CLINICAL PROFILE OF OCULAR SURFACE SQUAMOUS NEOPLASIA (OSSN).

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Abstract
Aim: To Study the Clinical profile of Ocular Surface Squamous Neoplasia (OSSN).
Design: Retrospective study.
Materials and Methods: We analysed 28 cases of OSSN who presented to the out-patient department of tertiary eye care centre Hospital, over a period of 1 year from January 2017 to January 2018.
Results: In patients, who presented with OSSN age ranged from 24 to 70 years, mean age being 44.80 years. Males were predominantly affected accounting for 64.28%. A nodule at the libus is the commonest presentation. About 25% of the patients were positive for HIV with mean age of presentation 32 years. Among HIV positive patients 5 cases had SCC.
Conclusion: OSSN was observed more common in males. Nodular type of lesion is the commonest variety. HIV positive individuals have an increased incidence of OSSN with invasive characteristics. Hence, ophthalmologists need to be aware of this association and a thorough workup is warranted for all patients presenting with OSSN, especially in the younger age group.
Keywords: Ocular surface squamous neoplasia, Carcinoma in-situ(CIS), Squamous cell carcinoma (SCC)

Introduction:
OSSN is an encompassing term for pre-cancerous and cancerous epithelial lesions of the conjunctiva and cornea. It includes the spectrum of Dysplasia, Carcinoma in-situ (CIS) and Invasive SCC [1-3]. CIS accounts for 39% of all premalignant and malignant lesions of the conjunctiva and incidence of invasive SCC varies from 0.02 to 3.5 per 1,00,000 population [4]. About 75% occur in men, 75% are diagnosed in older patients, 75% occur at the limbus [5,6]. OSSN is mostly unilateral and is seen in middle age and older patients. Rarely, it is bilateral in immunocompromised patients. Factors associated with the development of OSSN are exposure to sunlight, HPV type 16 infections and HIV infection [2,5]. A systemic association of the development of OSSN is Xeroderma Pigmentosum. Other factors associated are old age, heavy cigarette smoking, male sex and people of light complexion.
There are no consistent clinical criteria for distinguishing CIS from invasive SCC. The presence of feeder vessels, intrinsic vascularity and a nodular lesion raise suspicion of invasive SCC. OSSN usually presents either as a fleshy, gelatinous, elevated lesion or as a sessile, papillomatous lesion mostly in the interpalpebral region. Most often vision is not affected unless the lesion is encroaching onto the pupillary area. OSSN patients usually present with a swelling, redness and irritation and one can see large, dilated vessels (feeder vessels) surrounding the lesion [1,2,5,7,8]. Advanced cases can infiltrate the cornea and sclera [9] and rarely the tumour may extend into the orbit causing proptosis. Surgery has been the traditional treatment for primary OSSN, but now topical chemotherapy has been gaining increasing popularity among corneal specialists. This trend is evident in the most recent survey of the “standard of care” in the management of OSSN. In 2003, surgery alone was used for primary OSSN in 66% of corneal specialists, and in 2012 this dropped to 51%, with the other half now favoring medical therapy. Complete surgical excision with 2-4mm margin clearance without touching the tumour called the ‘no touch
A double freeze-thaw cycle of Cryotherapy is applied to the edges of the bulbar conjunctiva and if involvement is suspected, cryo is applied to the bare sclera as well [8]. Reported recurrence rate of OSSN is 15-52%. Lee and Herst reported a 17% recurrence after excision of conjunctival dysplasia, 40% after excision of CIS and 30% for SCC of conjunctiva [2]. The recurrence rate can be limited to less than 5% with the above technique. OSSN has a good prognosis. With the modern techniques the recurrence rate is about 5% and regional metastasis of 2%. [1,5,12,13]

MATERIAL AND METHOD

In this retrospective study, we analysed 28 cases of OSSN who presented to the out-patient department of tertiary eye care centre Hospital, over a period of 1 year from January 2017 to January 2018. We analysed 28 cases of OSSN that were diagnosed clinically and confirmed by impression cytology or histopathology. A detailed history including demographic data of Age, Sex, Occupation, HIV status of all the patients was obtained. Clinical features regarding the type of lesion, location, involvement of cornea were evaluated. Routine investigations like Hb%, CT, BT and HIV test were done after obtaining informed consent of the subjects.

