was
normal. She had emergency copious irrigation with
normal saline. Eyelash trimming and overnight
saline gauze padding were done and thereafter,
examination under anesthesia and surgical release
of the adhered lid margins. A 5.0 x 5.0mm
superficial corneal erosion was noted inferiorly.
Topical moxifloxacin, nepafenac and
chloramphenicol were commenced. Visual acuity
on first post-op day was 6/6 in left eye and corneal
erosion healed.
Conclusion: Our patient mis-identified her
medication for superglue; a typical risk situation
for ocular injury.8,14-15 Her early presentation was
typical with characteristic external eye features as
with documented cases.12 Good resolution was
consistent with previous reports.5 Mis-identification
of medication, either by the partially sighted, or in
packaging similar to innocuous domestic products
remains a notable risk factor for Superglue
injury.3,4,8 Prompt identification and treatment of
this injury along standard protocol assures of
complete resolution.

Figure 1: Left acquired tarsorrhaphy

Figure 2: Corneal Epithelial Defect observed
during examination under anesthesia and
surgical release of the adhered lid margins
References

**Introduction:** Orbital exenteration (OE) is a disfiguring surgical eye removal procedure mostly performed for malignant orbital tumors, and involves removal of the eyeball with the orbital soft tissue.\(^1\)\(^2\) However, OE is occasionally performed for non-malignant diseases of the orbit which are refractive to other modalities of treatment, for control of pain, or cosmesis.\(^3\)\(^4\) The aim of this study was to report the demographic profile, clinical presentation, histological diagnoses and changing trends in patients who had OE in a tertiary health facility, southwestern Nigeria.

**Methods:** Retrospective review of the medical records of all patients who had eyelid-sparing orbital exenterations over a 10-year period (October 2008 - September 2018) was done.

**Results:** Sixty-eight orbits of 68 patients (M: F, 1.2:1) were exenterated. Mean age of the patients was 37.8 ± 23.4 years with a peak age in the first decade of life (Table 1). The ocular surface was the most common site of tumor origin in 35 (51.5%) patients, while spread of tumour from within the globe seven (10.3%), paranasal sinus five (7.3%), lacrimal gland four (5.9%), eyelids four (5.9%), and other primary orbital tumours 13 (19.1%) patients accounted for the remaining cases (Table 2). All patients had computed tomography scan done prior to surgery. Sixty (88.2%) patients had OE for malignant tumours with 32 (47.1%) patients having histological diagnosis of invasive squamous cell carcinoma (SCC) from the ocular surface. The right orbit was exenterated in 36 (52.9%) patients and visual acuity was < 3/60 in 63 (92.6%) eyes. Twenty-eight (41.2%) patients tested positive for HIV, 27 (96.4%) of whom had invasive SCC. The

**Table 1:** Age distribution of the 68 patients

<table>
<thead>
<tr>
<th>Age group (years)</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 10</td>
<td>14</td>
<td>20.6</td>
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<tr>
<td>10–19</td>
<td>3</td>
<td>4.4</td>
</tr>
<tr>
<td>20–29</td>
<td>4</td>
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<td>80–89</td>
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<td>7.4</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>68</td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

**Orbital Exenteration in University College Hospital Ibadan: A 10-Year Review**

**Oluyemi Fasina**

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mean age of the 32 patients with invasive SCC was 47.5 years ± 15.2 years, with the mean age (43.4 ± 10.7 years) of the 27 patients who tested positive for HIV being significantly lower (t = 3.226, p = 0.027) than the mean age (69.6 ± 17.6 years) of the five patients who were negative for the viral infection.

The median duration of symptoms before presentation was 13 months (IQR, 15.8 months) and median length of follow-up was 6.5 months (IQR, 12.8 months). Sixty-three (92.6%) patients had direct closure of the orbit with the skin of the eyelids while five (7.4%) patients had primary orbital reconstruction by transposition flap. Post-operatively, three (4.4%) patients developed sino-cutaneous fistula. Of the 26 patients who commenced adjuvant chemotherapy post-operatively, seven patients (four with invasive SCC, three with rhabdomyosarcoma) completed adjuvant post-operative treatment and were alive and tumor free for varying periods (ranging from 6 months to 74 months) post-treatment; while eight patients (six with invasive SCC, two with rhabdomyosarcoma) of the 34 patients that abandoned further treatment post-operatively developed tumor recurrence.

**Conclusion:** Orbital exenteration is still performed in our center and orbital invasion of ocular surface squamous carcinoma is the most common indication for OE. Most of our patients present late with advanced orbital tumors. Adjuvant chemotherapy increases survival of patients with advanced orbital malignancies post-exenteration, and presumably improves their quality of life. Health education and public enlightenment may reduce the burden of cases of OE in our region.

