

Indications, output and types of eyelid surgeries in a tertiary eye care facility in Northern Nigeria: A review

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Abstract

Background: The eyelid forms part of the anatomical structures that protect the eye. Eyelid surgeries can test the ingenuity of every surgeon who should not only address the obvious tissue deficit but must also restore the structure, function and cosmesis as much as is possible. We reviewed the indications, output and types of eyelid surgeries over a seven year period.

Method: The minor and major surgical log books of the eye theatre were retrospectively reviewed to obtain information on all patients who had eyelid surgery within the study period. Patients' relevant biodata, preoperative diagnosis, date of surgery and type of surgery were obtained. The total number of minor ophthalmic surgeries within the study period was also computed.

Results: 616 minor ophthalmic surgeries were performed. Eyelid surgeries were performed on 237 eyes of 221 persons, 121(54.8%) were males. Mean age was 30.3 ± 17.8 years. Eyelid

lacerations, chalazia, and eyelid tumours accounted for 30%, 25.8%, 21% of all morbidities respectively. 249 eyelid surgeries were performed, 246 (98.8%) as minor procedures and 3(1.2%) as major procedures. Eyelid surgeries accounted for 39.9% of all minor ophthalmic surgeries. The main surgical procedures were eyelid repair, incision and curettage of chalazia and excision biopsies accounting for 29.7%, 26.1% and 21.7% of procedures respectively. These three accounted for an annual average of 74.9% of eyelid surgeries ($p < 0.001$).

Conclusion: Eyelid surgeries are fairly common. General ophthalmologists should be skilled in eyelid repairs. Our findings are of relevance to the emerging orbito-oculoplastics subspecialty in Nigeria.

Keywords: Eyelid, surgery, trauma.

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Introduction

The ocular adnexa comprise the eyelid/lashes, the nasolacrimal drainage system and the conjunctiva. It forms part of the anatomical structures that protect the eye. Of immense importance to normal eyelid function is good apposition to the globe, normal eyelid movement and normal production and drainage of tear (lacrimal flow).¹ Diseases that interfere with the anatomical integrity and physiological function of the eyelid could result to chronic irritation, tearing, reddening and loss of the eyelid's protective function which could eventually threaten vision because the integrity of the ocular surface is highly dependent on the ocular adnexa.² The sequelae of eyelid morbidities and trauma can be devastating for visual function as well as the aesthetics of the patient.¹ It is usually accompanied with cosmetically unacceptable appearances which could adversely affect the patient's

psychosocial and economic status leading to a reduced quality of life.

Diseases of the eyelid constituted 42.8% of cases seen in an oculoplastic unit of a tertiary eye care facility in south western Nigeria.³ A hospital-based study in south eastern Nigeria revealed that 28.9% of all minor ophthalmic surgeries were attributed to eyelid morbidities (lid deformities and chalazia).⁴ A similar study conducted in the south south geopolitical zone of Nigeria showed that eyelid surgeries accounted for 9.5% of all ophthalmic surgeries in the center.⁵ The major indications for eyelid surgery in literature include neoplasms and trauma that involve the eyelid and periorbital area and a variety of congenital and acquired blepharocanthal abnormalities that require reconstructive techniques that vary in complexity and severity.^{1,6-15} An in-depth knowledge of the surgical anatomy of the eyelid and eyebrow aesthetic unit is thus very essential for the successful performance of eyelid surgeries which can test the ingenuity of every surgeon who should not only address the obvious tissue deficit but must also restore the structure, function and cosmesis as much as is possible. With the current emphasis on generating evidence for eye care, it is imperative that the indications, output, outcome and pattern of ophthalmic surgical interventions be periodically assessed as

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information obtained from such studies will reveal areas of performance and service delivery that require improvement inline with ophthalmic sub-specialty development in Nigeria. Consequently, in this study we reviewed eyelid surgeries over the past seven years.

Materials and Methods

The hospital's eye theatre keeps a record of all ophthalmic surgical procedures. The minor and major surgical log books were retrospectively reviewed to obtain information on all patients who had eyelid surgery either as a minor or a major procedure from 1st January 2008-31st December 2014. Patients' relevant biodata, preoperative diagnosis, associated ocular comorbidity, date of surgery, indication for surgery, type of surgery, type of anaesthesia administered, and rank of surgeon (resident doctor or consultant ophthalmologist) were obtained. The total number of minor ophthalmic surgeries within the study period was also computed.

