

Clinical Profile of Ocular Surface Squamous Neoplasia A Retrospective Case series.

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Abstract: This is a retrospective case series of 24 patients who underwent surgical excision for histopathologically proven cases of ocular surface squamous neoplasia (OSSN) at a tertiary care center over a period of two years. The commonest age group involved was 50-60 years (83.3%). Males and females were affected in equal proportion. All patients presented with a growth in the conjunctiva. Impression cytology whenever available was correlated with histopathology (100%). Systemic predisposing factors included xeroderma pigmentosa in one patient (4.16%) and AIDS in two patients (8.33%). Recurrence was found in two patients (8.33%), of which one was managed successfully with topical mitomycin and the other with resurgery. In OSSN, early and prompt surgical intervention is frequently curative.

Key words: Ocular Surface Squamous Neoplasia, Impression cytology, Conjunctival growth

I. Introduction

Ocular Surface Squamous Neoplasia (OSSN), a term coined by Lee and Hirst, describes a spectrum of conjunctival and corneal epithelial neoplasia manifesting as dysplasia, carcinoma-in-situ and squamous cell carcinoma [1,2]. It is the third most common ocular tumor after retinoblastoma and melanoma [1,2]. An altered limbal microenvironment consequent to ultraviolet-B exposure, injury or HPV-16/HSV-1 infection has a role in etiopathogenesis of OSSN. The lesions comprising this spectrum often presents with similar clinical appearance. Most of them are slow growing tumors and commonly affecting the limbal conjunctiva. Although dysplasia and CIN are slow growing, they have strong malignant potential. Early detection and treatment have role in decreasing the incidence of squamous cell carcinoma. Keeping this in mind, we retrospectively studied histopathologically proven cases of OSSN to evaluate the clinical profile and outcome of surgical procedure.

II. Materials & Methods

24 patients over a period of two years with histopathologically proven OSSN were reviewed. In each case a complete medical and surgical history was taken, ocular examination including location, extent and clinical appearance of the lesion was done. The lesions were surgically excised keeping a safe margin of 2-3 mm of normal appearing conjunctiva. Cryotherapy was applied to the resected conjunctival margin and limbus with rapid freeze and slow thaw technique. If scleral involvement was seen, partial lamellar sclerotomy was done and the scleral bed was treated with absolute alcohol. Surgical reconstruction if required was done with conjunctival autograft. After initial epithelial healing, patients were recommended to have regular examinations in every 2 months for 1 year and annually thereafter.

III. Results

The commonest age group involved in our series was 51-60 years accounting for 83.3%. The mean age being 54.91 years. Male and female were affected in equal ratio. Mean duration of symptoms was 7.79 months. Mean follow up was 20.8 months. All patients had unilateral tumor with equal involvement of right and left eyes. Interpalpebral involvement was seen in all patients. Temporal quadrant was most commonly affected (66%). In 12 patients (50%), lesions were confined to conjunctiva and in rest 12 patients (50%) growth extended to cornea. Morphologically 10 (41.6%) patients were leucoplakic, 8 (33.3%) patients were papillomatous, 4 (16.6%) patients were gelatinous and 2 (8.3%) patients were cystic. Impression cytology was done in 18 patients (75%) and was co-related with histopathology. Systemic predisposing factors like xeroderma pigmentosa was seen in 1 (4.16%) patients and AIDS in 2 (8.33%) patients. Recurrence of lesions was seen in 2 patients (8.33%), out of which one underwent resurgery and other was treated with topical mitomycin C.



Figure 1: photographs showing ocular surface squamous neoplasia



Figure-2: surgical excision of ocular surface squamous neoplasia



Figure 3- macroscopic appearance of ocular surface neoplasia

Table-1- Clinical Profile of OSSN

Age in years	No of Males (n=24)	No of females (n=24)	Associated Systemic disease	Recurrence
0-10	0		-	-
11-20	0	1	Xeroderma Pigmentosa(1)	Yes
21-30	0	0	-	-
31-40	0	0	-	-
41-50	0	0	-	-
51-60	11	9	AIDS(2)	Yes(1)
>60	1	2	-	-
Total	12(50%)	12(50%)	3(12.5%)	2(8.33%)

IV. Discussion

Dysplasias, carcinoma-in-situ, invasive squamous cell carcinoma of conjunctiva are often similar in appearance clinically. Impression cytology can only distinguish benign from malignant lesions but it cannot determine the degree of invasion. Therefore any squamous lesion of ocular surface should be treated as a possible cause for invasive squamous cell carcinoma with potential of malignancy. Further the chance of malignant conversion increases with predisposing factors like xeroderma pigmentosa and AIDS. Complete surgical excision with tumor free margin is the best surgical option for the treatment of OSSN. Further, cryotherapy decreases the recurrence. Unlike other studies where male preponderance was seen, we found equal involvement of male and female [3, 4]. Older age group in the range of 51-60 years (83.3%) were commonly affected in our series which is consistent with Kim et al [3]. In our series we found leucoplakic lesion to be commonest followed by papillomatous lesion unlike other studies where gelatinous type was the commonest. Recurrence of lesion following surgery is common in invasive squamous cell carcinoma. In contrast to the study by Kim et al where recurrence was high i.e. 36.8%, we found recurrence in only 2 cases (8.33%) [3]. This is probably due to meticulous surgical excision combined with cryotherapy. Limited period of follow up might be another reason for the same. We found xeroderma pigmentosa in 4.16% and AIDS in 8.33% of patients in our series. However study by Tiong et al in 2013 found 50% of patients to be confirmed HIV seropositive cases in dysplasia and CIN and 86.67% in invasive squamous cell carcinoma [5]. Further, as per study by Pradeep TG et al 21% of OSSN patients were HIV positive [6].

V. Conclusion

Conjunctival dysplasia is a rare clinical entity among OSSN group. Early diagnosis with relevant investigations and histopathological co-relation, meticulous surgery and regular follow up can give excellent results. Recurrence, if at all occurs, can be treated with resurgery and topical mitomycin C. Impression cytology can complement the diagnosis, but complete surgical resection in early stage still holds the gold standard for the treatment of OSSN.

References

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