**References**


### Table 2: Types of tumors in the 68 patients

<table>
<thead>
<tr>
<th>Type of tumour</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>OSSN</td>
<td>32</td>
<td>47.1</td>
</tr>
<tr>
<td>Rhabdomyosarcoma</td>
<td>8</td>
<td>11.8</td>
</tr>
<tr>
<td>Retinoblastoma</td>
<td>7</td>
<td>10.3</td>
</tr>
<tr>
<td>Eyelid SCC</td>
<td>4</td>
<td>5.9</td>
</tr>
<tr>
<td>Conjunctival melanoma</td>
<td>3</td>
<td>4.4</td>
</tr>
<tr>
<td>Sino-nasal carcinoma</td>
<td>3</td>
<td>4.4</td>
</tr>
<tr>
<td>NSOID</td>
<td>3</td>
<td>4.4</td>
</tr>
<tr>
<td>Benign lacrimal tumor</td>
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<td>2.9</td>
</tr>
<tr>
<td>Malignant lacrimal tumor</td>
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<td>2.9</td>
</tr>
<tr>
<td>Sino-orbital mucocele</td>
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<td>2.9</td>
</tr>
<tr>
<td>Malignant peripheral nerve sheath tumor</td>
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<td>1.5</td>
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<td>Optic nerve glioma</td>
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<td>1.5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>68</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

OSSN = Ocular Surface Squamous Neoplasia, SCC = Squamous Cell Carcinoma, NSOID = Non-specific Orbital Inflammatory Disease

Rosai Dorfman Disease: A Case Presentation

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**Introduction:** Rosai Dorfman Disease (RDD), also called Sinus histiocytosis with massive lymphadenopathy (SHML) is a rare proliferation of histiocytes, of unknown cause. The term was first used in 1969, by Rosai and Dorfman. It is a massive bilateral adenopathy of head and neck nodes with fever, raised Erythrocyte sedimentation rate (ESR) and hypergammaglobulinaemia, usually in young patients in first 2 decades of life. Extranodal involvement is reported in 10%-40% of patients, with involvement of respiratory tract, genitourinary tract, nasopharynx, paranasal sinuses, gastrointestinal tract, orbit and the eye. The site of occurrence determines the clinical features like nasal obstruction, stridor, proptosis and ptosis. Isolated orbital involvement without
systemic clinical features is uncommon. Patients with ophthalmic manifestations are younger with poorer visual acuities and patients with ocular involvement have multiorgan disease, which is more limited in those with orbital masses. Involvement of the orbit, eyelid and cornea have been reported. Ocular involvement may present as cervical lymphadenopathy with poorly responsive anterior uveitis. Aetiologic theories include immune regulatory disorder and viruses such as Herpes and Epstein-Barr. Association with sickle cell disease is documented and an African Caribbean black predilection has been found. Histology demonstrates phagocytized, intact lymphocytes and erythrocytes, engulfed within intact histiocytes, termed Emperipolesis. Immunohistochemical stains are positive for S-100. RDD may be self-limiting, with spontaneous remission in over 50% of patients, or with a relapsing and remitting pattern. Treatment include observation, excision, systemic steroids, chemotherapy and radiation.

**Case Report:** Master E.N, a 3-year-old boy presented with bilateral, orbital masses since birth. There was no associated history of fever, vomiting, cough, night sweats, epistaxis, dysphagia, bowel anomaly, seizures nor dysphagia. Antenatal, perinatal and immunization histories, developmental milestones and review of systems were all normal. Examination revealed a well-nourished child, not pale, icteric or in respiratory distress; with multiple enlarged, mobile, painless submandibular and inguinal nodes. Unaided visual acuity was 6/36 bilaterally with upper eyelid masses approximately 35mm x40mm right eye and 40mm x50mm left eye and mechanical ptosis. Masses were firm, mobile, with overlying skin warmth and hyperpigmentation. Anterior and posterior segments were normal. There was 4cm hepatosplenomegaly. Investigations revealed: packed cell volume- 28.8%, white cell count- 6.4x10^3/uL, platelet count- 386x10^3/uL, ESR- 55/hr (Westergren), normal electrolytes, urea and creatinine.

He had uneventful excision biopsy bilaterally. Visual acuities on first post-operatively were 6/18. Histology showed diffuse sheets of proliferating histiocytes, lymphoplasmacytic cells, oval to polymorphic histiocytes, mild atypia. The cells had abundant pale and foamy cytoplasm with numerous engulfed lymphocytes, with some nucleated giant cells, with a diagnosis of Extranodal Rosai Dorfman disease. Treatment plan had included a multidisciplinary input for systemic steroids/immunomodulation. The patient was, however, lost to follow up after excision.

**Conclusion:** The finding of phagocytized intact lymphocytes engulfed within intact histiocytes, termed Emperipolesis, in our patient is, highly characteristic and almost pathognomonic of Rosai Dorfman disease. The patient’s cervical lymphadenopathy, mild anaemia, elevated ESR and histology findings also support the diagnosis. Based on the clinical picture, the differential diagnoses considered include Langerhans cell histiocytosis, reactive lymphoid hyperplasia and lymphoma.
Massive cervical adenopathy with orbital mass in this patient is consistent with reported cases.\textsuperscript{3,4} The raised ESR is also consistent with findings. The patient’s young age of onset of disease is associated with ophthalmic/orbital manifestations.\textsuperscript{10} Histological findings correlate with documented reports. Loss to follow up after excision precluded other prescribed treatment modalities. Adequate recognition of this entity, appropriate diagnostic armamentarium with institution of appropriate treatment regimen are required for management.