The data obtained was entered into Epi Info Statistical Software, version 3.4 (Epi InfoTM, Atlanta, Georgia, USA). Data entry was validated by double entry and analysed using descriptive statistics to yield frequencies, percentages and proportions. The chi-square test was used to compare proportions and a p value <0.05 was considered statistically significant.

Ethical approval was obtained from the Institutional Medical Research Ethics Committee of Jos University Teaching Hospital.

Results

A total of 584 minor ophthalmic surgeries were performed within the study period. Eyelid surgeries were performed on 237 eyes of 221 persons, 16 (7.2%) persons had surgeries on both eyelids. There were 121(54.8%) males and 100 (45.2%) females (Table 1). The male: female ratio was 1.2:1. There was no statistically significant difference in uptake of services between the genders (p>0.5). The mean age was 30.3 years with a standard deviation (SD) of 17.8 (age range with mean ±1SD was 12.5-48.1 years). The paediatric age group (≤ 18 years) constituted 21.3% of the study group. Up to 87.4% of participants were aged <50 years while only 12.6% were aged >50years. There were up to 20 types of eyelid morbidities (table 2), 11(4.6%) eyes had more than 1 morbidity on the eyelid (e.g an eyelid could have a lid laceration with canalicular injury; chalazion could co-exist with a cyst of moll; etc). Eyelid lacerations, chalazia, cystic lid lesions and solid eyelid masses were the main morbidities observed accounting for 30%, 25.8%, 10.5% and 10.5% of all morbidities respectively. A total of 65 persons had lid lacerations, of these, 52(80%) were males while 13(20%) were females. In all, 74 eyes had lid laceration (Table 2).

Table 1. Age and sex distribution of the study population

Age Group (years)	Male		Female		Total	
	n	%	n	%	n	%
<1	0	0	2	2.0	2	0.9
1-10	17	14.0	18	18.0	35	15.8
11-20	9	7.4	15	15.0	24	10.9
21-30	38	31.4	24	24.0	62	28.1
31-40	24	19.8	10	10.0	34	15.4
41-50	22	18.2	14	14.0	36	16.3
51-60	7	5.8	9	9.0	16	7.2
61-70	3	2.5	5	5.0	8	3.6
71-80	1	0.8	3	3.0	4	1.8
Total	121	100	100	100	221	100

A total of 249 surgeries were performed on the eyelid during the study period comprising 20 different surgical procedures (table 3), 246 (98.8%) as minor procedures and 3(1.2%) as major procedures. Eyelid surgeries accounted for 42.1% of all minor ophthalmic surgeries within the study period. Of the 249 eyelid surgeries, 78.3% of surgeries were performed under local anaesthesia; 68.6 % of all surgeries were performed by resident doctors. The main types of procedure were eyelid repair (reconstruction), incision and curettage (I&C) of chalazia and excision biopsies accounting for 29.7%, 26.1% and 21.7% of all procedures respectively. Figure 1 shows that these three surgical procedures accounted for between 51.7% and 90.9% of eyelid surgeries over the past 7 years, with an annual average of 74.9%.

Discussion

Eyelid surgeries are fairly common in our setting. Only few persons had bilateral eyelid surgeries within the study period. This could be due to the fact that most eyelid morbidities are unilateral and even bilateral lesions could be asymmetrical. Though, not statistically significant, uptake of services by the male gender was more. This is consistent with global findings that uptake of ophthalmic surgical services is more among the male gender.¹⁶ In this study however, the observed difference in uptake of service could be due to the high proportion of injury related pathologies observed, and injuries were more common among males. The mean age of the study group is lower than what was observed in the mid-western region of Nepal (42 years±13.9).⁶ The age group ≤10 years and those aged 21-30 years constituted 16.7% and 28.1% of participants respectively which is quite similar to what was observed among a study group assessed in an established oculo-plastic unit in south western Nigeria where participants aged 0-9years and 20-29 years constituted 22.7% and 19.3% of the study

populace respectively.³ This shows that the demographic characteristics of surgical eyelid patients could be closely related to the age pattern of oculo-plastic consultations in the eye clinic.

Most of the indications for eyelid surgery observed in this study is similar to what is obtainable in literature.^{1, 6-15} They include neoplasms, trauma that involve the eyelid and periorbital area and variety of congenital and acquired blepharocanthal abnormalities. The main eyelid morbidities observed (lid lacerations, chalazion and tumours) is however in contrast to what was observed in Lagos where the main eyelid morbidities were ectropion, ptosis and eyelid tumours.³ This difference could be attributed to the difference in the study groups. We reviewed participants who had surgery in a comprehensive eye care setting while the Lagos study looked at patients in an oculo-plastic (sub-specialty) clinic setting. The proportion of patients with lid neoplasm is however similar in both studies. The main eyelid morbidities in the Nepalese study were ocular tumours and eyelid trauma.⁶ The proportion of eyelid trauma observed in Nepal was close to what we observed in this study.

