

## Survey of patients with presentation of ptosis in ophthalmic-plastic subspecialty clinic

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### Abstract

Ptosis may interfere with normal development of vision in children and activities of daily living when the field of vision is impaired in adults.

**Purpose:** To find out the incidence and pattern of ptosis with associated visually disabling problems in oculoplastic clinic in order to have management plan for the sufferer.

**Materials and Methods:** A cross-sectional study based on data obtained from oculoplastic clinic from January 2015 to July 2017. These were socio-economic characteristics, types of ptosis, severity, laterality, visual acuity and treatment offered.

**Results:** There were 106 cases of patients who presented with Ptosis in oculoplastic clinic. This constituted 7.1% of all new cases seen. There were 60 (56.6%) males and 46 (43.4%) females with male to female ratio of 1.3:1.0. More than 3/5<sup>th</sup> of patients with ptosis 65 (61.3%) were found in 18 years and above. Of all the types of ptosis, traumatic was the commonest 54 (34.0) followed by mechanical ptosis 36 (34.0) with highest proportion among students. The traumatic ptosis was significantly higher in males than females. High proportion of severe degree of ptosis was found in neurogenic and traumatic while mechanical, congenital and aponeurotic caused high proportion of mild degree of ptosis. About 1/5<sup>th</sup> of the patients presented with monocular blindness.

**Conclusion:** Ptosis incidence constituted an appreciable proportion of patients seen in oculoplastic subspecialty clinic with traumatic as commonest among active economically productive age group. One fifth of these patients presented with monocular blindness. Psychosocial implications and visual disabling problems need to be methodically addressed by the managing oculoplastic specialist.

**Keywords:** Clinic, Incidence, Ophthalmic-plastic, Ptosis.

### Introduction

Ptosis is frequently regarded as a purely cosmetic issue, but can be visually disabling and may be a sign of underlying systemic disease.<sup>(1, 2)</sup> It could be congenital or acquired. Visual impairment and astigmatism, particularly in congenital cases, are complications of ptosis.<sup>(3)</sup> Ptosis may therefore interfere with the normal development of vision, resulting in amblyopia in children and in adults it may interfere with activities of daily living when the field of vision is impaired.<sup>(3)</sup> It is commonly encountered in patients of all ages.<sup>(3)</sup> Ptosis may be found isolated, or may signal the presence of a more serious underlying neurological disorder.<sup>(1)</sup> Thus, the early diagnosis and treatment of ptosis is an important prognostic factor in its management. Generally, treatment of ptosis comprises a watch-and-wait policy, prosthesis, medication, or surgery<sup>(3)</sup> depending on the cause. There are insufficient statistics regarding the prevalence and incidence of ptosis in the United States and globally.<sup>(3)</sup> However, previous studies shows that the prevalence of ptosis in children is under 1% and over 10% in the elderly.<sup>(4)</sup> The prevalence rate in a school survey in Nigeria was found to be 1.2%.<sup>(5)</sup>

The purpose of this study was to find out the incidence and pattern of ptosis with associated visually disabling problems in the oculoplastic clinic.

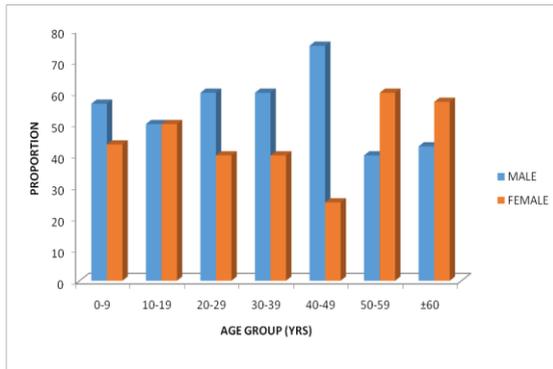
### Materials and Methods

This was a cross-sectional study based on data obtained from oculoplastic clinic from January 2015 to July 2017. Information obtained includes socio-economic characteristics, types of ptosis, severity, laterality, visual acuity and treatment offered. Ptosis was defined as mild, moderate and severe when Marginal Reflex Distance (MRD1) was 2mm, 3mm and 4mm respectively. MRD1 is the distance from the pupillary light reflex point to the upper eyelid margin. Data were expressed as Mean  $\pm$  Standard Deviation (SD) and frequency expressed as a percentage. The relationship between categorical data were analyzed using Chi-square ( $X^2$ ) test. A P value of  $<0.05$  was considered statistically significant. The Study was conducted in accordance with tenets of the Helsinki Declaration. Ethical approval was obtained from the institution ethical review committee.