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Masquerading Orbital Abscess: A Case Report

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Introduction: Any purulent collection in the orbit is known as an orbital abscess.\textsuperscript{1,2} It typically follows an infection of the orbital soft tissues (orbital cellulitis). Classic clinical findings include fever, erythema, proptosis, chemosis, ptosis, restriction of and pain with ocular movement, reduced visual...
acuity and an afferent pupillary defect.\textsuperscript{1-4} Orbital cellulitis/abscess is the most common cause of acute-onset proptosis in children.\textsuperscript{3,4} The differential diagnoses of orbital cellulitis include orbital trauma, for which there may not be a reliable history in children; nonspecific orbital inflammation; benign orbital tumors such as lymphatic malformation and hemangioma; as well as malignant tumors such as rhabdomyosarcoma, leukemia, and metastases.\textsuperscript{1} Rhabdomyosarcoma is the most common primary orbital malignancy in children.\textsuperscript{1,5,7,8} This makes it a particularly important differential of orbital cellulitis in addition to its classic presenting picture of sudden onset, rapidly progressive unilateral proptosis. It is associated with marked ocular adnexal inflammatory response in 60\% of cases, thereby closely imitating orbital cellulitis.\textsuperscript{5-7}

Herein, we report a case of orbital cellulitis with abscess that mimicked rhabdomyosarcoma in an eleven-year old boy with rapid-onset unilateral proptosis.

**Case Report:** An eleven-year-old boy presented to the eye clinic triage of the University of Calabar Teaching Hospital with a 2-week history of painless, rapid-onset nonaxial proptosis in the left eye. There was no preceding or associated history of fever, trauma, upper respiratory tract infection, sinusitis or immunosuppression. Examination revealed a non tender mass occupying the inferior orbit associated with mild periorbital edema and conjunctival hyperaemia. A clinical diagnosis of rhabdomyosarcoma was made. He was admitted for joint management by the paediatric ophthalmology and oculoplastic teams. Baseline investigations (Full Blood Count with differentials (FBC), Liver Function Test, Serum Electrolytes/Urea/Creatinine) and Computerised Tomography (CT) of the head and orbit were requested. During review the next day, history was unchanged, however, on palpation, the mass inadvertently ruptured releasing about 4mls of green, non-foul smelling pus (Figure 1). This was sent for microscopy/culture/sensitivity and grew Staphylococcus aureus. FBC showed mild neutrophilia but radiologic imaging was not performed due to financial constraints. A definitive diagnosis of orbital cellulitis with abscess was made, broad-spectrum antibiotics and subsequent adjunct anti-inflammatory therapy yielded excellent clinical resolution.

**Discussion:** In our patient, the subacute course of the illness, the absence of the typical periocular and systemic features seen with orbital cellulitis especially fever and the lack of radiologic imaging resulted in an initial misdiagnosis. It is therefore pertinent that the clinician should always be aware of the low reliability of the common clinical features of orbital disease (proptosis/dystopia; swelling or discoloration of the eyelid; palpable subcutaneous mass) in making definitive diagnoses.\textsuperscript{1}

Green pus is usually associated with *Pseudomonas aeruginosa* infections and occurs as a result of the cytotoxic pigment pyocyanin which the organism produces. It has however, been documented that green tinged pus is also produced in infections in which large amounts of myeloperoxidase (MPO), an intensely green antibacterial protein, with microbicidal action against *S aureus*, is produced by inflammatory cells.\textsuperscript{9,10}

In conclusion, although the diagnosis of orbital cellulitis is clinical, laboratory tests, orbital imaging and biopsy may be required to confirm the presence of abscesses, tumors and even to exclude masquerade syndromes.\textsuperscript{2}

**References**


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**Figure 1:** Clinical photograph showing draining of greenish pus from left anterior orbit
Bacterial and Fungal Keratitis Isolates and their Antimicrobial Sensitivity Pattern in a Tertiary Hospital, Northcentral Nigeria

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²Department of Microbiology and Parasitology, University of Ilorin Teaching Hospital, Ilorin, Nigeria.
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Purpose: To determine the bacterial and fungal pathogens causing keratitis and their drug sensitivity pattern amongst patients that presented to eye clinic University of Ilorin Teaching Hospital (UITH)

Methods: Patients with clinical features of infective keratitis that presented to the Ophthalmology Department of University of Ilorin Teaching Hospital, U.I.T.H from January to December 2012 were studied. Information on sociodemographic characteristics and clinical features of keratitis were obtained by the use of questionnaire. Corneal ulcer scraping was obtained from the leading edge and base of the ulcer using bevel end of a sterile size 24 guage needle 5 minutes after instillation of two drops of 2% tetracaine into lower fornix. The specimens were processed for direct gram stain and KOH mount. Specimen sample was inoculated on blood agar, chocolate agar, MacConkey agar and Sabouraud’s dextrose (SDA) agar. Inoculated culture plates were inspected daily for 24 to 48 hours for the bacterial culture media and for up to three weeks for the fungal culture medium. Organism growth was identified by standard procedure. The data obtained were analyzed with IBM-SPSS version 20

Results: Fifty-five eyes of 54 patients were studied. There were 32 (59.3%) males. The mean age was 36.9 years (± 12.1), and age range was 6 months to 80 years. Corneal scraping culture was positive in 37 (67.3%) cases out of which 22 (40.0%) were bacterial and 15 (27.3%) fungal while remaining 18 (32.7%) were negative.

