ORIGINAL ARTICLE

Incidence and Pattern of Retinal Detachment in a Tertiary Eye Hospital in Nigeria

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ABSTRACT

Objectives: The aim was to determine the hospital incidence, pattern and clinical presentation of retinal detachment at the Guinness Eye Center, Onitsha, Nigeria. **Materials and Methods:** Case files of all retinal detachment patients seen at the Guinness Eye Center Onitsha between June 1997 and May 2012 were reviewed. Information on age, gender, symptoms duration, type and anatomic location of detachment, presenting visual acuity, and predisposing factors were analyzed. **Results:** A total of 93 patients (99 eyes) were seen with a male preponderance (M:F = 2:1) and age range 10–89 years; median - 61 years; mode - 55 years; incidence - 0.13%. Rhegmatogenous retinal detachment comprised 93.6%. Symptoms duration was 5 days to 8 years; median - 9 months; mode - 6 months. All the affected eyes had low vision with 79.8% blind; of the unaffected eyes, 40.2% had low vision with 24.7% being blind. Trauma was the precipitating factor in 33 (35.5%) patients. Proliferative vitreoretinopathy, 19 (19.2%) eyes, and lattice degeneration, 13 (13.1) eyes, were the commonest ocular risk factors. Common ocular co-morbidities in the affected eyes were cataract, 13 (13.1%) eyes; uveitis, 9 (9.1%) and glaucoma, 6 (6.1%) eyes. Supero-temporal, subtotal and total detachment constituted 84.8%; the macula was detached in 91.4%. The tears in eyes with rhegmatogenous detachment ranged from 1 to 6, with 51 (54.8%) having multiple tears. 10 (10.8%) eyes had giant tears; 6 (6.5%) had dialysis and 3 (3.2%) had coexisting macula holes; in 73.1% the tears were located in the superior retina. **Conclusions:** Retinal detachment incidence is low in our hospital; most patients presented late with severe visual loss. A community-based study will provide more information on the magnitude of the problem. Education of the public on retinal detachment symptoms, the predisposing/precipitating factors and the need for early reporting to hospital are required.

Keywords: Incidence, Nigeria, pattern, retinal detachment

INTRODUCTION

Retinal detachment occurs when the neurosensory retina separates from the retinal pigment epithelium.[1] With this separation the potential space (the subretinal space) is usually occupied by fluid.[1] Clinically there are three main types of retinal detachment namely rhegmatogenous, tractional and exudative detachments.

Retinal detachment is a known cause of ocular morbidity and blindness in Nigeria as evidenced by previous studies on causes of blindness and visual impairment.[2-5] In spite of the several reports of the contribution of retinal detachment to the burden of blindness and visual impairment in Nigeria, only few had specifically dealt with its epidemiology and impact on the magnitude of retinal diseases. In one of the earliest studies of retinal detachment in Nigeria, Ibechukwu[6] reported approximately 4 cases/year at the Jos University Teaching Hospital in North-Central Nigeria. In a study of retinal diseases in Onitsha, Nwosu[7] reported that retinal detachment accounted for 8.3%.

The present study deals with the hospital incidence, pattern and clinical presentation of retinal detachment at the Guinness Eye Center, Onitsha, South-East Nigeria over a 15-year period (1997–2012). The surgical intervention for rhegmatogenous retinal detachment was cryopexy and scleral buckling, which instruments were available hospital during the review

Access this article online

Quick Response Code

Website: www.nigerianjournalofophthalmology.com

DOI: 10.4103/0189-9171.154611

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period. Patients with exudative detachment all had preeclampsia and in each, the retinal spontaneously flattened within 2 weeks of delivery of the baby. The details of the surgical intervention and the outcome of treatment of these patients are the subject of another report.

MATERIALS AND METHODS

The case files of all patients seen at the Guinness Eye Center Onitsha between June 1997 and May 2012 were reviewed. Excluded were patients with tractional detachment secondary to retinal vascular diseases. Information on age, gender, symptoms duration, type of detachment, anatomic location of detachment, presenting visual acuity (VA) both the affected and the unaffected eyes, predisposing and precipitating factors were abstracted into a standard proforma and analyzed. In our hospital during the period under review, patients with posterior segment diseases were usually examined by indirect ophthalmoscopy, as well as fundus contact and noncontact lens. Ancillary investigations included B-mode ultrasonography. Our hospital did not have facilities for optical coherent tomography and fundus photography during this period. Permission to conduct this review was obtained from the authorities of the Guinness Eye Center, Onitsha.

RESULTS

Ninety-three patients (99 eyes) with different types of retinal detachment were seen during the 15-year study period. Also during this period, 73,874 new patients were seen in the hospital, thus giving an incidence of 0.13% for retinal detachment. There were 63 males and 30 females (M:F = 2:1). Figure 1 shows the age distribution of the patients. The age range was 10–89 years; median-61 years; mode-55 years.