### Results

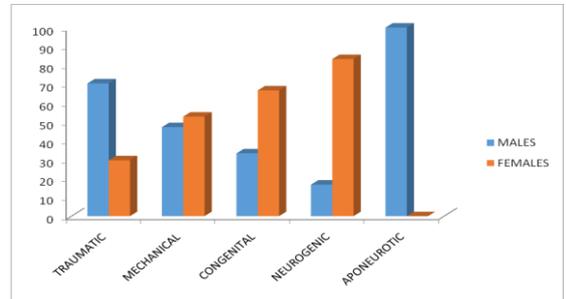
There were 106 cases of patients who presented with ptosis in oculoplastic clinic during study period. This constituted 7.1% of all new cases (1,493) seen in the oculoplastic clinic of the hospital. There were 60 (56.6%) males and 46 (43.4%) females with a male to female ratio of 1.3:1.0. The age ranged from 1 year to 70 years with a mean age of  $25.8 \pm 17.7$  years. Unilateral ptosis was 97 (91.5%) with 53 left and 44 right while

bilateral ptosis was 9 (8.5%) making a total of 115 eyes. ( $\chi^2=30.585$ ,  $df=2$ ,  $p=0.001$ ).



**Fig. 1: Age and Sex Distribution**

There were more males than females across all age groups except age 10-19 and 50years and above. More than 3/5<sup>th</sup> of the patients with ptosis 65(61.3%) were found in patients 18years and above. ( $\chi^2 =5.434$ ,  $df=1$ , $p=0.020$ ).



**Fig. 2: Types of Ptosis and sex distribution**

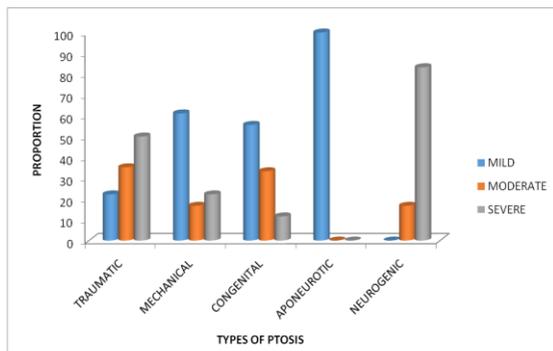
The traumatic ptosis was significantly higher in males than females compared with the remaining types of ptosis ( $X^2=12.103$ ,  $df=4$ ,  $p=0.012$ ). However, the only patient with aponeurotic ptosis was a male. When classified into congenital and acquired, 9 (8.5%) were congenital while the remaining 97 (91.5%) were acquired.

**Table 1: Occupation and types of ptosis distribution**

Occupation	Types of Ptosis					Total
	Traumatic	Mechanical	Congenital	Neurogenic	Aponeurotic	
Artisan	8 (14.8)	2(5.6)	0 (0)	1(16.7)	1(100.0)	12
CS	10 (18.5)	4 (11.1)	1 (11.1)	1(16.7)	0 (0)	16
Dependant	2 (3.7)	3 (8.3)	2 (22.2)	0 (0)	0 (0)	7
Driving	1 (1.9)	3 (8.3)	0 (0)	0 (0)	0 (0)	4
Farming	3 (5.6)	0 (0)	0 (0)	0 (0)	0 (0)	3
Schooling	24 (44.4)	21(58.3)	6 (66.7)	0 (0)	0 (0)	51
Trading	6 (11.1)	3 (8.3)	0 (0)	4 (66.7)	0 (0)	13
Total	54 (50.9)	36 (34.0)	9 (8.5)	6 (5.7)	1 (0.9)	106

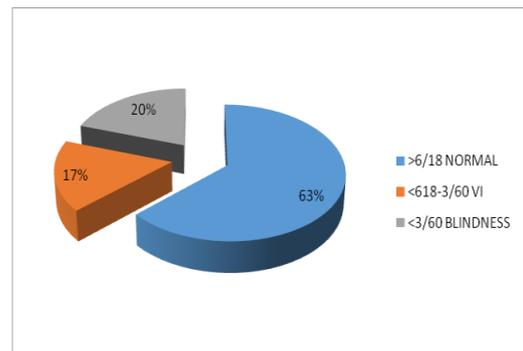
N/B: CS-Civil servant

Of all the types of ptosis traumatic was the commonest 54 (34.0) followed by mechanical ptosis 36 (34.0) with highest proportion among students while aponeurotic was the least with only one patient.