Bacterial isolates included Staphylococcus aureus, 16 (72.7%), and Streptococcus species, six (27.3%). Among the fungal isolates, Candida species, (yeast)was the commonest isolated, 11 (73.3%). Other filamentous fungal isolates included Trichophyton species, 3 (20.0%) and Microsporum audini in one (6.7%) patient. See Table 1. All bacterial isolates were sensitive to ofloxacin 5µg, ciprofloxacin 5µg and all Candida species were sensitive to ketoconazole 5µg and fluconazole 5 µg while the filamentous fungal isolates were sensitive to miconazole 5µg (Table 2).

<table>
<thead>
<tr>
<th>Table 1: Clinical feature of the participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clinical features</td>
</tr>
<tr>
<td>Age group (years)</td>
</tr>
<tr>
<td>males</td>
</tr>
<tr>
<td>&lt;1 year</td>
</tr>
<tr>
<td>1-20</td>
</tr>
<tr>
<td>21-40</td>
</tr>
<tr>
<td>41-60</td>
</tr>
<tr>
<td>61-80</td>
</tr>
<tr>
<td>Total</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Culture isolates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bacterial isolates (n=22)</td>
</tr>
<tr>
<td>Staphylococcus aureus</td>
</tr>
<tr>
<td>Streptococcus spp</td>
</tr>
<tr>
<td>Fungal isolates (n=15)</td>
</tr>
<tr>
<td>Yeast</td>
</tr>
<tr>
<td>Trichophyton mentagrophyte</td>
</tr>
<tr>
<td>Trichophyton rubrum</td>
</tr>
<tr>
<td>Microsporum audini</td>
</tr>
</tbody>
</table>
Discussion: A changing pattern in microorganism culture from corneal scraps has been demonstrated in the literature.¹–⁶ The most commonly isolated bacterial organism in this study was *Staphylococcus aureus* accounting for 72.7%. This finding is similar to the report by Dereck⁷ et al., and Ashaye⁸ but contrary to report by Leck⁹. The predominant fungi agents in this study were yeast constituting 73.3%. This finding, which is different from findings by Sirinivasn¹⁰ and Leck⁹, may be due to differences in the occupation and age of the patients. All the isolated bacterial were sensitive to fluoroquinolones and some to gentamicin. This is similar to the findings of Park¹¹, Hyndiuk¹² but different from that of Frederic¹³. Isolated *Candida spp* were sensitive to imidazoles and nystatin this is contrary to the findings of the study by Therese¹⁴ where amphotericin B was the effective antifungal agents. Isolated *trichophyton ssp* were sensitive to miconazole, clotrimazole and nystatin which is similar to findings of Wong.¹⁵

Conclusion: Routine laboratory microbiological examination of patients’ corneal ulcer scraping specimen is necessary in order to isolate, analyze and compare the changing trends of the etiology and antimicrobial susceptibility patterns. This study identified the commonest bacterial and fungal organisms causing keratitis in the studied area which will help in development of keratitis treatment protocol.

References

6. Onabolu OO, Corneal Ulceration in the eye clinic, Ahmadu Bello University Hospital, Zaria. 1986 (Dissertation for the Award of Fellowship by National Postgraduation Medical College of Nigeria)

### Table 2: Antimicrobial sensitivity of the isolates

<table>
<thead>
<tr>
<th></th>
<th>% Sensitivity to antibiotic</th>
<th>Frequency %</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CP(5µg) OF (5µg) ET(5µg) AG (5µg) GT (5µg)</td>
<td></td>
</tr>
<tr>
<td><strong>Bacterial isolates (n=22)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Staph aureus</td>
<td>13(100)</td>
<td>6(37.5)</td>
</tr>
<tr>
<td>Strept. Spp</td>
<td>6(100)</td>
<td>2(40)</td>
</tr>
<tr>
<td><strong>Fungal isolates (n=15)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Candida spp</td>
<td>11(100)</td>
<td>6(54.5)</td>
</tr>
<tr>
<td>Trichophyton mentagrophyte</td>
<td>1(50)</td>
<td>1(50)</td>
</tr>
<tr>
<td>Trichophyton rubrum</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Microspoidiumaudini</td>
<td>1(100)</td>
<td>1(100)</td>
</tr>
</tbody>
</table>

**Key:** CP-ciprofloxacin, OF-ofloxacin, ET-erythromycin, AG-augumentin, GT-gentamicin, FZ-fluconazole, KZ-ketoconazole, CZ-clotrimazole, MZ-miconazole, NT-nystatin, AM-amphotericin B