Of the 93 patients, 87 (93 eyes) (93.6%) had rhegmatogenous retinal detachment; 4 (4.3%) had exudative detachment and 2 (2.1%) had tractional detachment not related to retinal vascular disease. Six patients (6.5%) had bilateral rhegmatogenous retinal detachment. While the tractional detachment was secondary to penetrating eye injury, all the cases of exudative detachment were seen in pregnant women with preeclampsia. There was no patient with solid detachment.

The duration of symptoms prior to presentation ranged from 5 days to 8 years with a median of 9 months; mode-6 months. Twenty-four (25.8%) patients presented within 1-month of the onset of symptoms; 35 (37.6%) were seen between 5 weeks and 3 months while 34 (36.6%) presented more than 3 months after

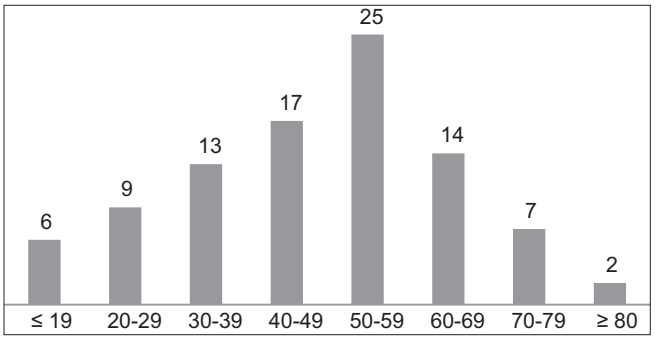

Figure 1: Age distribution (years)

the onset of the symptoms. The right eye was affected in 48 (51.6%) patients; the left eye in 39 (41.9%) and in 6 (6.5%) patients, both eyes were affected. Trauma (including intraocular surgery and couching) was the precipitating factor in 33 (35.5%) patients. In no patient was the detachment restricted to one quadrant.

In the 93 eyes with rhegmatogenous retinal detachment, the number of retinal tears ranged from 1 to 6, with 51 (54.8%) having multiple tears. 10 (10.8%) eyes had giant retinal tears; 6 (6.5%) had retinal dialysis and 3 (3.2%) had coexisting macula holes. Most of the retinal tears were located superiorly above the horizontal meridian. In 68 (73.1%) eyes, the retinal tears were located superiorly between 10 and 2 o'clock positions. In the 10 eyes with giant tears, the retinal tears extended for 6 or more clock hours running supero-inferiorly on the temporal retina and are all associated with total detachment; 15 (16.1%) eyes had inferior retinal tears located as follows: 9 eyes with tears located between 5 and 7 o'clock positions and 6 eyes with infero-temporal dialysis. Table 1 shows the location of the retinal tears. Supero-temporal detachment was the commonest; this was closely followed by subtotal and total detachment. Together these constituted 84.8% of the cases. In 85 eyes of 85 patients (91.4%) the macula was also detached.

Table 2 shows the ocular risk factors. Proliferative vitreoretinopathy, 19 (19.2%) eyes, and lattice degeneration, 13 (13.1) eyes, were the commonest ocular risk factors. Other ocular co-morbidities in the affected eyes were cataract and its sequelae, 13 (13.1%) eyes; uveitis, 9 (9.1%); glaucoma, 6 (6.1%) eyes; vitreous hemorrhage and paracentral leucoma, 2 (2%) eye each.

It needs be clarified that of the 186 eyes of the 93 patients, 99 had retinal detachment while 97 eyes were unaffected. In other words, 6 patients had bilateral detachment. All the affected 99 eyes had low vision (acuity <6/18) at presentation with 53 (79.8%) being blind (acuity <3/60) and 7 (7.1%) unable to perceive any light. Of the 97 unaffected eyes, 39 (40.2%) had low vision with 24 (24.7%) being blind including

Table 1: Anatomical location of the retinal tears

Location	Number (%)
Superior	68 (73.1)
Supero-inferior (giant tears)	10 (10.8)
Inferior	9 (9.7)
Infero-temporal	6 (6.4)
Total	93 (100.0)

Table 2: Ocular risk factors

Risk factor	Number (%)*
Proliferative vitreoretinopathy	19 (19.2)
Lattice degeneration	13 (13.1)
High myopia	7 (7.1)
Cystic retinal tufts	3 (3.0)
Snail tract degeneration	2 (2.0)
Retained intraocular foreign body	2 (2.0)

*Percentage based on 99 eyes

10 (10.3%) eyes that were unable to perceive light. Thus in at least 10 patients in this cohort, the eye with retinal detachment was the better eye.

