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# CLEFT LIP AND CLEFT PALATE

SL. NO	TIME	SPECIFIC OBJECTIVE	CONTENT	TEACHER\ LEARNERS ACTIVITY	AV AIDS	EVALUATION
1.	2 mins	introduce about cleft lip and cleft palate	<p><b>INTRODUCTION:</b></p> <p>A cleft lip and palate is a type of birth defect that affects the upper lip and the roof of the palate. If the tissue in the developing mouth and the palate don't fuse together, a baby could be born with a condition called cleft lip or cleft palate.</p> <p>Facial clefting is the second most common congenital deformity. Affects 1 in 750 births.</p>	Introducing\ Listening	L C D	What is meant by cleft lip and cleft palate?
2.	2 mins	list out the problems of cleft lip and cleft palate	<p><b>PROBLEMS:</b></p> <ul style="list-style-type: none"> <li>✓ Cosmetic</li> <li>✓ Dental</li> <li>✓ Speech</li> <li>✓ Swallowing</li> <li>✓ Hearing</li> </ul>	List outing\ Taking notes	L C D	What are the problems of cleft lip and cleft palate?

3.	7 mins	explain the anatomy of cleft lip and cleft palate	<ul style="list-style-type: none"> <li>✓ Facial growth</li> <li>✓ Emotional</li> </ul> <p><b>ANATOMY:</b></p> <p><b>LIP</b></p> <ul style="list-style-type: none"> <li>▪ Muscle: Orbicularis oris</li> </ul> <p><b>HARD PALATE</b></p> <ul style="list-style-type: none"> <li>▪ Bones: Maxilla (Palatine Processes) + Palatine, Bones(Horizontal Lamina)</li> </ul> <p><b>BLOOD SUPPLY</b> Greater Palatine Artery</p> <p><b>NERVE SUPPLY</b> Anterior Palatine Nerve</p> <p><b>SOFT PALATE</b></p> <ul style="list-style-type: none"> <li>✓ Fibromuscular shelf attached like a shelf to posterior portion of hard palate</li> <li>✓ Tenses, elevates, contacts Passavant's Ridge</li> </ul> <p><b>MUSCLES:</b></p> <ul style="list-style-type: none"> <li>▪ Tensor VeliPalatini</li> <li>▪ LevatorVeliPalatini (Primary Elevator)</li> <li>▪ Musculus Uvulae</li> <li>▪ Palatoglossus</li> <li>▪ Palatopharyngeus</li> </ul>	Explaining\ Listening	L C D	What do you meant by anatomy of cleft lip and cleft palate?
4.	5 mins	enumerate the development	<p><b>DEVELOPMENT OF THE LIP:</b></p> <p>The upper lip is formed by the two medial nasal swellings and the two maxillary swellings</p>	Enumerating\ Listening	L C	What are all the development of

