

Clefts are also associated with maternal smoking and use of certain drugs like phenytoin, steroids, diazepam, retinoic acid and folate antagonists in pregnancy. Vitamin supplementation in first 4 months of gestation has shown protective effects.

#### **What is the incidence and prevalence pattern of cleft lip and palate (Figs 1.2 and 1.3)?**

Cleft lip is a fairly common congenital defect with an incidence of 1 in 500 to 1 in 1500, exhibiting



**Fig. 1.2:** Unilateral cleft lip



**Fig. 1.3:** Isolated cleft palate

racial differences likely resulting from differences in facial tissue thickness. It is more common on the left side. In India, the incidence is nearly 1 in 800 live births. Isolated cleft palate occurs in 1 in 1000 live births. Isolated cleft lip occurs in 15% (left more common than right 3:2) of the cases, cleft lip and palate combined in 45% (more common in males) and isolated cleft palate in 40% (more common in females) of the cases.

#### **What are the anatomical abbreviations in cleft defects?**

Anatomical defects in cleft lip are centred around the three muscular rings of Delaire, namely the nasolabial muscle ring which circumvents the nasal aperture, the labiomental muscular ring which is present around the lower lip and chin and the bilabial muscle ring around the oral aperture.

In unilateral cleft lip nasolabial and bilabial muscle rings are disrupted on one side leading to the displacement of nasal skin onto the lip along with retraction of the nasal skin, whereas in bilateral cleft lip, muscle rings on both the sides are disrupted leading to a protusive premaxilla and prolabium along with flaring of the nose.

The palate is formed in two stages, namely the primary palate and secondary palate. The primary palate consists of the structures anterior to the incisive foramen including the alveolus, premaxilla and upper four incisors. The secondary palate includes structures which lie behind the incisive foramen. The soft palate consists of muscles, namely tensor palati, levator palati, palatopharyngeus, palatoglossus, and musculus uvulae which are oriented transversely in a normal palate. In the presence of cleft palate the orientation becomes anteroposterior and the muscles are inserted into the posterior edge of the hard palate. When the defect is complete the nasal septum and vomer bone are completely separate from the palatine processes. In an incomplete cleft palate the palate remains attached to the nasal septum and vomer but the palatine processes fail to fuse in the midline.

#### **How will you manage of a case of cleft lip and palate?**

Management of the condition depends upon the time at which it is diagnosed. In the antenatal period diagnosis by antenatal ultrasound is possible which will help to prognosticate parents,

## AJCC Stage Groupings

Stage 0: Tis, N0, M0

Stage I: T1, N0, M0

Stage II: T2, N0, M0

Stage III: T3, N0, M0; T1, N1, M0; T2, N1, M0; T3, N1, M0

Stage IVA: T4, N0, M0; T4, N1, M0; Any T, N2, M0

Stage IVB: Any T, N3, M0

Stage IVC: Any T, Any N, M1

## 9. How do these tumours spread?

1. *Local spread*: Local spread to adjacent structures like soft tissue, bones, neurovascular structures.
2. *Lymph nodes spread*: First halt is lymph nodes in the supraomohyoid triangle.
3. Distant metastasis is rare and occurs in advanced cases or in recurrent cases. They generally occur in lungs or bones.

## 10. How does mandible get involved in oral cavity carcinoma?

It generally starts through dental socket or through dental pulp and reaches the root of tooth. From root of tooth cancellous portion of mandible is involved. After this spread occurs through mandibular canal.

## 11. What are the various clinical features?

- a. Indurated ulcer in the floor of mouth that bleeds on touch lasting for more than 4 weeks.
- b. Non-healing ulcer for more than 4 weeks
- c. Slurring of speech
- d. Tooth extraction socket that fails to heal
- e. Persistent gingival inflammation
- f. Loosening of tooth
- g. Trismus or ankylosis
- h. Pain is a late feature
- i. Orocutaneous fistula
- j. Lymph nodes in the neck
- k. Weight loss
- l. Painless neck lump

## How is preoperative clinical examination in a case of oral cavity carcinoma done?

1. Complete examination of oral cavity along with status of oral hygiene and teeth.
2. Presence of precancerous lesions like sub-mucous fibrosis and leucoplakia is noted.
3. Tumour itself is described in detail, e.g. size of tumour, type (ulcerative, proliferative or

infiltrative), involvement of adjacent structures, e.g. skin, bone, lymph nodes, trismus are all documented. (Transoral bidital examination).