DISCUSSION

Several studies had documented the contribution of retinal detachment to retinal diseases[4,7] and also to the burden of blindness and visual impairment in Nigeria.[2,3,5] However, studies that specifically dealt with the epidemiology of retinal detachment in Nigeria are few.[6] The incidence of retinal detachment, which is 0.13% in the present study is low. It is much lower than cataract and glaucoma – the two commonest causes of blindness and visual impairment in Nigeria.[8] But, it is comparable to the incidences previously recorded in Nigeria[5] and Brazil.[9]

A survey of retinal detachment in Jos University Teaching Hospital in North-Central Nigeria, reported 30 cases of retinal detachment in 8 years.[6] However, that study did not indicate the number of new ophthalmic patients seen in the same period. Thus the hospital incidence could not be calculated. Limeira-Soares *et al*.[9] reported the incidence of retinal detachment in a teaching hospital in Brazil to be 9.2:100,000. Rhegmatogenous retinal detachment has been estimated to affect about 1 in 10,000 patients annually in the United of America.[10]

A previous study in our hospital[7] found a low incidence of retinal detachment even among retinal diseases where it accounted for only 8.3%. Separate studies in Benin-City, Mid-West Nigeria[3] and Lagos, South-West Nigeria[4] also noted low incidence of retinal detachment. The low incidence in our hospital, notwithstanding, the visual morbidity is high as none of our patients had useful vision (VA ≥6/18) in the affected eye.

Rhegmatogenous retinal detachment was the predominant type of detachment in the present study. At 93.6% it is comparable to the 90.3% reported in Jos, Nigeria.[6] Both the Jos and the present studies did not record any solid detachment. This reflects the rarity of uveal tumors in our environment. Exudative detachment was rare. Tractional detachment not related to retinal vascular disease was also very uncommon. Traction retinal detachment is almost always related to retinal vascular diseases. Our present study was not on retinal vascular diseases. Ibechukwu[6] had reported that exudative detachment constituted 3.2% but made no mention of tractional detachment in his series.

Retinal detachment affects all ages and gender. But in the present study males were twice more likely to be affected than females. Male preponderance was also reported to be four fold in North-Central Nigeria[6] and three-fold in Lagos, South-West Nigeria.[11] However, it should be cautioned that the present study and others cited above were hospital-based. They are thus subject to patient selection bias. Therefore, the male predominance recorded in this and other hospital-based studies may not truly represent the situation within the community.

The long delay in presentation by most of the patients is not peculiar to retinal detachment patients. Previous studies in Nigeria had lamented the late presentation of eye injury patients to hospital and the adverse effect of such delays on the treatment outcome.[12,13] For social, economic, cultural and religious reasons, many patients may not seek hospital care early. Going to the hospital is often the last resort for many ill persons. Hospital treatment is not free. Most patients do not live in the urban areas where the hospitals are located. The decision to undertake a long journey (often with accompanying person) for hospital treatment is a weighty one. In the case of eye diseases, very severe visual incapacitation is the powerful tonic that facilitates such decision. It is therefore not surprising that nearly 80% of the patients in the present study at presentation were already blind in the affected eyes and a quarter were also blind in the unaffected eyes.

Trauma was the precipitating factor in 35.5% of the patients. This is slightly <39.5% reported in Northern Nigeria[6] but higher than 19.5% reported in South-Western Nigeria.[11] Nonetheless, there were very few trauma-related tractional detachment in spite of a long delay in presentation. This may be due to the fact that most of these patients sustained blunt trauma. Tractional detachment is associated less with blunt than by penetrating eye injury.

One out of every 3 patients had supero-temporal detachment; total and subtotal detachment constituted 53.6% of cases [Table 1] and more than 70% of the eyes with rhegmatogenous detachment had superiorly located retinal tears. Studies elsewhere had noted the preponderance of superior and supero-temporal detachment.[1,6,11] A subclinical superior detachment may evolve into a large lesion affecting the macula if not treated early. The median time of presentation of the patients in this study was 9 months. Thus, late presentation may be one of the reasons more than half of the patients had total or subtotal detachment. Total or subtotal detachment often involves the macula. Macula-off detachment coupled with delayed presentation lead to irreversible damage to the photoreceptors and severe sight loss. These factors help account for the severe visual morbidity in our patients where none had useful vision, and 80% were blind when first seen in the hospital. The prolonged untreated detachment coupled with the trauma as the precipitating factor in more than a third of the patients may account for the relatively high prevalence of proliferative vitreo-retinopathy and cataract in the affected eyes of the patients.

High myopia was the third commonest ocular risk factor in our patients. High myopia constituted 10% of cases in Ibechukwu's series.[6] Ashaye[11] had also noted that myopia was an important risk factor for rhegmatogenous retinal detachment in Lagos, Nigeria. However, high myopia is not common in Nigerians.[14-16] The retrospective nature of the present study has not allowed for the determination of the relationship between ametropia and retinal detachment in our environment. A prospective study will expectedly fully explore this relationship.

CONCLUSION

Retinal detachment has a low incidence in our hospital. However, a community-based study, though likely to be expensive, will provide a true picture of the magnitude of the problem. Most of our patients presented late to the hospital with very severe visual loss. Health education of eye patients and the general public on the symptoms of retinal detachment, the predisposing/precipitating factors and the need to report to the hospital early is required.

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How to cite this article: Nwosu SN, Ndulue JK, Akudinobi CU. Incidence and Pattern of Retinal Detachment in a Tertiary Eye Hospital in Nigeria. Niger J Ophthalmol 2014;22:69-72.

Source of Support: Nil, **Conflict of Interest:** None declared