RESULT

The age range of the patients in this study is 24 to 70 years. In our study, 64.28% of those affected were males. Mean age was 50.80 years [Table 1]. In our study 25% of the patients were positive for HIV and 75% tested negative [Table 1]. Of those who tested positive 2 out of 7 (28.57%) were found to have HIV after they presented with OSSN. Mean age among HIV positive individuals was 32 years. Statistical analysis showed a significant association between a young patient with OSSN and HIV status (p-value=0.0051) This necessitates testing for the presence of HIV in any young patient presenting with OSSN. In our study, 6.28% of those affected were Males. This observation is also mentioned in other studies where males outnumbered females. Male gender may be a risk factor for higher preponderance as they are more commonly employed in professions involving outdoor work thereby leading to increased exposure to UV-B rays which is a known risk factor for development of OSSN. In a similar study done by Rohit Bang et al. the nodular variant was reported to be as high as 48% [14]. In this study 53.57% of the lesions are on the nasal side. According to a study done at Bascom Palmer Eye Institute 54% presented with nasal lesions [15]. In our study, 25% of the patients were positive for HIV and 75% tested negative. Mean age among HIV positive individuals was 32 years. Statistical analysis showed a significant association between a young patient with OSSN and HIV status.(p-value=0.0051) Out of 7 HIV positive cases 71.42% had SCC thereby indicating that HIV patients have a more aggressive form of OSSN compared to HIV negative patients. [16,17] In a study done by Tanuja G et al.,

| Parameters | No. |
|------------|-----|
| Mean age   | 50.80 |
| Male : Female | 1.8:1 |

| Site  |   |
|-------|---|
| Nasal | 16 |
| Temporal | 13 |

| Pathology |   |
|-----------|---|
| Non invasive | 18 |
| Invasive | 10 |

| HIV status |   |
|------------|---|
| Positive | 7 |
| Negative | 21 |

| Type |   |
|------|---|
| Nodular | 16 |
| Leukoplakic | 7 |
| Diffuse | 5 |

DISCUSSION

The age range of the patients in this study is 24 to 70 years and the mean age was 50.80 years. Mean age among HIV positive individuals was 32 years which necessitates testing for the presence of HIV in any young patient presenting with OSSN. In our study, 6.28% of those affected were Males. This observation is also mentioned in other studies where males outnumbered females. Male gender may be a risk factor for higher preponderance as they are more commonly employed in professions involving outdoor work thereby leading to increased exposure to UV-B rays which is a known risk factor for development of OSSN. In a similar study done by Rohit Bang et al. the nodular variant was reported to be as high as 48% [14]. In this study 53.57% of the lesions are on the nasal side. According to a study done at Bascom Palmer Eye Institute 54% presented with nasal lesions [15]. In our study, 25% of the patients were positive for HIV and 75% tested negative. Mean age among HIV positive individuals was 32 years. Statistical analysis showed a significant association between a young patient with OSSN and HIV status.(p-value=0.0051) Out of 7 HIV positive cases 71.42% had SCC thereby indicating that HIV patients have a more aggressive form of OSSN compared to HIV negative patients. [16,17] In a study done by Tanuja G et al.,
the mean age in HIV positive OSSN patients was 36 years and 29% of the patients with OSSN were HIV positive and OSSN was the only detectable manifestation of Underlying HIV infection [18]. In another study conducted in Malawi by Spitzer MS et al., which looked at the prevalence of HIV in patients with OSSN and found invasive disease in HIV positive cases [19].

CONCLUSION

Increased incidence of OSSN was observed in males and people with outdoor occupations. Nodular type of lesion is the commonest variety. HIV positive individuals have an increased incidence of OSSN with invasive characteristics.

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