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內文：

Introduction

1. Oral submucous fibrosis is an insidious, precancerous, chronic disease that may affect the entire oral cavity and sometimes extends to the pharynx.
2. Although it is occasionally preceded by formation of vesicles, it is always associated with sub-epithelial inflammatory reaction that is followed by fibroelastic change of the lamina propria with epithelial atrophy.
3. OSMF leads to progressive limitation in the opening of the mouth and protrusion of the tongue, thus causing difficulty in eating, swallowing, and phonation.
4. Betel nut or tobacco that is chewed or kept in the mouth will go down the esophagus, leading to irritation of the esophageal mucosa, which is similar to that of the oral cavity.

Materials and methods

1. 30 cases of clinically- and histopathologically-diagnosed OSMF
20 cases of normal individuals as the control group.
2. To reduce the statistical error, all patients previously diagnosed with systemic diseases, such as hypertension, diabetes mellitus, anemic stomatitis, and scleroderma, and other diseases, including radiation fibrosis, were excluded from our study.
3. The clinical and functional staging of OSMF was done according to Haider et al

Clinical stage

1. Faucial bands only
 2. Faucial and buccal bands
 3. Faucial, buccal, and labial bands
-

Functional stage

- A Mouth opening \geq 20 mm
 - B Mouth opening 11–19 mm
 - C Mouth opening \leq 10 mm
-

4. All patients underwent upper gastrointestinal endoscopy using an Olympus GIF



Type II endoscope with a video camera and biopsied from esophagus.

lower esophagus (37–42 cm from incisors)

mid-esophagus (30–36 cm from incisors)

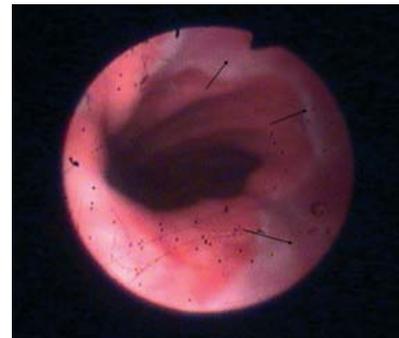
upper esophagus (20 cm onwards from incisors)

Results

- Controls
 - None of the patients showed any esophageal abnormality upon endoscopy.
 - Histopathologically, no abnormalities were seen in the esophageal biopsies.
- Patients
 - Clinical features
 - 28 (93.3%) had burning sensation to spicy food
 - 21 (70%) had difficulty in mouth opening
 - 9 (30%) had difficulty swallowing.
 - Visual esophageal endoscopic changes (blanching) in the clinical stages of OMSF

Table 1. Visual esophageal endoscopic changes (blanching) in parts of the esophagus in the clinical stages of oral submucous fibrosis

Clinical stage (n = 30)	Part of esophagus	No. cases (%)	
		Normal	Blanching
2 (n = 19)	Upper third	7 (36.7)	12 (63.3)
	Middle third	8 (42.1)	11 (57.9)
	Lower third	13 (62.4)	6 (31.6)
3 (n = 11)	Upper third	3 (27.3)	8 (72.7)
	Middle third	6 (54.5)	5 (45.5)
	Lower third	6 (54.5)	5 (45.5)



- ✓ In most patients, blanching was found in the upper third of the esophagus, followed by the middle third and lower third in both clinical stages 2 and 3
- Esophageal histological changes in the clinical stages of OSMF

Table 2. Esophageal histological changes in parts of esophagus in the clinical stages of oral submucous fibrosis

Clinical stage (n = 30)	Part of esophagus	No. cases (%)				
		Normal	EE	HE	EE + MF	HE + MF
2 (n = 19)	Upper third	3 (15.7)	4 (21.1)	11 (57.9)	1 (5.3)	0 (0)
	Middle third	2 (10.5)	7 (36.8)	9 (47.4)	1 (5.3)	0 (0)
	Lower third	5 (26.3)	4 (21.1)	9 (47.4)	1 (5.3)	1 (5.3)
3 (n = 11)	Upper third	1 (9.1)	5 (45.5)	3 (27.2)	1 (9.1)	1 (9.1)
	Middle third	1 (9.1)	3 (27.2)	4 (36.4)	2 (18.2)	1 (9.1)
	Lower third	2 (18.2)	4 (36.3)	3 (27.2)	1 (9.1)	1 (9.1)

EE, edematous epithelium; HE, hyperplastic epithelium; MF, mild fibrosis.

