Oral Submucous Fibrosis A Distressing Disease with Malignant Potential

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Introduction

Oral submucous fibrosis (OSMF) is a chronic progressive and irreversible disease affecting the oral, oropharyngeal and sometimes the esophageal mucous. OSMF is a disease that causes changes similar to those of systemic sclerosis (scleroderma) but limited to oral tissues. The disease is seen in those from Indian subcontinent and from many parts of South-East Asia such as Taiwan.

In their review, Pillai et al1 concluded that the etiology is unknown but is probably multifactorial. Main contributing factor as thought by Jayanthi et al2, is the use of pan which typically consists of areca nut, tobacco and crude lime wrapped in betel leaf. Experimentally, an alkaloid component of the areca nut, “Arecoline” can induce fibroblast proliferation and collagen synthesis and may penetrate the oral mucosa to cause progressive cross linking of collagen Fibres 3,4. Tobacco chewing and smoking are not considered to play a role in the development of this disease. In this study we tried to analyze various clinico pathological aspect of the oral submucous fibrosis including the natural course of the disease.

Material and Methods

The present study was conducted over a period of one year. Study included 58 patients of OSMF, attending ENT Department of J.N. Medical College, Aligarh. Patients complaints were noted, history of chewing pan, pan masala, gutkha and areca nut with frequency and duration of use obtained in detail and thorough ENT checkups were done, with special attention being paid to ulceration of mucosa, white fibrotic bands and extent of lesion causing difficulty in opening mouth as well as in protrusion of tongue.

Ear was examined for the state of tympanic membrane. Anterior and posterior rhinoscopy was performed to rule out nasal pathology. Biopsy of the lesion involving oral mucosa (e.g. soft palate/buccal mucosa) was taken, fixed in 10% neutral formalin, processed and stained with H and E stain. Histopathology was done to see the status of mucosa, avascular subepithelial connective tissue in most of the cases. With the use of Van Gieson’s stain, similar to the observations made by Sirsat and Khandolkar5.

Mobility of tympanic membrane was found to be decreased in 6 cases, perforation was observed in 5 cases. Rest of the ears were found to be normal.

Histopathology was done to see the status of mucosa, subepithelial zone, muscle and vasculature. Examinations revealed subepithelial fibrosis in all the specimens, though the degree of fibrosis varied. Table 1 is showing various other histopathological changes in the biopsy specimens. Partial response to local and the systemic treatment was observed in 75% of the cases. Ulceration and intolerance to spicy foods was improved. While trismus and dysphagia partly improved in 70% of the cases.

Discussion

The hospital based prevalence of oral submucous fibrosis patients in our study was about 3.5 per 1000 patients attending ENT OPD, slightly higher than that reported by Murti et al 5 possibly because of increase in use of Pan Masala (Gutkha) in recent times. Mostly the patients belonged to 3rd and 2nd decade due to increase in the habits of chewing of pan, betel nut and pan masala (gutkha) in this age group. The results of this study shows that chronic irritation caused by chewing of pan, betel nut, pan masala, tobacco and other habits like smoking, excessive use of chillies/spices can lead to fibrotic changes in oral mucosa similar to the observations made by Sirsat and Khandolkar6.

Histopathology showed thinned out mucosa and thickened avascular subepithelial connective tissue in most of the cases. With the use of Van Gieson’s Stain, similar to the findings of Hanner et al6, we noticed that in contrast to collagen in normal buccal mucosa, which exhibits an undulated bundular pattern, thickened collagen present in
OSMF was quite amorphous, nonbundular, hyalinized and stained a faint grayish pink rather than the customary deep red when stained with this method. It is this dense fibrosis involving the tissues around the Pterygomandibular raphe that caused varying degree of trismus. In our study though the partial response to treatment was observed, a close regular follow up is required in most cases as the fibrosis often recurs and disease carries malignant potential. Management of OSMF is only palliative and does little to prevent the progressive nature of the disease as well as its malignant potential. Therefore, it has been concluded that most important measure is prevention, and that the use of pan/gutkha/pan masala should be forbidden in patients.

References

Table I. Histopathological Changes in the Biopsy Specimens of Soft Palate in 58 Patients with Oral Submucous Fibrosis.

<table>
<thead>
<tr>
<th>Fibrosis</th>
<th>Muscle changes*</th>
<th>Dysplasia</th>
<th>Chronic inflammation (Mainly lymphocytes)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mild</td>
<td>Moderate</td>
<td>Severe</td>
</tr>
<tr>
<td>Number</td>
<td>12</td>
<td>36</td>
<td>6</td>
</tr>
<tr>
<td>Percentage</td>
<td>26.9%</td>
<td>62.0%</td>
<td>10.4%</td>
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</tbody>
</table>

*Few tissue sections reveal mixed picture of atrophy of muscle fibres, loss of cross striations and/or edema of muscle fibres.