14. Therese KL, Bagyalashun R, MadhavanHN, Deepa PP. Invitro-susceptibilty testing by agar dilution methods to determine the minimum inhibitory concentration of Amphoterycin B, Fluconazole, ketoconazole against ocular fungal isolates. Indian J Medical Microbiolgy 2006; 24: 273-279

Assessment of Resources for Primary Eye Care Delivery in a Rural Area, South East Nigeria

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Corresponding author: Eze C. C., Email: emmy_queen2002@yahoo.com; Tel: +2348039584960

Introduction: The World Health Organisation (WHO) estimates that 285 million people are visually impaired, out of which 39 million are blind\textsuperscript{3}. About 80% of blindness is avoidable, \textsuperscript{2} and 90% of visually impaired people live in low and middle-income countries (LMICs)\textsuperscript{4}. The availability and distribution of human and material resources for eye-care have a direct bearing on the quality of eye-care delivery, its uptake and impact on blindness prevention.\textsuperscript{4} Periodic assessment of the availability and distribution of Primary Eye Care (PEC) resources is therefore needed to create, and sustain the delivery of efficient and effective eye care services.

Methods: This was a cross-sectional descriptive study in Nkanu-West Local Government Area (LGA) in Enugu State. The selection procedure was a multi-stage random sampling technique. The study was conducted between February 2\textsuperscript{nd} and April 30\textsuperscript{th} 2015. Study design was adapted from a previous study in Enugu.\textsuperscript{5} At each health facility, data on the material and human resources were collected. The questionnaire had sub-sections on participants’ socio-demographics and job characteristics, previous training in eye care, available eye care services and participants’ attendance of trainings, updates, conferences. This were compared to the WHO vision 2020 benchmark.

Results: There were 119 primary health care workers (PHCW) in the LGA (Junior Community health extension worker, Community health extension workers, Community health officer). The participants comprised 98 females (96.1%) and 4 males (3.9%). The distribution of Population: PHCW ratios are shown in Table 1. The differences in Population to PHCW ratios were not statistically significant. Many of the workers (63.7%) had no training in eye care, while the majority (52.9%) does not attend update courses. The LGA had 18 Primary Health Care (PHC) facilities. The health facilities to population ratio are shown in Table 1.  None of the 18 Primary health care (PHC) facilities stocked all the basic drugs for eye care. Basic equipment for eye care delivery was inadequate in all the facilities (Table 2).

Table 1: Distribution of health facilities: population ratio of the health districts

<table>
<thead>
<tr>
<th>Health District</th>
<th>Health Facilities</th>
<th>Primary Health Care Workers</th>
<th>Population of District</th>
<th>Population: Facility Ratio</th>
<th>Population: PHCW Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Akpugo</td>
<td>5</td>
<td>31</td>
<td>95148</td>
<td>1:19029</td>
<td>1:3069</td>
</tr>
<tr>
<td>Agbani</td>
<td>6</td>
<td>26</td>
<td>55745</td>
<td>1:9290</td>
<td>1:2144</td>
</tr>
<tr>
<td>Akwunanaw</td>
<td>4</td>
<td>22</td>
<td>52246</td>
<td>1:13062</td>
<td>1:2374</td>
</tr>
<tr>
<td>Central</td>
<td>3</td>
<td>23</td>
<td>44246</td>
<td>1:14749</td>
<td>1:1924</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>18</strong></td>
<td><strong>102</strong></td>
<td><strong>247385</strong></td>
<td><strong>1:13743.6</strong></td>
<td><strong>1:2079</strong></td>
</tr>
</tbody>
</table>
Discussion: The numbers of health facilities were adequate to provide PEC needs in the LGA. The adequacy of the health facilities was similar with a related study in Western Nigeria. The available numbers of PHC workers in the study LGA were adequate compared to recommended WHO ratio of 1:10000. However, this numerical adequacy might not translate to provision of adequate eye care services, as PHC workers may lack appropriate eye care skills. There were inadequate material resources available for eye care in all the PHC facilities. The non-availability of basic drugs for eye care has adverse implications for effective primary eye care delivery. Consumables and materials for eye care were available in a few of the centres. This is similar with findings from another study. One limitation of the study was that the assessment of the skills of the PHCWs was not done.

Conclusion: The health facilities in the LGA were adequate. There were adequate and appropriate distributions of PHCW. The available material resources were inadequate.