- ✓ Most patients with only esophageal epithelial changes were seen in clinical stage 2, and most patients (3 [27.3%]) with both esophageal epithelial and

connective tissue changes were seen in clinical stage 3.

- ✓ Most fibrosis in patients was found in the middle third of the esophagus, followed by the lower third and upper third
- Visual esophageal endoscopic changes (blanching) in the functional stages of OSMF

Table 3. Visual esophageal endoscopic changes (blanching) in parts of the esophagus in the functional stages of oral submucous fibrosis

Functional stage (n = 30)	Part of esophagus	No. cases (%)	
		Normal	Blanching
A (n = 23)	Upper third	9 (39.2)	14 (60.8)
	Middle third	12 (52.2)	11 (47.8)
	Lower third	15 (65.3)	8 (34.7)
B (n = 6)	Upper third	1 (16.7)	5 (83.3)
	Middle third	2 (33.3)	4 (66.7)
	Lower third	4 (66.7)	2 (33.3)
C (n = 1)	Upper third	0 (0)	1 (100)
	Middle third	0 (0)	1 (100)
	Lower third	0 (0)	1 (100)

- ✓ most patients, blanching was found in upper third of the esophagus, followed by middle third and lower third in both functional stages A and B
- Esophageal histological changes in functional stages of OSMF

Table 4. Esophageal histological changes in parts of the esophagus in the functional stages of oral submucous fibrosis

Functional stage (n = 30)	Part of esophagus	No. cases (%)				
		Normal	EE	HE	EE + MF	HE + MF
A (n = 23)	Upper third	3 (13.1)	6 (26.1)	13 (56.5)	1 (4.3)	0 (0)
	Middle third	2 (8.7)	7 (30.4)	12 (52.2)	2 (8.7)	0 (0)
	Lower third	6 (26.1)	5 (21.8)	11 (47.8)	1 (4.3)	0 (0)
B (n = 6)	Upper third	1 (16.6)	3 (50.0)	1 (16.7)	1 (16.7)	0 (0)
	Middle third	1 (16.6)	3 (50.0)	1 (16.7)	1 (16.7)	0 (0)
	Lower third	1 (16.6)	3 (50.0)	1 (47.4)	1 (5.3)	0 (0)
C (n = 1)	Upper third	0 (0)	0 (0)	0 (0)	0 (0)	1 (100)
	Middle third	0 (0)	0 (0)	0 (0)	0 (0)	1 (100)
	Lower third	0 (0)	0 (0)	0 (0)	0 (0)	1 (100)

EE, edematous epithelium; HE, hyperplastic epithelium; MF, mild fibrosis.

- ✓ most patients (20 [87%]) with only epithelial changes found in functional stage A, and 100% of patients in functional stage C, showed both epithelial and connective tissue changes. Most
- ✓ fibrosis was found in the middle third of the esophagus, followed by lower third and upper third

Discussion

1. Esophageal involvement was more common in patients who had consumed betel nut, tobacco, pan masala, or Gutka with or without betel leaf for longer periods
2. Blanching was found in the upper third of the esophagus, followed by the middle third and lower third. This would be because of more irritation of the upper esophagus than other parts, as it would come into contact early when Gutka or tobacco or their juice is swallowed.

3. As the mouth opening decreases, the extent of esophageal fibrosis also increases, so there is an inverse relationship between the opening of the mouth and esophageal fibrosis.
4. The association between the clinical and functional stages of OSMF and the visual and histological esophageal changes was not statistically significant.

題號	題目
1	Which the most commonly affected sites about oral submucous fibrosis is false? (A) Buccal mucosa (B) Retromolar area (C) Soft palate (D) Uvula
答案(D)	出處：Oral and Mxillofacial Pathology 3 rd edition
題號	題目
2	Which one cannot be regarded as the precancerous condition? (A) Oral submucous fibrosis (B) Betel chewer' s mucosa (C) Leukoplakia (D) Farmer' s lip
答案(A)	出處：Oral and Mxillofacial Pathology 3rd edition