

OE SOPHAGEAL CHANGES IN ORAL SUBMUCOUS FIBROSIS USING FIBREOPTIC ENDOSCOPY - A PILOT STUDY

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ABSTRACT

Thirty patients with oral submucous fibrosis (OSMF) underwent fibreoptic upper G.I. endoscopy and oesophageal biopsy from 20 cms to see if any correlation is found between visual and histological changes in OSMF and oesophageal mucosa. On endoscopy, the colour of oesophageal mucosa was normal in 28 and whitish pale in 2 cases. On endoscopy mucosa felt stiff and fibrotic in 19, leathery in 4, firm/gritty in 2 and normal in 5 cases. The biopsies were difficult to take in most cases yielding small tissue samples on repeated attempts. On histology most of the samples consisted of only a few layers of hyperplastic epithelium with lamina propria and submucosa being absent in all samples. Good correlation was found between the grade of OSMF and oesophageal changes seen on endoscopy (JPMA41: 312,1991).

INTRODUCTION

Oral submucous fibrosis (OSMF) is a chronic disease characterised by stiffening of oral mucosa leading to limitation of opening the mouth¹. This is largely due to fibroelastic changes resulting in transformation of the Juxtaepithelial layer and accumulation of collagen in lamina propria². Other characteristic features of this disease include palpable fibrous bands in lips, buccal mucosa, soft palate and contraction of uvula. In advanced stages widespread involvement of oral cavity is reported with varying degrees of fibrosis at different sites. Hypomobility of the tongue due to fibrosis of the floor of the mouth is often noted with the progression of disease. Histologically epithelial atrophy alongwith hyalinisation of juxtaepithelial layers and increased collagen accumulation in submucosa are pathognomonic diagnostic features³; The disease is reported mostly in the Indian subcontinent⁴⁻⁶ with some sporadic cases among Indian migrants living in United Kingdom⁷, South Africa⁷ and other parts of the world⁸. Of the various etiological agents associated with OSMF, arecoline, an alkaloid present in Arecanut (Arecca catechu) has recently been implicated as the major risk factor⁹⁻¹¹. Since fibrosis is known to extend beyond the oral cavity, this study was done to determine the extent of involvement of the oesophagus, by means of fibreoptic endoscopy and biopsies to correlate changes in the oesophagus with those described in the mouth.

PATIENTS AND METHODS

Patients attending the Dental department with clinical signs and symptoms of OSMF, confirmed histologically had upper G.I. endoscopy done to see the changes in the oesophagus. Patients whose interincisal opening was between 7 mm or less were excluded from the study because of the inability to pass the mouth guard for endoscopy. A thorough clinical examination of the oral cavity was carried out by

one of us (RM) to assess the severity of oral changes. Upper gastrointestinal endoscopy was done after an overnight fast. No sedation was used. Olympus GIF-P2 fiberoptic endoscope was used following 4% Xylocaine topical anaesthesia. The gastrointestinal tract was examined until the second part of the duodenum. The oesophagus was especially examined for changes in colour, motility, consistency, fibrous bands and any other lesions. Biopsies taken at 20 cms from all subjects, were fixed in 10% formaline and sections were prepared following routine processing in paraffin wax and stained with H&E

RESULTS

Thirty patients with OSMF were examined of whom 21 were females and 9 males. Their ages ranged from 10 to 50 years with a mean age of 29.5 years. Ethnically 17 patients belonged to the community migrated from India, 2 were Memons from Karachi, 4 Sindhis, 4 Balochis and 1 Pa.

TABLE I. Chewing and smoking habits

	Total No.	Quantity per day			Duration in years		
		5	5-10	10	5	5-10	10
Areca nut alone	16	13	2	1	12	2	2
Pan + Tobacco + Areca nut	11	4	6	1	4	3	4
Smoking + Areca nut + Pan + Tobacco	2	1	1	.	.	2	.
Areca nut + Smoking	1	1	.	.	.	1	.

More than one habit observed in 4 persons with varying quantity and duration.

Table I shows the chewing and smoking habits of the patients. All gave history of chewing areca nut with pan or using commercially available sweet packets containing areca nut. The duration between starting this habit and onset of disease was variable. The severity of oral submucous fibrosis was categorised in 3 groups according to the extent of involvement and clinical appearance'. Grade 1 was early changed with blanched mucosa and fibrous bands in the posterior buccal area and contracted uvula. Grade II comprised of fibrous bands and some leathery mucosa, blanched to white colour and with involvement of most of buccal mucosa, soft palate, hard palate and fibrous bands in the lips. The group with white discoloration, leathery consistency and involvement of whole buccal, palatal, lips, floor of mouth and tongue were labelled as Grade III. On endoscopic examination the colour of oesophageal mucosa was normal in 28 cases and white in 2 cases. The predominant endoscopic changes noted in the oesophagus were described as stiff and fibrotic in 21, leathery in 4, and normal in 5 cases. The biopsy were easily taken in 2 cases; in the remainder the endoscopist experienced "resistance" in 17 and "difficult to biopsy" in 8 subjects. This manifested as slipping of the biopsy forceps during cutting a good 'bite' not being possible due to fibrosis of the oesophagus. Correlation of oral features with oesophageal findings are given in Table II.

TABLE II. Correlation of oral features with oesophageal findings

Oesophageal mucosal finding		Oral mucosal findings graded according to severity		
		Grade I n= 11	Grade II n= 10	Grade III n= 9
Colour	Normal	11	9	8
	Pale	-	-	-
	White	-	1	1
Feel	Normal	5	-	-
	Fibrotic	5	9	7
	Leathery	1	1	2
Biopsy	Normal	5	-	-
	Resistant	2	8	7
	Difficult	4	2	2

The biopsy material was inadequate for any systematic analysis, histological examination was therefore limited. All specimens were reported to consist of few layers of epithelium, neither lamina propria nor submucosa being present in any of the specimens. Only one specimen was reported as normal while in all others histology de scribed presence of stratified squamous epithelial hyperplasia, oedema and flattening of basal cells.

DISCUSSION

This is the first report on fibreoptic endoscopic findings of oesophageal mucosa in OSMF. The consistency of oesophageal mucosa was mostly similar to that of oral mucosa. Difficulty in obtaining the adequate oesophageal mucosal biopsy during endoscopy and peeling of the epithelium without submucosa tends to confirm fibrosis of juxtaepithelial region as in the oral mucosa. From these findings the disease appears not to belocalised to the oral cavity but extends at least to upper part of gastrointestinal tract. This involvement seems logical as arecanut chewing habit was present in all patients and in the process of chewing, the extract is swallowed and only solids spat out. In this study involvement of oesophagus was reflected in superficial biopsy samples taken at 20 cm level. The stomach was also examined but no changes related to OSMF were noted. In our experience, the fibreoptic endoscopy is convenient method to examine the extent of involvement of upper G.I.T. in OSMF procedure is fairly well tolerated by a conscious patient, No untoward reaction were noted in the study. However, difficulty was experienced in taking adequate specimens for histological examination, which could only be attributed to fibrotic changes in the lining of the oesophagus, we proposed to carry out rigid endoscopy through which a representative biopsy sample could be taken for further investigations.

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