References


Table 2: Types of basic materials available in the facilities for eye care

<table>
<thead>
<tr>
<th>Equipment Available</th>
<th>Availiability in facilities N=18 (%)</th>
<th>WHO (recommended basic)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Records kept for patients</td>
<td>15 (83.3)</td>
<td>Snellen E chart</td>
</tr>
<tr>
<td>Proper referral forms</td>
<td>15 (83.3)</td>
<td>Torch and batteries</td>
</tr>
<tr>
<td>Torch and batteries</td>
<td>10 (55.6)</td>
<td>Hand magnifying lens</td>
</tr>
<tr>
<td>Tray with lid</td>
<td>7 (38.9)</td>
<td>Epilation Forceps</td>
</tr>
<tr>
<td>*Consumables</td>
<td>7 (38.9)</td>
<td>Dressing eye pads</td>
</tr>
<tr>
<td><strong>Eye health promotion materials</strong></td>
<td>7 (38.9)</td>
<td>Bandages</td>
</tr>
<tr>
<td>Visual acuity charts</td>
<td>6 (33.3)</td>
<td>Eye Shields</td>
</tr>
<tr>
<td>Eye shield</td>
<td></td>
<td>tetracycline ointment</td>
</tr>
<tr>
<td>Epilation forceps</td>
<td></td>
<td>chloramphenicol eye drops</td>
</tr>
<tr>
<td>Basic drugs</td>
<td></td>
<td>zinc sulphate</td>
</tr>
<tr>
<td>Ointment Chloramphenicol</td>
<td>13 (72.2)</td>
<td>silver nitrate</td>
</tr>
<tr>
<td>Vitamin A capsule</td>
<td>18 (100)</td>
<td></td>
</tr>
<tr>
<td>Zinc sulphate</td>
<td>12 (66.7)</td>
<td></td>
</tr>
<tr>
<td>Gutt Gentamycin</td>
<td>11 (61.1)</td>
<td></td>
</tr>
<tr>
<td>Gutt Chloramphenicol</td>
<td>6 (33.3)</td>
<td></td>
</tr>
<tr>
<td>Silver nitrate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Measles immunization</td>
<td>18 (100)</td>
<td></td>
</tr>
</tbody>
</table>
Evaluation of Cataract Surgical Coverage and Barriers to Uptake of Cataract Surgery in Birnin Gwari Local Government Area of Kaduna State

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Introduction: Age- related cataract is the commonest form of blindness in persons aged 50 years and above.¹ In Nigeria, the prevalence of cataract blindness is 1.8%, it is the leading cause of blindness accounting for 45.3%.² Developing countries have a higher age- adjusted prevalence of cataract and it occurs earlier.³ The study area, a rural area in the Northwest Zone (NWZ) of Nigeria, has a high prevalence of blindness of 4.8 % in persons aged 40 years and above.² Currently, surgery is the definitive treatment of blindness from cataract, as no other method has been shown to be effective.⁴

All people should enjoy access to the best quality health care without risk of impoverishment. This aspect is key to the Global Action Plan. u BirninGwari has benefited in the past from free eye camps sponsored by a non-governmental organization (NGO) and these services stopped since withdrawal of the NGO support. It is important to determine how much the cataract surgical needs have been met and what barriers may have hindered accessing these services and proffer suggestions in view of improving the Cataract Surgical Coverage (CSC). This survey aims to evaluate the cataract surgical coverage (CSC) and barriers to uptake of cataract surgery among people ≥50 years of age in BirninGwari local government area (L.G.A). The result of the survey will serve as baseline data for effective planning of services in the L.G.A.

Methods: A cross-sectional sample of subjects aged 50 years and older was selected in the study area by a two stage random sampling technique within a study population of 18,376. The sample size calculation, number of clusters, and selection of the clusters were determined using the RAAB software. In the second stage, a total of 1550 persons in 31 clusters of 50 each were enumerated in a door to door survey using the Compact Segment Sampling method. Presenting visual acuity (VA), VA with pin hole and lens examination were assessed on all subjects. Further ocular examination was limited to subjects with VA less than 6/18 with a view to determine the causes of visual impairment in these individuals. Data on Demographic information, VA, lens examination, main causes of Presenting VA less than 6/18, and details about cataract operation were collected using RAAB questionnaire. Interviews were held to identify barriers to uptake of cataract surgical services. Data analysis was done using the RAAB software package.

Results: A total of 1278 subjects were examined out of 1550 eligible subjects. Cataract was identified as the major cause (43.1%) of blindness. Glaucoma was the second commonest cause of blindness (16.9%). Other principal causes of blindness included corneal scars (13.8%), posterior segment disease/CNS (7.7%), Trachoma (6.2%), and surgical complications (6.2%). The CSC at VA <3/60 was 24.1% and 41.6% for eyes and person, respectively (Table 1). Cataract surgical outcome was good in 59.3% of subjects with available correction. The greatest barrier to uptake of cataract surgery (Figure 1) was inability to afford the cost of cataract surgery (56%).

