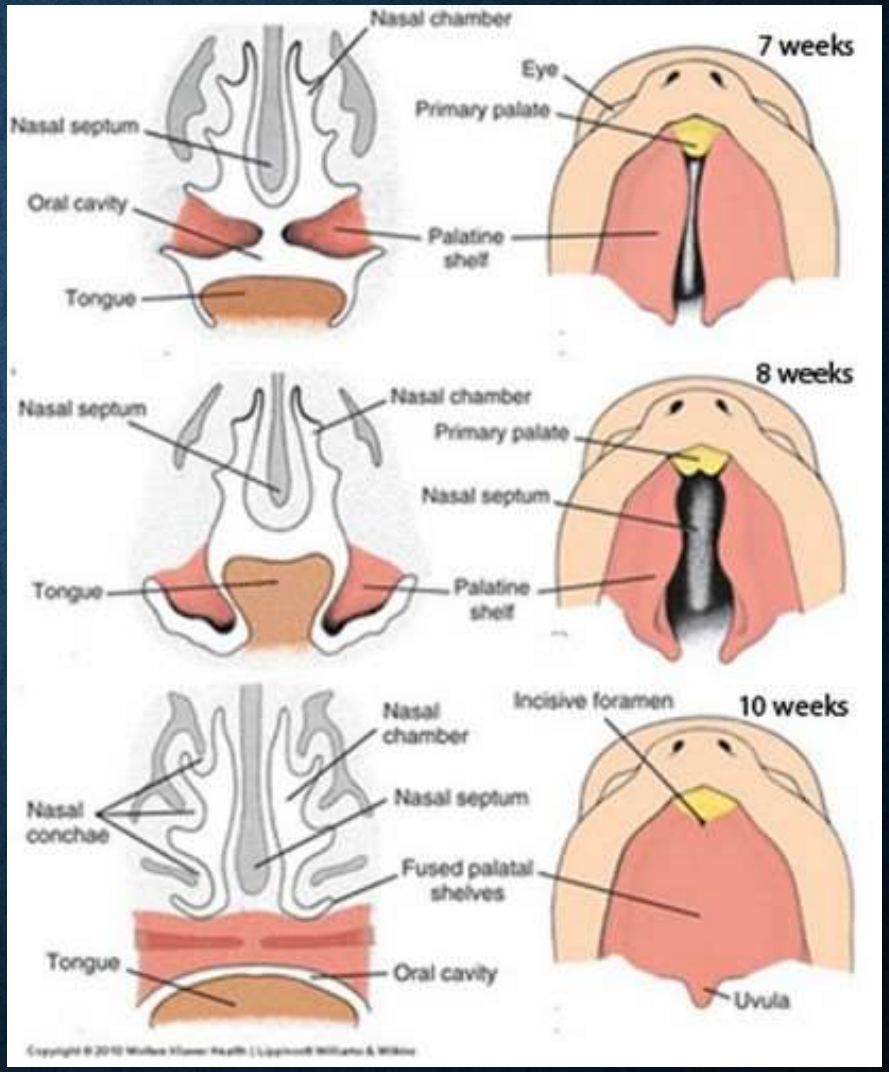