4. Neck is carefully examined for lymph node enlargement.

## What are the investigations needed in case of oral cavity cancer?

1. Punch biopsy from primary lesion and fine needle aspiration cytology from palpable lymph nodes. If the lesion appears to be verrucous type, then a biopsy by knife needs to be taken.
2. Imaging: Oblique and occlusive views of the mandible and ortho-pantogram (OPG) to rule out mandible involvement specially antral or alveolar involvement. CT scan is useful in doubtful cases of mandible involvement or to rule out extension of disease in infra-temporal fossa. Indications of CT are:
  - a. Patient with trismus.
  - b. For antral tumours.
  - c. Assessment of pterygoid fossa
  - d. To evaluate metastatic disease of neck
  - e. Clinically negative neck
  - f. Patients with large nodes

Abdominal ultrasonography is done to rule out liver metastasis. Chest X-ray is done for pulmonary metastasis.

MRI is useful in knowing the extent of soft tissue involvement or perineural involvement.

## What are the treatment options in patients of oral cancer?

- Surgery alone
- Radiation therapy alone
- Combination of these.

## Stagewise Treatment

*Treatment for T1 and T2 lesions*: Surgery and radiotherapy give equally good results. Any of the two methods can be utilised. Combined modality is not necessary. Choice of treatment depends upon skill and experience of clinician treating the case and the facilities available at the institution.

**Radiotherapy (RT)**: Prior to starting radiotherapy all broken and loose teeth need to be removed and wound after teeth removal should be allowed to heal. Broken teeth should be removed before RT as the teeth become brittle after RT and there are chances of osteonecrosis of the

**Intra-oral inspection** includes assessment of the duct orifices and possible obstructions. The proper lighting with a headlight should always be used when inspecting within the oral cavity and pharynx. Following points should be noted during intra-oral examination:

- A. The openings of Stensen's and Wharton's ducts can be inspected intra-orally opposite the second upper molar and at the root of the tongue, respectively.
- B. Drying off the mucosa around the ducts with an air blower and then pressing on the corresponding glands will allow the examiner to assess the flow or lack of flow of saliva.
- C. Sialolithiasis can sometimes be found by careful intraoral palpation.
- D. Dental hygiene and the presence of periodontal disease should also be noted since deficient oral maintenance is a major predisposing factor to various infectious diseases.
- E. Bimanual assessment should be performed whenever possible with the palmar aspect of the fingertips to determine the presence of deep lobe.
- F. If the tonsil is shifted towards mid-line, it also indicates involvement of deep lobe.

**What is the differential diagnosis of parotid swelling (non-parotid causes)?**

- a. Hypertrophy of masseter muscle
- b. Dental cyst
- c. Branchial cyst
- d. Myxoma of masseter
- e. Neuroma of facial nerve
- f. Temporal artery aneurysm
- g. Mandibular tumour
- h. Mastoiditis
- i. Parotid lymphadenitis
- j. Subaceous cyst

**Discuss aetiology of parotid enlargement.**

Parotid enlargement can be due to the following etiology:

1. Congenital
2. Infective
3. Inflammatory
4. Lympho-epithelial conditions
5. Neoplastic

*Common conditions giving rise to parotid enlargement are:*

Acute infectious disorders which can be due to:

- Bacterial or viral aetiology
- Actinomycosis
- Chronic granulomatous disease like tuberculosis or sarcoidosis
- Tuberculosis
- Chronic viral infection
  - HIV-SGD
  - Hepatitis
  - CMV infection
- Metabolic disorders
  - Sjögren's syndrome
  - Thyroid disease
  - Diabetes (uncontrolled)
  - Alcoholism
  - Malnutrition
  - Eating disorders (anorexia, bulimia)

**Classification of salivary gland tumours (WHO classification 1991, simplified)**

- Adenoma
  - Pleomorphic adenoma
  - Warthin tumour
- Carcinoma
  - Acinic cell tumour
  - Mucoepidermoid carcinoma
  - Adenoid cystic carcinoma
  - Adenocarcinoma
  - Squamous cell carcinoma
  - Undifferentiated carcinoma
  - Carcinoma in pleomorphic adenoma
- Non-epithelial tumours
  - Hemangioma
  - Lymphangioma
  - Neurofibroma
  - Neurilemoma
- Malignant lymphoma
- Unclassified and allied conditions

**What are causes of bilateral parotid enlargement?**

- a. Acute which is less than 3 weeks duration.
- b. Chronic which is more than 3 weeks duration.