Conclusion: The CSC is low in BirninGwari L.G.A. Most of the subjects cited ‘cost’ as the major barrier and among those that had cataract surgeries, most were performed during eye camps. Since affordability is a major barrier, there is a need of reducing the cost of surgery in the local hospital,
Prevalence and Magnitude of Presbyopia in Chikun LGA, Kaduna, Nigeria

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²Cataract and Glaucoma Department, National Eye Centre, Kaduna, Nigeria
³Vitreoretinal Department, National Eye Centre, Kaduna, Nigeria
⁴Department of Ophthalmology Abubakar Tafawa Balewa University Teaching Hospital, Bauchi, Bauchi State, Nigeria
⁵General Ophthalmology Department, National Eye Centre, Kaduna, Nigeria
⁶Department of Mathematical Sciences, Kaduna State University, Kaduna, Nigeria
⁷Department of Ophthalmological Surgery, Bingham University, New Karu, Nassarawa State, and Rachel Eye Centre, Abuja, Nigeria

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Background: Presbyopia is a universal age-related condition due to progressive loss of accommodation, sclerosis of fibres and capsule of the crystalline lens.¹ The World Health Organisation(WHO)2010 vision loss expert group

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Table 1. Cataract Surgical coverage (eyes)

<table>
<thead>
<tr>
<th>Category</th>
<th>Condition</th>
<th>VA &lt; 3/60</th>
<th>VA&lt;6/60</th>
<th>VA &lt; 6/18</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>male</td>
<td>female</td>
<td>total</td>
</tr>
<tr>
<td>b</td>
<td>No. of operable cataract eyes</td>
<td>54</td>
<td>72</td>
<td>126</td>
</tr>
<tr>
<td>a</td>
<td>No. of (pseudo) Aphakia</td>
<td>22</td>
<td>18</td>
<td>40</td>
</tr>
<tr>
<td>CSC (eyes)/%</td>
<td>a X 100a+b</td>
<td>28.9</td>
<td>20.0</td>
<td>24.1</td>
</tr>
</tbody>
</table>

---

Figure 1: Barriers to cataract surgery in blind subjects

as well as, recruitment and training of more human resource, in order to increase the CSC.

References
4. Asbell PA, Dualan I, Mindel J, Brocks D, Ahmad M, Epstein S. Age-related Cataract. Lancet 2005; 365 (9459); 599-609
reported that 1.09 billion and 666.7 million people aged 35 years and above, and 50 years respectively, suffer from uncorrected presbyopia.\textsuperscript{2,3} Previously, the magnitude of uncorrected refractive error (URE) was underestimated partly because it was considered less of a problem compared with distance vision impairment, especially in low-income countries. The aim of this study was to determine the prevalence and magnitude of presbyopia in Chikun LGA of Kaduna State.

**Materials and Methods:** A population-based quantitative cross-sectional study was conducted from November 2017 to March 2018 at Chikun LGA, Kaduna State, Nigeria. The study involved 1,047 persons aged 35 years and above who were examined in 63 clusters using multistage random sampling with probability proportional to size. All participants had distance and near visual acuity assessment, anterior and posterior segment examinations as well as near refraction. Any participant who could not read N8 at 40cm was adjudged presbyopic. Data was collected in a standard questionnaire and analysed using IBM-SPSS version 20. Data was summarized using frequency and contingency tables, with confidence interval and P-values significant at the P< 0.05 level using chi-square ($X^2$) test.

**Results:** There was a 96.6\% response rate (1047 out of enumerated 1084 were examined). The mean age of participants was 48.2 years ± 8.194 SD (age range of 35 – 87 years). The number of females examined was significantly higher than males ($p=0.041$). The prevalence of presbyopia was 85.6\% (95\% Confidence Interval: 85.5\% - 85.7\%) which translates to a magnitude of 81,638 individuals aged 35 years and above with presbyopia in Chikun LGA. The prevalence of presbyopia increased with age. There is a significantly higher prevalence of presbyopia in females ($P = 0.041$) and respondents with higher literacy levels (0.004).

**Discussion:** The mean age of participants was 48.2 years which was slightly lower than reports of previous population-based studies in Northern Nigeria which reported 52.5 and 53.59 years respectively.\textsuperscript{4,5} However, it is similar to the value obtained in Nike, Enugu (49 years).\textsuperscript{6} The most likely reason is the lower limit of the age of respondents (35 years) in this study and that of Enugu, as against 40 years used by in the Northern Nigerian studies.

The number of female participants was higher than male counterparts ($P=0.041$). This is similar to the finding in Ogun State.\textsuperscript{7} It is, however, different from the report from Zamfara (30.4\%) where socio-cultural practices were adduced to affect the response rate of female participants.\textsuperscript{5} A prevalence of 85.6\% (95\% Confidence Interval: 85.5\% - 85.7\%) was found among adults aged 35 years and above with a projected magnitude of 81,638 individuals affected in the target population. This accounts for 17\% of the total population. The prevalence is similar to the study by Idowu et al\textsuperscript{7} in Ogun State (81.3\%) and another study in Nairobi, Kenya with prevalence of 87.8\%.\textsuperscript{8} However, lower prevalence figures of 53.4\% (in
Proceedings of 2019 OSN Conference: COMMUNITY OPHTHALMOLOGY

Prevalence of Presbyopia in Chikun LGA of Kaduna State, Nigeria

Gwawalada), 30.4% (in Zamfara), and 64.1% (in Nike, Enugu) were previously reported by some population based studies in Nigeria. It is noteworthy that the populations with lower prevalence were rural populations unlike the populations in Ogun State, and Nairobi, Kenya which were urban populations like the index study and reported similar prevalence.

Conclusion: There was a high prevalence and magnitude of presbyopia in Chikun LGA which was associated with age, female gender and literacy level.