**Fig. 3: Degree of ptosis caused by different types of ptosis**

High proportion of severe degree of ptosis was found in neurogenic and traumatic while mechanical, congenital and aponeurotic caused high proportion of mild degree of ptosis. The only patient that presented with aponeurotic ptosis had mild degree of ptosis.



**Fig. 4: Visual Acuity of Patients with Ptosis**

VI-Visual impairment

About 1/5<sup>th</sup> of the patients presented with blindness (VA <3/60)  $X^2=42.698$ ,  $df=2$ , $p=0.001$ ).



**Image 1: Clinical image of a patient with Mechanical Ptosis**

### Discussion

The incidence of ptosis in this study was 7.1%. This constituted appreciable proportion of all patients seen in the oculoplastic subspecialty clinic of ophthalmology department of the tertiary institution. This is higher than the report of 25 cases in Ibadan southwest Nigeria over a five year period,<sup>(5)</sup> Iranian study which only included adult population<sup>(6)</sup> and Tehran eye study<sup>(4)</sup> but lower than 11.5% reported in Manchester.<sup>(7)</sup> This could be due to establishment of oculoplastic subspecialty clinic which serves as a referral centre for either self-referral, general ophthalmology clinics within the centre or other centres within and outside the state. Apart from the fact that ptosis is a cosmetic visually disabling problem<sup>(1)</sup> that may first present in the oculoplastic clinic, the underlying serious neurological disorder must be multidisciplinary approached timely in order to prevent avoidable grave consequences. There was a slight male preponderance in this study similar to some studies.<sup>(4-6)</sup> This might partly be due to the fact more males accessed the oculoplastic facility though it has been reported that females are more sensitive to imposed cosmetic disfigurement arising from oculoplastic disorders<sup>(8)</sup> or that more males were more involved in activities that could result in eye injury<sup>(9)</sup> with consequential injury to the eye lid resulting in ptosis. This study revealed young adult males were more affected with this disorder than the children and elderly supporting the fact that active and economically productive age group<sup>(10)</sup> presented with this condition. Unilateral ptosis was predominantly observed which is similar to most studies.<sup>(4-6, 11)</sup> Majority of bilateral cases (88.9%) occurred in children which could result in amblyopia if there is delay presentation and a compensatory head posture such as chin up position may be adopted by the children or may mechanically lift the ptotic lid in order to see clearly.<sup>(3)</sup>

The commonest cause of ptosis in this study was of traumatic origin among students similar to a study done in Kano, North-West Nigeria<sup>(11)</sup> but contrary to a study

done by Janet et al where aponeurotic ptosis was topmost followed by traumatic,<sup>(12)</sup> Gonzalez-Esnaurrizar study where traumatic ptosis was the least common<sup>(13)</sup> and Gautam et al study where traumatic was 2<sup>nd</sup> least common.<sup>(14)</sup> The reason for the high incidence of traumatic ptosis might be due to eye injury ranging from both open and close-globe injury. It was reported that these group of people are the most mobile and patronize commercial motor cyclist for means of transportation.<sup>(11)</sup>

The study revealed that high proportion of severe degree of ptosis was found in neurogenic and traumatic while mechanical, congenital and aponeurotic caused high proportion of mild degree of ptosis. Severe degree of ptosis is both cosmetic and visually disabling that gives a lot of psycho-social concern to the sufferer. Review of literature documented ptosis impairs visual field and patient well-being. Severe degree of ptosis is of the current common functional surgical indications for ptosis surgery which must be discussed with the patients.<sup>(15)</sup> One -fifth of the patients that had ptosis presented with blindness in that eye. Some authors reported that patients' functional status is reduced by blepharoptosis and surgical repair results in measurable increase in health- related quality of life<sup>(16)</sup> only of few of our patients had surgery while majority were medically co-managed with the physicians especially the neurogenic type of ptosis.

### Conclusion

Ptosis incidence constituted an appreciable proportion of patients seen in the oculoplastic subspecialty clinic with traumatic as commonest among active economically productive age group. One fifth of these patients presented with monocular blindness. Psychosocial implications and visual disabling problems need to be methodically addressed by the managing oculoplastic specialist. Public enlightenment outreach programme needs to be carried out to sensitize the masses to prevent the visual disabling problem that could arise from delay presentation of children born with ptosis.

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