

A study of recurrence of pterygium after excision with bare sclera method and excision with beta radiation

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Abstract

Introduction: Pterygium is one of the clinical conditions met with commonly in tropical countries especially in India. Etiology is not certain but sunlight (ultra violet rays) supposed to be the main cause. Irrespective of its etiology the treatment has been same that is surgical. The object of this study was to evaluate recurrence of pterygium after excision and excision with application of beta radiation. **Material and Method:** 49 CASES were selected from the outpatient department with 53 Pterygia. All the cases were subjected to surgical removal of pterygium with bare sclera technique, by the same surgeon. Out of 53 surgeries 26 cases received beta radiation after excision. BETA radiation (STRONTIUM 90) was given in doses of 1500 rads on bare sclera including limbus with strontium 90 applicator by the surgeon immediately on the second day of surgery in a single dose. **Observations:** Out Of Total 49 Cases 53 Pterygia were studied, these cases were grouped in four categories. **Group A:** unilateral cases with no surgery—only excision done. **Group B:** unilateral cases with no surgery only excision done+ beta radiation given, **Group C:** bilateral pterygia cases –no h/o surgery, both eyes were subjected to surgery and beta radiation to only one eye, **Group D:** recurrent cases –surgery+beta radiation. *Out of 27 only excision 7 recurrence –28%, Out of 26 cases with excision +radiation 1 recurrence-3%. **Summary:** Our study suggests that beta-radiation is highly effective in reducing the recurrence of pterygium in all types. **Keywords:** pterygium, beta radiation.

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INTRODUCTION

Pterygium is one of the clinical conditions met with commonly in tropical countries especially in India. It is a wing like fold of conjunctiva encroaching over cornea generally in intra palpebral fissure.¹ Leading to astigmatism, irritation of the eyeball, intermittent redness and watering. Etiology is not certain but sunlight (ultra violet rays) supposed to be the main cause. The dry dusty wind is the subsidiary cause for its occurrence. Many theories have been put forward to explain the aetiology that is inflammatory, neoplastic and degenerative.

Irrespective of its etiology the treatment has been same that is surgical. In other ophthalmic surgeries the recurrence rate is not so high and common as in case of pterygium.² The object of this study was to evaluate recurrence of pterygium after excision and excision with application of beta radiation.

MATERIAL AND METHOD

49 CASES were selected from the outpatient department with 53 pterygia were studied, out of which 41 patients having unilateral pterygium, 4 patients having bilateral pterygium and 4 patients with unilateral pterygium previously operated and having recurrence. All the cases were subjected to surgical removal of pterygium with bare sclera technique, by the same surgeon. Out of 53 surgeries 26 cases received beta radiation after excision.

Method

Head of pterygium is lifted and dissected off the cornea meticulously with partial keratectomy. The neck of pterygium is freed from sclera and cut along pterygial tissue around 4 mm from limbus taking care not to damage the medial rectus muscle. Haemostasis is achieved and exposed episcleral tissue is cauterized.

Conjunctival sutures taken leaving bare sclera near limbus. BETA radiation (STRONTIUM 90) was given in doses of 1500 rads on bare sclera including limbus with strontium 90 applicator by the surgeon immediately on the second day of surgery in a single dose.²

Observations

Out Of Total 49 Cases 53 Pterygia were studied, these cases were grouped in four categories.

GROUP A: Unilateral pterygium, no previous history of surgery ONLY excision was performed in our study.

GROUP B: Unilateral pterygia with no previous history of surgery, excision done and beta radiation given.

GROUP C: cases with bilateral pterygia (BE) with no history of surgery both eyes were subjected to surgery however beta radiation given to only one eye and the second eye with simple excision was used as control eye.

GROUP D: included all cases of recurrent pterygium, excision with beta radiation given.

OBSERVATION AND RESULT

Table 1: Beta-radiation

Procedure	No Of Surgeries	No Of Recurrences	Percentage Of Recurrences
Excision Only	27	7	28%
Excision With Beta radiation	26	1	3%

Table 2: Bilateral pterygium

Procedure	No Of Surgeries	No Of Recurrences	Percentage Of Recurrences
Excision Only	4	2	50%
Excision With Beta radiation	4	Nil	0%

Table 3: Recurrent pterygium

Procedure	No Of Surgeries	No Of Recurrences	Percentage Of Recurrences
Excision With Beta radiation	4	1	25%

DISCUSSION

The fact that there are numerous methods of treatment for the treatment of pterygium but no method has proved to be effective surgically 4 Surgical therapy itself often ends in failure with recurrence rate of 20-30%, where recurrent pterygium almost invariably recurred by same surgical method .Thus each successive recurrence become greater test for ophthalmologist’s surgical skill and a greater threat to the patients vision. “Recurrence may result in major ophthalmic problem” Precise mode of action of beta-radiation is not known but possible mechanism of action is as follows. Beta-radiation have effect on vasculature especially on capillaries, stop neovascularisation, capillary buds and fibroblast growth⁵ So radiation given postoperatively obliterates newly

formed blood vessels and secondly it depresses fibroblastic activities at the site of operation. Thus further encroachment of disease on raw cornea is prevented. As repair that is fibroblastic activity and endothelial proliferation occurs at the site of surgery starts by the end of 12 hours and complete after 3-4 days. Hence beta-radiation is given on second day in single setting .according to Hilger (1962) Dose less than 1000 rads is ineffective in pterygium and according to Wilson cataractogenic dose appears to be around 6000 to 7000 rads. Normally 10% of surface dose is absorbed at lens level (Kesten Baum 1963). Merian reported that minimum cataractogenic dose at Lens level is 200 rads.⁶ Considering all these points in our study we had taken 1500 rads as standard dose. Our experience was quite encouraging. We used beta-radiation in 26 eyes postoperatively and only one eye showed recurrence. Whereas eyes with only excision showed 28% recurrence. In 4 patients with bilateral pterygium recurrence was in 2 eyes among 4 eyes with only excision, where as no recurrence in 4 eyes with beta radiation treatment. In 4 patients with recurrent pterygium all were subjected to excision and beta-radiation and only one recurrence. Follow up of cases was up to 6 to12 months. Beta-radiation used in this study showed no reaction after applications. After treatment had completed the eyes become quiet in short time.

SUMMARY

Our study suggests that beta-radiation is highly effective in reducing the recurrence of pterygium in all types after excision with application of beta radiation so if possible pterygium should not be operated alone but it should be supplemented with beta-radiation.

REFERENCES

1. Comprehensive Ophthalmology by A K Khurana 79-80.
2. Avisar R, Arnon A, Avisar E, Weinberger D (2001) Primary pterygium recurrence time. *Isr Med Assoc J*:836-837.
3. Alaniz –Camino F (1982) The use of postoperative beta radiation in the treatment of pterygia. *Ophthalmic Surg* 13: 1022-1025.
4. Hoffman RS, Power WJ (1999) Current options in pterygium management. *Int Ophthalmol Clin* 39: 15-16
5. Rowen GE (1968) Pterygium –surgical excision followed by beta irradiation. *Rocky Mt Med J* 65:47-49.
6. Wilder RB, Buatti JM, Shima DS, Harari PM, *et al.* (1992) pterygium treated with excision and postoperative beta irradiation .*Int J Radiat Oncol Biol Phys* 23: 533-537.
7. Bernstein M, Unger SM (1960) Experiences with surgery and strontium -90 in the treatment of pterygium. *Am J Ophthalmology* 49:1024-1029.

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