

II. EXAMINATION TECHNIQUE OF THE MOUTH AND TOPOGRAPHY OF THE ORAL MUCOSA

Introduction

Years of experience in training dentists and other oral health professionals in the detection of oral cancer and precancerous lesions has indicated that false negative diagnosis (missed diagnosis) and other diagnostic errors are often due to an inappropriate examination procedure. A thorough and systematic examination of the oral mucosa forms an integral part of the training for detection of these lesions. In addition to the examination procedure, recording of lesions according to well-defined topographical land marks in a standardized format is recommended in day-to-day practice and certainly, for examiners conducting a study.

Examination technique of the oral mucosa

Steps for a simple, methodical and thorough examination of the mouth that was used to conduct about 800,000 oral examinations over a 27-year period for research on oral cancer and precancer in India is described here. With little practice, using this method, oral examination can be performed in an easy flowing action.

Two basic requisites for an appropriate examination procedure of the oral mucosa are: (i) examination of the patient from a standard height with the patient comfortably seated facing adequate light; and, (ii) proper Retraction of the oral tissues with two mouth

mirrors. In field conditions, instead of mouth mirrors, two wooden disposable spatulas can be used.

Position for examination: Stand facing the patient slightly towards his or her right side (Fig. 1). This position allows maximum light on the oral tissues without any shadows. While examining in natural light, do not seat the patient directly facing the sun.



Fig. 1. Position of the patient and the examiner.

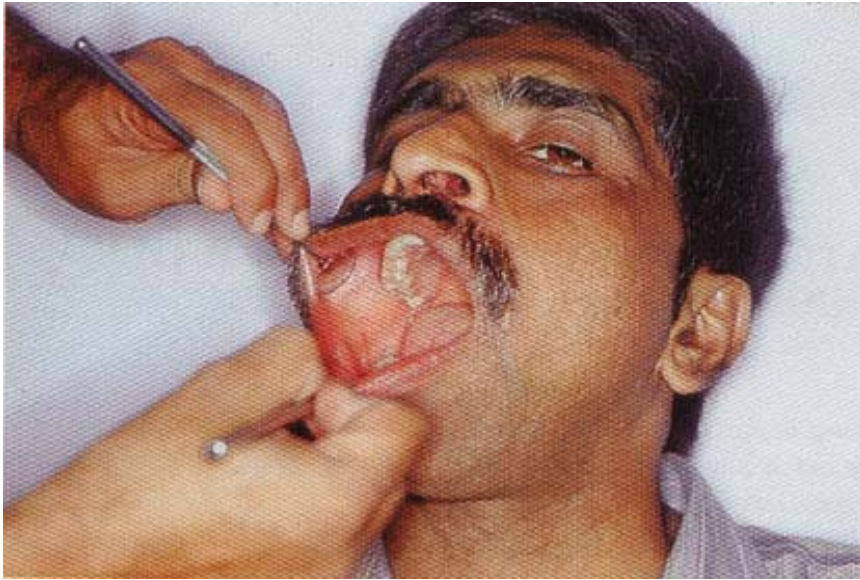


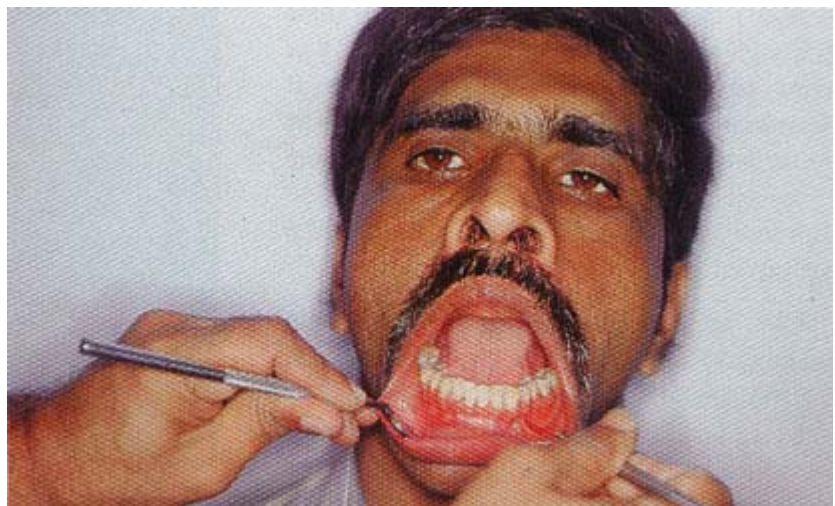
Fig. 2. Retraction of the commissure and the right buccal mucosa.

Make a note of any swelling, extraoral growths, ulcerations or other abnormalities on the face and the neck region. As these changes may be due to intraoral abnormalities, their diagnosis should be made in conjunction with the findings from intraoral examination. Inspect the vermilion borders of the lips, with the mouth of the patient in

the closed, as well as in a slightly open position.