		of cleft lip and cleft palate	<p><b>DEVELOPMENT OF THE PALATE:</b> It develops from two parts:</p> <p><b>PRIMARY PALATE</b></p> <ul style="list-style-type: none"> <li>▪ Triangular area of hard palate anterior to incisive foramen to point just lateral to lateral incisor teeth.</li> <li>▪ Includes that portion of alveolar ridge and four incisor teeth.</li> </ul> <p><b>SECONDARY PALATE</b></p> <ul style="list-style-type: none"> <li>▪ Remaining hard palate and all of soft palate</li> </ul> <p><b>PALATAL SHELF ELEVATION &amp; FUSION:</b></p> <ul style="list-style-type: none"> <li>✓ From 8-9 weeks I.U., the lateral palatine shelves slide or roll over the tongue and acquire a horizontal position (shelf elevation).</li> <li>✓ The palatine closure begins from the 9th to the 12th W.I.U. After the shelves are in a horizontal position and they attain their final growth, shelf fusion occurs.</li> </ul> <p><b>DEVELOPMENTAL ANOMALIES CLEFT PALATE:</b></p> <ul style="list-style-type: none"> <li>➤ It may be due to lack of growth.</li> <li>➤ It may also be due to interference with palatal shelves elevation.</li> <li>➤ Failure of fusion between the median and lateral palatine processes and the nasal septum.</li> <li>➤ It may be due to initial fusion with interruption of growth at any point along its course.</li> <li>➤ Clefts of primary palate occur anterior to incisive foramen Clefts of secondary palate occur posterior to</li> </ul>		D	cleft lip and cleft palate?
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5.	3 mins	enlist the etiology factors of cleft lip and cleft palate	<p style="text-align: center;">incisive foramen</p> <p><b>ETIOLOGY:</b></p> <ul style="list-style-type: none"> <li>✓ The exact cause of clefting is unknown.</li> <li>✓ Chemical exposures,</li> <li>✓ Radiation,</li> <li>✓ Maternal hypoxia,</li> <li>✓ Teratogenic drugs</li> <li>✓ Nutritional deficiencies</li> </ul> <ul style="list-style-type: none"> <li>✓ Physical obstruction</li> <li>✓ Genetic influences</li> </ul>	Enlisting\ Taking notes	L C D	What are the etiology factors of cleft lip and cleft palate?
6.	5 mins	describe the classification of cleft lip and cleft palate	<p><b>CLASSIFICATION:</b></p> <p><b>CLEFT LIP</b></p> <ul style="list-style-type: none"> <li>▪ Unilateral or Bilateral</li> <li>▪ Complete or Incomplete</li> </ul> <p><b>PALATAL CLEFT</b></p> <ul style="list-style-type: none"> <li>▪ Bifid Uvula</li> <li>▪ Soft palate only</li> <li>▪ Both hard and soft palate</li> </ul> <p><b>COMBINED LIP AND PALATAL DEFECT</b></p> <ul style="list-style-type: none"> <li>▪ Unilateral, complete or incomplete</li> <li>▪ Cleft palate with bilateral cleft lip , complete or incomplete</li> </ul>	Describing\ Listening	L C D	What are all the classification of cleft lip and cleft palate?

7.	8 mins	discuss the management of cleft lip and cleft palate	<p><b>CLASSIFICATION:</b></p> <ul style="list-style-type: none"> <li>✓ <b>Group I:</b> Clefts of lip only</li> <li>✓ <b>Group II:</b> Clefts of palate only (2o)</li> <li>✓ <b>Group III:</b> Clefts of lip, alveolus, palate</li> <li>✓ <b>Group IV:</b> Clefts of lip and alveolus (primary cleft palate and lip)</li> <li>✓ <b>Group V:</b> Miscellaneous</li> </ul> <p><b>MANAGEMENT OF CLEFTS: IMPORTANT CONSIDERATION</b></p> <ul style="list-style-type: none"> <li>➤ Provision for feeding in infancy when palatal clefts are severe.</li> <li>➤ Prevention of movement of the two halves of the maxilla or premaxilla.</li> <li>➤ Measures to counteract speech defects.</li> <li>➤ Cosmetic repair of cleft lips.</li> </ul> <p><b>NON-SURGICAL TREATMENT:</b></p> <ul style="list-style-type: none"> <li>❖ Dental Obturator</li> <li>❖ For high-risk patients or those that refuse surgery.</li> </ul> <p><b>ADVANTAGE:</b></p> <ul style="list-style-type: none"> <li>• High rate of closure</li> </ul> <p><b>DISADVANTAGE:</b></p> <ul style="list-style-type: none"> <li>• Need to wear a prosthesis, and need to modify prosthesis as child grows.</li> </ul>	Discussing\ Listening	L C D	What are all the management of cleft lip and cleft palate?
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8.	9 mins	elaborate the surgical management of cleft lip and cleft palate	<p><b>PRESURGICAL ORTHOPEDICS:</b></p> <ul style="list-style-type: none"> <li>➤ Appliances are composed of a custom-made acrylic base plate that provides improved anchorage in the molding of lip, nasal, and alveolar structures during the presurgical phase of treatment.</li> <li>➤ NasoalveolarMolding (NAM)</li> </ul> <p><b>PRIMARY SURGICAL REPAIR:</b></p> <ul style="list-style-type: none"> <li>• Isolated Cleft Lip 3-4 months</li> <li>• Isolated Cleft Palate Hard or Soft Palate 8-9 months</li>   <li>• Cleft Lip and Palate 3-4 months</li> <li>• Soft palate 8-9 months</li> </ul> <p><b>SECONDARY SURGERY:</b></p> <ul style="list-style-type: none"> <li>• Speech surgery- (Pre school) Velopharyngeal insufficiency</li>   <li>• Alveolar bone graft- (8-10 years) Boney union of alveolus</li> <li>• Orthognathic surgery- (Adult) Malocclusion/aesthetic</li> </ul> <p><b>SURGICAL MANAGEMENT:</b></p> <ul style="list-style-type: none"> <li>➤ <b>STAGING AND TIMING OF SURGERY</b> <ul style="list-style-type: none"> <li>✓ Different institutions with different practice</li> </ul> </li> <li>➤ <b>CLEFT LIP</b> <ul style="list-style-type: none"> <li>▪ Rule of 10's           <ul style="list-style-type: none"> <li>✓ Hb= 10g,</li> <li>✓ Weight of 10lbs</li> </ul> </li> </ul> </li> </ul>	Elaborating\ Listening	L C D	What are all the surgical management of cleft lip and cleft palate?
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✓ Age 10wks