- c. The Kocher's test is used to detect tracheomalacia or tracheal obstruction. The slight push on lateral lobes will produce stridor. However, this test is mentioned to condemn as it can cause acute respiratory distress due to collapse of tracheal rings by pressure of examiners finger.

#### **What thyroid conditions give rise to tracheal obstruction?**

- a. Thyroid malignancy directly infiltrating into the lumen of trachea especially anaplastic carcinoma.
- b. Retrosternal goitre
- c. Long standing multi-nodular goitre giving rise to atrophy of tracheal rings
- d. Riedel's thyroiditis

#### **What is the consistency of normally thyroid gland and in various other conditions?**

The consistency of normal thyroid gland is described as rubbery. In patients with Graves' disease thyroid gland feels softer than normal and is typically described as spongy and malleable. In Riedel's thyroiditis there is woody consistency. In malignancy and lymphoma the consistency is stony hard. Hard consistency can also be seen in calcification of nodule and haemorrhage into a nodule. Hashimoto's glands are firmer in consistency due to extensive fibrosis.

#### **What is the accuracy of clinical examination in palpating nodules?**

Only 6% of nodules less than 0.5 cm are palpable and about 50% of nodules more than 2 cm diameter are reliably detected by experienced examiner.

#### **What are the signs of toxicity of goitre on clinical examination? (Rule of T)**

Signs of toxicity in a goitre are following:

- a. Tachycardia especially increased sleeping pulse rate
- b. Tremors in the hands or tongue. These are fine tremors.
- c. Thrill (bruit) over the goitre.
- d. Toxic eye signs

#### **What is Delphian node?**

The Delphian node drains the thyroid gland and larynx. It lies anterior to the cricothyroid ligament

just above the isthmus. The word Delphian refers to the ancient Greek "Delphi". Delphi was the site of the Delphic oracle, the most important oracle in the classical Greek world, and it was a major site for the worship of the God Apollo. The node is called "Delphian" because it is the first lymph node of the anterior neck structures exposed in surgery. It often heralds thyroid carcinoma, just as the oracle at Delphi in ancient Greek mythology foretold the future. Involvement of this node is the earliest sign of metastatic papillary carcinoma. It may also be enlarged in laryngeal cancer, subacute granulomatous thyroiditis, Graves' disease and rarely in Hashimoto's thyroiditis.

#### **What are different methods to ascertain the possibility of retrosternal extension?**

The retrosternal extension on clinical examination can be ascertained by following methods:

- a. Inability to feel the lower border of thyroid or lower border only palpable at the peak of deglutition.
- b. Dullness on percussion of manubrium sterni.
- c. Positive Pemberton sign: The sign named after Hugh Spear Pemberton, an English physician (1890–1956) was described in a brief communication in the Lancet in 1946. Pemberton's sign is defined as the development of facial plethora, cyanosis, and distension of neck veins while raising both arms simultaneously. A positive test indicates thoracic inlet obstruction. This sign was originally described in patients with retrosternal goitre, but may also be seen in lung carcinoma, lymphomas, thymomas, dermoid cysts, or aortic aneurysms.
- d. *How to perform Pemberton's test:* Have your patient hold his arms above his head, with elbows touching his ears. A negative Pemberton's sign occurs when nothing happens for three minutes. A positive sign is a sensation of stuffiness, dizziness, congestion, or a "funny feeling" in the head. The face can become dusky as well. When the arms rise anteroposterior diameter of thoracic inlet decreases as the thoracic inlet get raised by bilateral contraction of sternal heads of sternocleidomastoid muscles, and, if a retrosternal goitre or other similar enlargement is present, obstruction can occur.