Epidemiology and recurrence rate of pterygium post excision in Ghanaians

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SUMMARY

Objectives: To determine the epidemiology and recurrence rate of pterygium after excision using bare sclera technique
Design: Prospective non-comparative study.
Setting: Ophthalmology unit, Korle-Bu Teaching Hospital, Accra, Ghana.
Methods: The study involved 60 consecutive patients with primary pterygium from July 1998 to December 2000 who had bare sclera excision after informed consent. They were post-operatively followed up for 30-months.
Results: Thirty-five patients (58%) were females. The patients’ ages ranged from 17-75 years, mean (±12.6). Overall recurrence was 22(37%). The main complications encountered included granuloma 20 % (n=12), restriction in medial rectus muscle motility 2(3%), persistent vascularisation at excision site 2(3%) and adherence leucoma with uveitis 1(2%). No significant association was found between recurrence and pterygium morphology, calcification, allergy and occupation (indoor or outdoor).
Conclusion: The recurrence rate after pterygium excision using bare sclera technique in Ghanaians is high (37%).

Keywords: Pterygium, epidemiology, bare sclera excision, recurrence, conjunctival growth.

INTRODUCTION

Pterygium is a benign fibrovascular growth which invades the cornea from the conjunctiva and is common in the tropics. It is associated with ultraviolet light and also dusty environment.1, 2 It often gives rise to irritation, redness and eye discomfort and is cosmetically unsightly. Treatment is surgical but high recurrence rates are primarily seen after bare sclera surgery, 24-80%, 1, 5, 6 and remains a problem. Different adjuvants to bare sclera surgery have been tried all aiming at reducing the recurrence. These include B-radiation with Strontium-90, chemotherapeutic agents such as mitomycin-C and conjunctival autograft.3, 4, 10

At the time of this study, the surgical procedure commonly performed was excision using bare sclera technique. Anecdotal observation has shown both successes and recurrences after long-term follow up in years. Over the years, some ophthalmologists have modified their practice with a gradual shift towards the use of adjuvants to bare sclera surgery such as mitomycin-C and conjunctival autograft.

There are still some ophthalmologists who perform bare sclera excision alone in Ghana. The study therefore aimed at determining the epidemiology of primary pterygium and recurrence rate after excision using bare sclera technique in Ghanaians.

METHODS

Sixty consecutive patients with primary pterygia who had bare sclera excision after informed consent at the Ophthalmology unit, Korle-Bu Teaching Hospital, Ghana, from July 1998 to December 2000 were studied. They were post-operatively followed up for 30-months.

A structured questionnaire was used to collect information on the patients’ occupation (outdoor or indoor), use of spectacles, history of allergy or atopy, and any other ocular disease. In addition, clinical examination noted the morphology of the pterygia (fleshy/vascularised, intermediate, or atrophic) based on the translucency of the pterygia and presence or absence of calcification, its laterality (unilateral or bilateral), location (nasal, temporal or kissing), its extent into cornea and encroachment on the visual axis.

Data analysis

Time of recurrence in months was summarized as means and standard deviation. Chi-square test was used to compare the proportions of various categories of
conditions. Logistic regression was employed to establish causal associations between various risk factors. Significance was set at alpha=0.05.

RESULTS
Demographics: Thirty-five patients (58%) were females. The patients’ ages ranged from 17-75 years, mean (±12.6).
Laterality: 37(62%) were bilateral; 13(21.7%) were left and 10 (16.7%) were right.
Orientation: 57(95.0%) were nasal; 1(1.7%) temporal and 2 (3.3%) kissing (both nasal and temporal in the affected eye).
Calcification: 20 out of 60(33%) demonstrated presence of calcifications.
Morphology: 7(12%) were transparent/ atrophic (T1); 41(68%) were intermediate (T2) and 12(20%) were vascularised / fleshy (T3).
Allergy: Nineteen out of sixty (32%) admitted to having allergy to dust, 17/60(28%) to perfume and 11(18%) to history of asthma.
Recurrence: The overall recurrence was 22(37%). The mean time of recurrence was 4.27(±2.03) months. The recurrence time showed a bimodal pattern at 3months: 10(45%) and at 6 months: 7(32%).
Complications: The main complications encountered were granuloma 20 % (n=12), restriction in medial rectus muscle motility 2(3%), persistent vascularisation at excision site 2(3%) and adherence leucoma with uveitis 1(2%). No significant association was found between recurrence and pterygium morphology, presence of calcification, allergy and occupation (indoor or outdoor).

DISCUSSION
This study provides basic epidemiological and clinical features of pterygium, a common eye disease in warm climates. The overall recurrence was high, 37%. This high recurrence rate corroborates other findings associated with bare-sclera technique alone as a method of treatment of pterygium, compared with other forms of surgical or adjuvant treatments.

The results show that the risk factors for recurrence include geographic location, age, morphology and fleshiness or vascularity of pterygium and other factors such as allergy or immunological factors. This study did not demonstrate any significant association between recurrence and vascularity (atrophic, vascularised), allergy to dust, allergy to perfumes and spray, history of asthma, or type of occupation (indoor or outdoor) and gender.

Majority of the recurrences were observed in the first year post excision with a bimodal presentation with peaks at 3 and 6 months. This pattern of recurrence is corroborated by Hirst et al who also found a 97% chance of recurrence within 12 months of the removal without the bimodal component. The bimodal pattern of recurrence observed was unexpected. This finding has not been highlighted in the literature.

Table 1 Relationship between recurrence and risk factors for pterygium.

<table>
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<th>Characteristics</th>
<th>Recurrence</th>
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</table>

Further studies in the Ghanaian population using larger series are needed to establish whether this pattern of recurrence was an incidental finding or something peculiar to our population. There was no gender difference with respect to pterygium occurrence; male: female ratio was 5:7. In the literature, there had been conflicting reports on the male to female ratio in patients with pterygium. Whereas some report male preponderance as in Southern India, others show female preponderance as in Ibadan in Nigeria where the male: female ratio was found to be 5:6.

However, the difference in this study was not statistically significant. The difference is sometimes thought to be due to more exposure to environmental factors in the males as a result of their mostly outdoor occupation. Places where the females work outdoors as frequently as their male counterparts, as may be found in urban areas in Africa like Ibadan and Accra, there may be no gender difference or even a female preponder-
ance. The latter may also be due to females being more cosmetically conscious of the growth.

The age range affected was 17-75 years with a mean age of 45.6 years. This compares with other studies on prevalence of pterygium where it occurs about the second decade with the highest prevalence in the 4th and 5th decades. A few occurrences have been seen in the 1st decade though. The recurrence rate after pterygium excision using bare sclera technique, and other serious complications such as medial rectus restriction are also known complications.

CONCLUSION
The recurrence rate after pterygium excision using bare sclera technique in Ghanaians is high (37%). This study is the first to determine the recurrence rate of pterygium excision with bare sclera technique in Ghanaians and provides important and relevant information for ophthalmic practice in Ghana. This finding should discourage the use of this technique alone by ophthalmic surgeons in Ghana as in other parts of the world.

The finding would also form the basis for comparison for any future studies in Ghana which would aim at reducing recurrence.

REFERENCES


