

## Clinical Profile of ocular Surface Squamous Neoplasia in Southern Odisha

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**Abstract:** This is an observational study of 31 clinically suspected cases of ocular surface squamous neoplasia (OSSN) at a tertiary care center over a period of two years. The commonest age group involved was above 60 years (58.06%). Males were predominantly affected (70.96%). Patients presented either with a growth only in the conjunctiva or involving the cornea. Systemic predisposing factors include AIDS in two patients (6.45%). Gelatinous form was found to be commonest (61.3%). On histology invasive squamous cell carcinoma was seen in 17 cases (54.83%). Surgical excision was done in 26 cases (83.87%) and Recurrence was seen in 4 patients (12.90%). In OSSN, early and prompt surgical intervention is frequently curative.

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

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### 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]. 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. Dysplasia and CIN are slow growing but they have strong malignant potential. Though OSSN is an uncommon entity it demands appropriate attention due to its potential for visual loss and systemic morbidity and mortality. Keeping this in mind, we studied 31 clinically suspected cases of OSSN to evaluate the clinical profile and outcome of surgical procedure.

### II. Materials & Methods

31 clinically suspected cases of OSSN were studied over a period of two year. All the cases were thoroughly interrogated, examined and investigated. A detailed history was taken and medical records of the patients were used to obtain information regarding systemic disorders. 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 above 60 years accounting for 58.06%. Gender ratio indicates male predominance, i.e 22 patients were male (70.96%). In majority of patients both conjunctiva and cornea were involved. Out of 31 cases in 19 cases (61.29%) both conjunctiva and cornea were involved. In rest 12 cases (38.70%) only conjunctiva was involved. Systemic predisposing factor like AIDS was found in 2 cases (6.45%). Association of pterygium was seen in 2 cases (6.45%). Morphologically 19 cases (61.3%) were Gelatinous type, 8 cases (25.8%) were nodular and 4 cases (12.9%) were Leukoplakic. On histology invasive squamous cell carcinoma was found in 17 cases (54.83%) and CIN-3 in 14 cases (45.16%). Surgical excision with keeping a safe margin of 2-3 mm was done in 26 cases (83.87%). Cryotherapy was applied to the resected conjunctival margin and limbus in 3 cases (9.67%) and topical MMC was used postoperatively in 2 cases (6.45%). Mean post operative follow up was 14.6 months. Recurrence was seen in 4 cases (12.90%) in our study which were seen in patient with only surgical resection.

#### **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. Age group above 60 yr. were most commonly affected in our study, which is consistent with Erie et al where mean age of onset of OSSN was 62 yr[3]. Our study found male predominance of OSSN (70.96%) which is similar to study by Mc Kelvie(2002), who found male prevalence of 69%[4]. We found AIDS in 6.45% 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]. Pterygium was found in 6.45% of cases in our study, which is in consistent with the study by TatL T et al [7] who found 5% of pterygia with foci of OSSN on pathologic review. In our study we found Gelatinous lesion to be commonest followed by Nodular lesion which is in consistent with most of the other studies. In our study 54.83% cases were diagnosed as squamous cell carcinoma and 45.16% cases as CIN-3. In a review of 95 advanced cases of OSSN by Pradeep Jain, Laxmichand and Preeti Thorat 50.53% cases were found to be CIN-3 and 49.47% cases as invasive squamous cell carcinoma. In contrast to the study by Kim et al [8] where recurrence was high i.e.36.8%, we found recurrence in only 4 cases(12.90%). This is probably due to meticulous surgical excision combined with cryotherapy. Limited period of follow up might be another reason for the same.

#### **V. Conclusion**

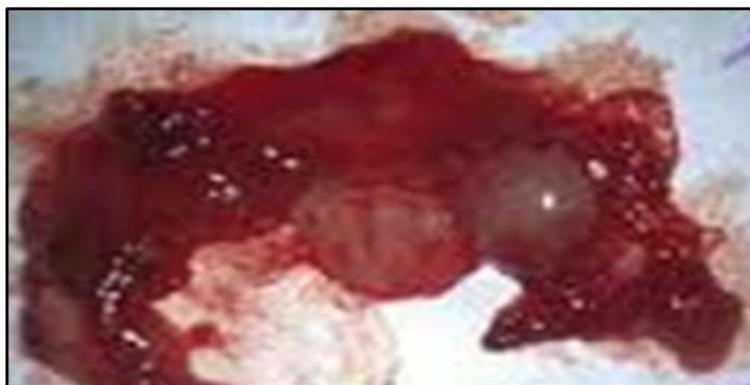
Ocular Surface Squamous Neoplasia (OSSN) though an uncommon entity needs to be picked up early, as prompt treatment in early stages is usually curative. Though slow growing in nature, advanced invasive lesions may end up in mutilating surgery like exenteration. Early diagnosis with relevant investigations 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.

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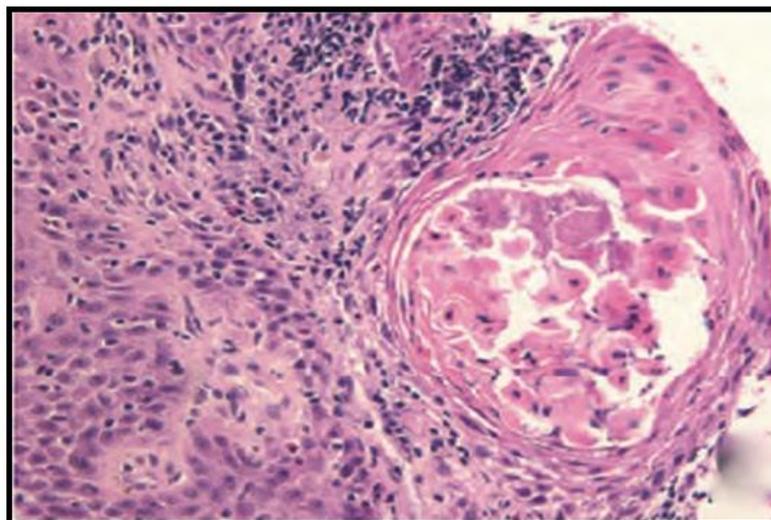
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**Fig-1** A Case Of Ossn



**Fig-2** Excised Specimen



**Fig-3** Histopathology showing Invasive Sc

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