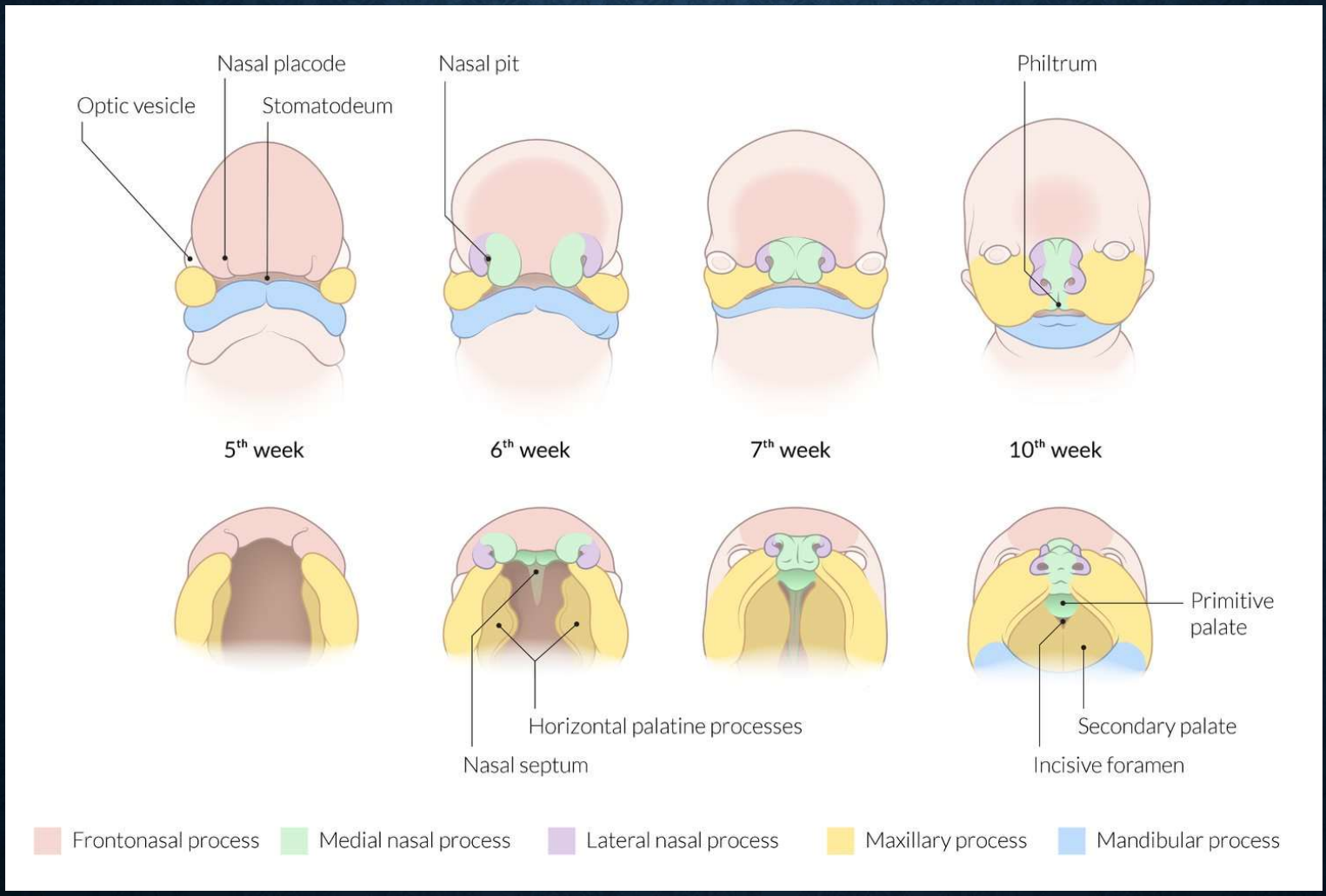
DEVELOPMENTAL DISTURBANCES