Twenty different types eyelid procedures were performed during the study period. Only a few eyes had more than one surgical procedure performed on it. The main types of eyelid surgeries were eyelid repair, incision and curettage and excision biopsies. These 3 surgical procedures formed an annual average of 74.9% of all lid surgeries observed over the seven year period. This is comparable to findings in south eastern Nigeria where eyelid repair and I&C were the main eyelid surgeries.⁴ Eyelid repair and excision of cyst were also the main lid surgeries observed in Port Harcourt.⁵ Tarsorrhaphy was performed on 3.2% of eyes. This is a surgical procedure that involves suturing of the lateral margins of the eyelids together with the aim of shortening the interpalpebral fissure.¹⁷ Indications for tarsorrhaphy as observed in this study include lagophthalmos and orbitopathies (which include orbital tumours and retrobulbar haemorrhage). A wedge resection was performed on six eyes. This is a horizontal lid shortening procedure used to correct involutional (age-related) ectropion. Ectropion is the outward turning or rotation of the eyelid margin which leads to poor eyelid opposition to the globe. This may result in exposure of the eye and eversion of the punctum. Symptoms may include a red eye, dryness, foreign body sensation and tearing. Surgery is indicated when exposure of the eye impairs comfort or vision.¹ A full thickness wedge shape of redundant tissue is excised where the ectropion is marked and the eyelid defect closed by direct apposition.¹ Involutional ectropion was not a main indication for eyelid reconstruction in this study. This could be due to the fact that this study

population is relatively young. There is a need to create awareness on the availability of oculo-plastic services to correct age-related blepharocanthal changes in our environment as this can improve cosmesis.¹ Six eyes with cicatricial ectropion were corrected with a dual procedure comprised of scar release with full thickness skin grafting. The procedure frequently involves 3 steps. The anterior lamellar of the eyelid is incised to release tension on the eyelid, the eyelid is then tightened horizontally and finally the anterior lamella is vertically lengthened with a skin graft or a flap to prevent recurrence of a cicatricial contracture. The most desirable donor site for lower eyelid defects is the post-auricular region. The upper eyelid skin is also desirable when available. Other sites that are less desirable include the pre-auricular skin, supraclavicular skin and the skin of the upper arm.¹ One participant had bilateral ankyloblepharon (a congenital blepharocanthal abnormality). In ankyloblepharon, the eyelid margins are partially or completely fused together. The horizontal palpebral fissure is reduced. This rare abnormality may be inherited as an autosomal dominant trait and may occur in association with ectodermal defects such as cleft lip and palate.¹⁸ Neostigmine test was performed on 1 participant to confirm a diagnosis of Myasthenia gravis. The effect of the test was observed in both eyes of the patient. Myasthenia gravis is an autoimmune disease in which antibodies mediate damage and destruction of acetylcholine receptors in striated muscle. The resultant impairment of neuromuscular conduction causes weakness and fatigue of skeletal musculature. Patients frequently present with ptosis (drooping of the upper eyelid) which worsen towards the end of the day.¹⁹ Epilation was performed in theatre on an eye of a patient with acquired distichiasis (metaplastic lashes which usually rub on the surface of the eye). It is a rare disorder and is caused by metaplasia and differentiation of the meibomian glands to become hair follicles and variable number of lashes then originates from meibomian gland orifices. Important causes include late stage cicatrizing conjunctivitis associated with chemical injury, Steven-John's syndrome and ocular cicatricial pemphigoid.²⁰ Most epilations are done in the eye clinic for more common causes of trichiasis (e.g. cicatricial entropion due to trachoma). Entropion is the inward turning or rotation of the eyelid margin, which may cause the lashes or the skin of the lid margin to rub against the eye. Symptoms include itching, foreign body sensation, photophobia and tearing. Mechanical trauma from an entropion/trichiasis may result in conjunctivitis, keratitis, corneal scarring, corneal ulceration or loss of the globe. Surgery is indicated when this condition poses a threat to comfort or vision.¹

In conclusion, eyelid surgeries are fairly common in

our center. All general ophthalmologists should be skilled in eyelid repairs. We have identified areas of practice that require more specific surgical training to increase and meet the demands for our services. Our findings are also of relevance to the emerging orbito-oculoplastics subspecialty in the Nigeria.

Competing interest: None.

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