References
8. Mukuria M. The magnitude and pattern of presbyopia among patients seen on outreach with Lions Sight First Eye Hospital, Loresho. 2009 - A dissertation submitted in part fulfilment for the degree in masters of medicine (Ophthalmology), University of Nairobi

Prevalence of Cataract in Adults in a Rural Community in South-Eastern Nigeria

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Guinness Eye Centre, Onitsha, Nigeria

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Introduction: Cataract is of public health importance worldwide as it remains the leading cause of blindness and visual impairment globally. In Nigeria, reports from the national survey showed that cataract accounted for 43% of blindness and 45.3% of severe visual impairment. The prevalence of cataract in the Nigeria national survey was 19.8% in persons 40 years and above. The magnitude of cataract varies from zone to zone and even within the same zone, some areas may be more affected. Cataract is associated with socio-economic problems leading to degradation of quality of life. This study was embarked upon 11 years after the Nigerian national survey to determine the prevalence of cataract in Ukpor, a rural community in Nnewi-South Local Government Area of Anambra state, Nigeria.

Methods: A descriptive, cross-sectional, community-based study of normal residents age ≥50 years in Ukpor. Participants were selected using a multistage cluster random sampling with probability proportional to size of the selected villages. Ocular examination included visual acuity measurement, anterior and posterior segments examination. The lens was examined and graded using the Mehra and Minassian lens grading system. Data collected was analyzed using the IBM Statistical Package for Social Sciences version 23.

Operational Definitions
1. Cataract: Presence of any opacity in the crystalline lens of the human eye. This includes grades 1, 2A, 2B, and 3 of the Mehra and Minassian lens grading system.
2. Cataract blindness: Presenting vision of less than 3/60 which is caused by cataract.

Results: Six hundred and thirty-six participants comprising 249 (39.2%) males and 387 (60.8%)
females were studied. They were mostly traders (39%) and farmers (32%). Table 1 shows the presenting visual acuity of all participants. Forty-seven (7.4%) participants wore spectacles for distant vision.

**Prevalence of cataract**

Out of the 636 participants examined, 395 (62.1%) had cataract in at least one eye; 159 (40.3%) of whom were males, while 236 (59.7%) were females; 107 (27.1%) were unilateral, while 288 (72.9%) were bilateral. The prevalence of cataract was 62.1% (95% CI: 58.3 – 65.9%). The prevalence of cataract increased significantly with age, from 50.8% in persons below 70 years of age, to 90.6% at 70 years and above (P < 0.001).

The prevalence of cataract was higher in males (63.9%) than in the females (61.0%), but the difference was not statistically significant (P=0.466). The prevalence of bilateral cataract blindness was 2.2%. Table 2 shows a comparison

<table>
<thead>
<tr>
<th>Visual Impairment (VI) category*</th>
<th>Visual acuity (Snellen)</th>
<th>No</th>
<th>% (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mild or No VI</td>
<td>6/6 - 6/18</td>
<td>254</td>
<td>39.9 (36.1 - 43.7)</td>
</tr>
<tr>
<td>Moderate VI</td>
<td>&lt; 6/18 - &gt;6/60</td>
<td>319</td>
<td>50.2 (46.3 - 54.1)</td>
</tr>
<tr>
<td>Severe VI</td>
<td>&lt;6/60 - &gt;3/60</td>
<td>37</td>
<td>5.8 (4.0 - 7.6)</td>
</tr>
<tr>
<td>Blindness</td>
<td>&lt;3/60 – LP</td>
<td>26</td>
<td>4.1 (2.6 – 5.6)</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>636</td>
<td></td>
</tr>
</tbody>
</table>

* Categorization based on the 10th revision of the International classification of diseases (ICD-10)

<table>
<thead>
<tr>
<th>Age (Years)</th>
<th>Total Examined (%)</th>
<th>Unoperated cataract (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>50-59</td>
<td>310 (48.7)</td>
<td>114 (17.9)</td>
</tr>
<tr>
<td>60-69</td>
<td>145 (22.8)</td>
<td>117 (18.4)</td>
</tr>
<tr>
<td>70-79</td>
<td>143 (22.5)</td>
<td>134 (21.1)</td>
</tr>
<tr>
<td>≥80</td>
<td>38 (6.0)</td>
<td>30 (4.7)</td>
</tr>
<tr>
<td>Total</td>
<td>636 (100.0)</td>
<td>395 (62.1)</td>
</tr>
</tbody>
</table>
of the age distribution of the participants with cataract in relation to all the participants.

**Conclusion:** The prevalence of cataract in this population was 62.1%. Direct comparison with other studies is difficult due to the variations in the methods of cataract assessment and grading; the differences in the age group and number of participants studied; the lack of universally acceptable definition of cataract for epidemiologic studies, and the use of different cut-off points for lens opacity grading, even amongst studies that used the same cataract classification system. The burden of cataract and cataract blindness is still high within the rural communities of Anambra State. Efforts such as awareness creation and incorporation of eye health training into the training of Primary Health Care workers will help in reducing the burden of cataract in rural areas.

**References**


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