Retraction of the labial commissure and the buccal mucosa: Prior to intraoral examination, ask the patient to remove artificial dentures, if any. Instruct the patient to open the mouth wide and keep it in a slightly lax position. Hold the mirrors at the

Fig.3. Retraction of the lower labial mucosa.



lower-third of the handles in a pen-grip. The flat surface of the mirror in the left hand should be placed on the upper part of the buccal mucosa near the buccal groove. The mirror in the right hand should be positioned in the lower part of the buccal mucosa near the mandibular groove. Keeping the patient's head steady, retract the buccal mucosa gently outwards. Inspect the retromolar area, buccal mucosa, sulci, gingiva and then the commissure (Fig. 2).

Retraction of the labial mucosa: After examining the right buccal mucosa, draw the flat surface of the mirror in the left hand to the left corner of the mouth. Move the mirror in the right hand to the right corner of the mouth. Gently pull the lower labial mucosa forward (Fig. 3).

Left buccal mucosa: After examining the lower labial mucosa, move the mirror in the right hand slightly posteriorly and transfer the one in the left hand to the upper buccal

groove. Retract the left buccal mucosa and examine the region from the commissure to the retromolar area (Fig. 4).

Upper labial mucosa: Modifying the procedure used to retract the lower labial mucosa, gently pull the upper labial mucosa slightly upwards and examine it (Fig. 5).

Examination of the tongue and floor of the mouth: Instruct the patient to protrude the tongue and examine its tip and the dorsal surface. Retract the right corner of the mouth with the mirror in the left hand. Instruct the patient to move the tip of the tongue towards the left corner and keep the tongue in a lax position. Use the second mirror to steady the tongue and examine its right margin (Fig. 6). Reversing the procedure, examine the left margin of the tongue. Ask the patient to move the tongue upwards and examine the ventral surface, and the floor of the mouth.

Fig.4. Retraction of the left buccal Mucosa.

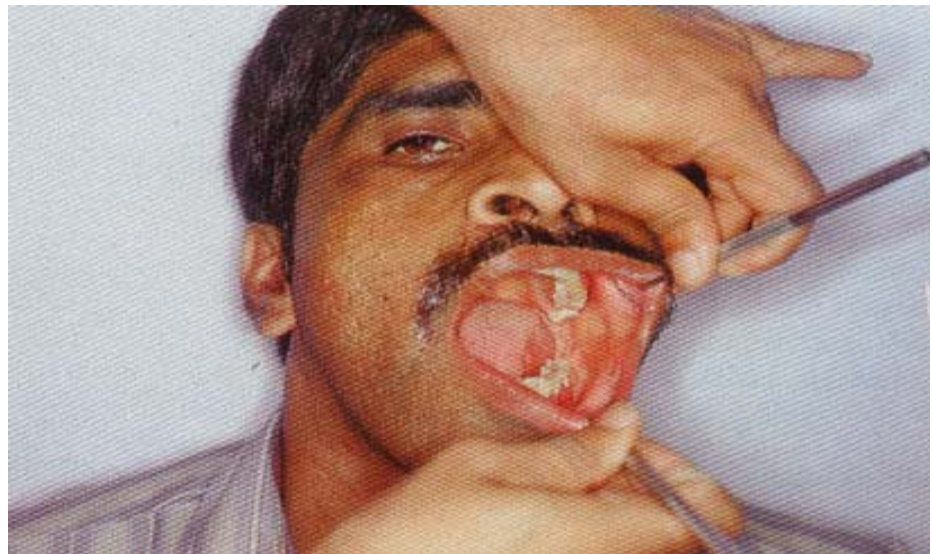




Fig. 5. Retraction of the upper lip

Examination of the palate: Tilt the patient's head slightly upwards and examine the hard and the soft palate and the uvula (Fig. 7).

Examine the gingiva, alveolar mucosa, alveolar ridge, and teeth in the corresponding regions at each step.

Topography of the oral mucosa

Lip (vermillion border): An elliptical strip of mucosa that extends from one corner of the mouth to the other along the mucocutaneous border to the point of contact between the two lips. This region can easily be understood as the lipstick area.