➤ **CLEFT PALATE**

✓ 6-8 weeks

✓ 9-12 months of age

**MULTI DISCIPLINARY TEAM:**

- ❖ Oral and maxillofacial surgeon
- ❖ Child & family speech therapist
- ❖ Specialist nurse
- ❖ Orthodontist

❖ Dentist

❖ Geneticist

❖ Ent/paediatrician

❖ Psychologist

**COMPLETE CLEFT LIP**

**Goal:** Symmetric shaped nostrils, nasal seal, and alar bases; well defined philtral dimple and columns; natural appearing Cupid's bow; functional muscle repair.

**FLAP DESIGNS:**

✓ **Rotation-advancement (Millard\*, Mohler)**

✓ **Quadrangular**

✓ **Triangular (Tennison-Randall)**

**MILLARD TECHNIQUE:**

“Cut as you go” technique Preserves' cupid's bow and philtral dimple  
Scar placed in more anatomically correct position along philtral

column Tension of closure under the alar base; reduces flair and promotes better molding of the underlying alveolar processes.

### **CLEFT PALATE**

**Goal:** Production of a competent velopharyngeal sphincter

Two most common repairs:

- 1) Von Langenbeck
- 2) V-Y (Veau-Wardill-Kilner)

**Main Difference:** V-Y repair involves elongation of the palate, while von Langenbeck does not

### **FURLOW DOUBLE-OPPOSING Z PLASTY**

Common technique attempts to lengthen the palate by taking advantage of a Z-plasty technique on both nasal mucosa and oral mucosa.

### **BARDACH TWO-FLAP PALATOPLASTY**

Uses two large full thickness layered dissection and brought to the midline for closure.

### **BONE GRAFTING:**

At one time, bone grafting tended to be performed only in bilateral alveolar clefts to fix a mobile premaxilla to the maxilla. however now been extended to include the achievement of a continuous alveolus in all cleft patients with an alveolar defect..

### **CONCLUSION:**

- Cleft Lip and Palate are common congenital deformities

			<p>that often affect speech, hearing, and cosmetic and may at times lead to airway compromise.</p> <ul style="list-style-type: none"><li>➤ The Oral and Maxillofacial surgeon is a key member of the cleft palate team, and is in a unique position to identify and manage many of these problems.</li></ul>			
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