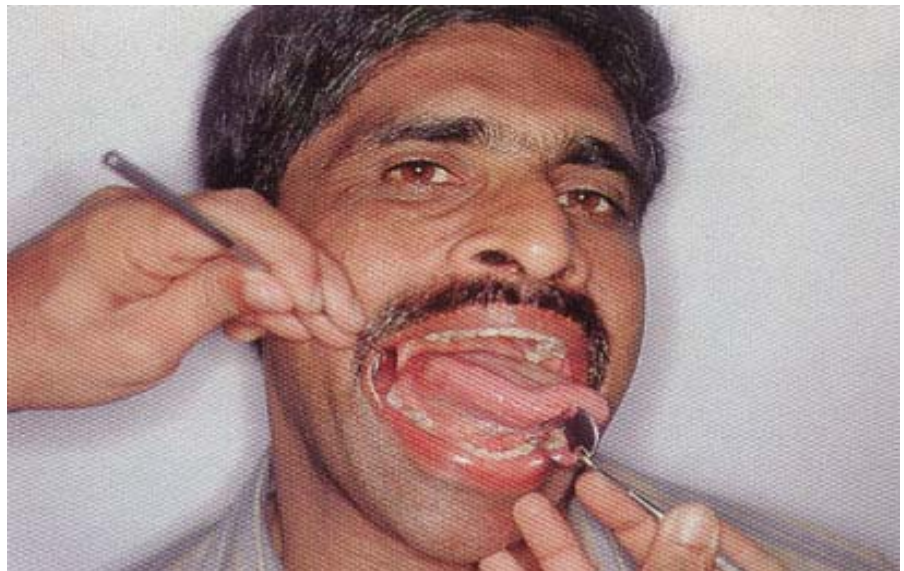
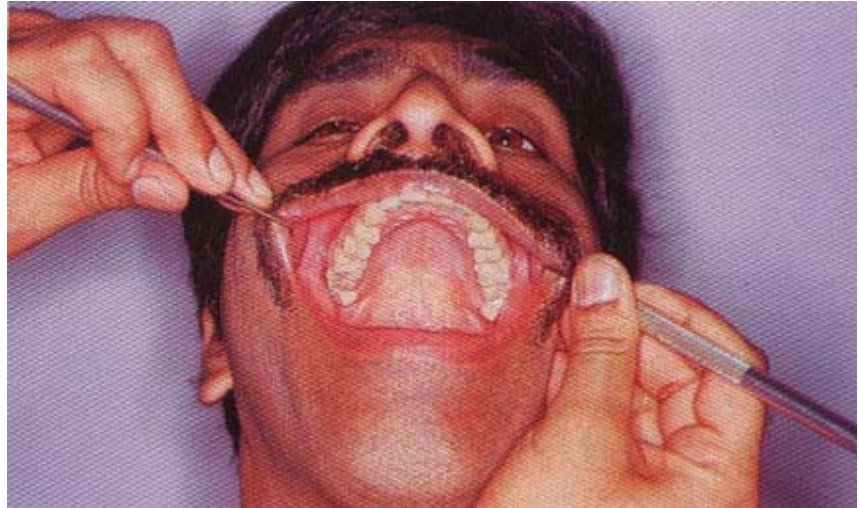


Fig.6. Examination of the right Margin of the tongue.

Fig. 7. Examination of the palate.



Labial mucosa: A rectangular strip of mucosa starting along the point of contact of the upper and the lower lips between the two corners of the mouth extending to the distal region of the canine down/up to 1 cm from the deepest part of the labial sulcus.

Labial commissure: A 1.5 cm² mucosal area distal to the corner of the mouth.

The buccal mucosa: The buccal mucosa consists of a broad extent of the oral mucosa that lies between the upper and the lower buccal sulci and the retromolar area posteriorly, excluding the commissures anteriorly.

Upper buccal groove: A rectangular area posterior to the distal surface of the canine teeth, extending up to the anterior tonsillar pillar. It is bound laterally by the buccal mucosa, medially by the alveolar mucosa and its floor is formed by the muco-gingival reflection up to 1.5 cm above its deepest part.

Tongue: The topography of the tongue is further divided into:

Posterior one-third, i.e., Base of the tongue: A rectangular area lying posterior to the terminal sulcus and between the two anterior tonsillar pillars.

Anterior two-third - Dorsum: This area includes the portion extending anteriorly to the terminal sulcus, including the mucosa between the margins, but excluding the tip.

Tip of the tongue: A circular area with a radius of 1 cm with the center at the tip of the tongue.

Lateral margins: A rectangular area starting 1 cm posterior to the tip of the tongue, extending back to the anterior tonsillar pillar, and covering 1 cm of the dorsal and ventral surfaces at the edges of the tongue.

Ventral surface: A triangular area extending from the reflection of the tongue, it follows the midline to 1 cm posterior to the tip of the

tongue, and following an imaginary line lying 1 cm from the lateral margin of the tongue.

Hard palate: A triangular area between the junction of the horizontal and vertical parts of the palate, the midline, and the junction of the hard and the soft palates which corresponds to an imaginary line drawn connecting the two distal surfaces of the last molar teeth.

Soft palate: A rectangular area posterior to the junction of the hard and the soft palates, between the anterior tonsillar pillars.

Floor of the mouth: A triangular area between the lingual muco-gingival reflection and the reflection of the tongue.

Gingiva: This area includes the free and attached gingiva of the mandibular and maxillary teeth on the labial/buccal and the lingual/palatal aspects.

Alveolar ridge: Oral mucosa covering edentulous mandibular and maxillary ridges.