Dr pavan kumar gujjar

- When the primary palate is completely formed, the maxillary processes enlarge intraorally to form the palatine processes.
- During the 8th week of gestation, the palatal shelves fill up the space on both sides of the tongue.
- During the 9th and 10th weeks, the mandibular arch enlarges and the tongue drops. The palatal shelves transpose horizontally and fuse with each other and with the anterior part of the palate.
- Palatal fusion occurs anteroposteriorly and the process is completed by the 11th to 12th weeks




Nasal placode
Optic vesicle
Stomatodeum
Nasal pit
Philtrum
5th week
6th week
7th week
10th week
Primitive palate
Horizontal palatine processes
Secondary palate
Nasal septum
Incisive foramen
Frontonasal process
Medial nasal process
Lateral nasal process
Maxillary process
Mandibular process

- Failure in the fusion of the nasal and maxillary processes leads to the cleft of the primary palate, which can be unilateral or bilateral.
- The degree of cleft can vary from a slight notch on the lip to complete cleft of the primary palate.
- Cleft of the secondary palate is medial. It varies from bifid uvula to complete cleft palate up to the incisive foramen.
- When it is associated with the primary palate, a complete unior bilateral cleft lip and palate is formed

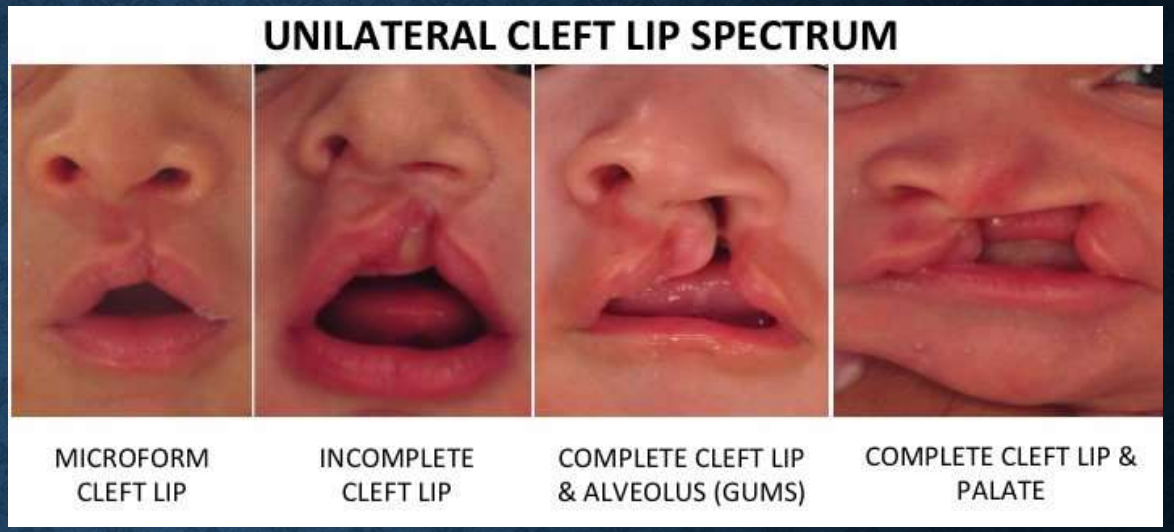
ETIOLOGY

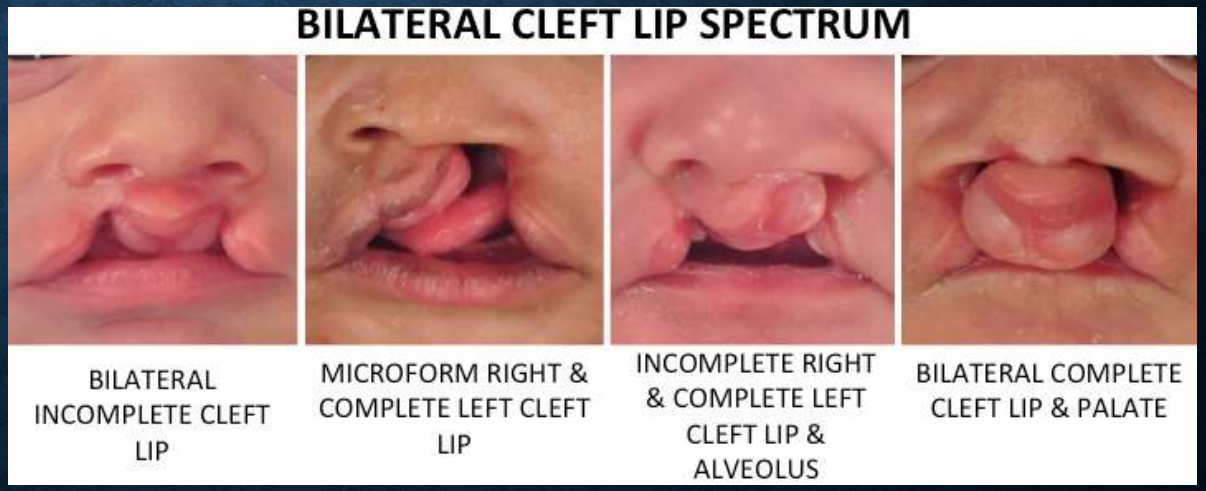
- Heredity (polygenic)
- monogenic or syndromic
- nutritional disturbances (Riboflavin-deficient diets)
- physiologic, emotional, or traumatic stress
- A defective vascular supply to the area involved
- A mechanical disturbance in which the size of the tongue may prevent the union of parts
- Circulating substances, such as alcohol and certain drugs and toxins
- Infections
- Lack of inherent developmental force

CLINICAL FEATURES

- Males>female (also, more severe defects in males)
- Isolated CP: F>M
- 70% of cases of cleft lip with or without palate and 50% of isolated cleft palate are nonsyndromic.
- The remaining syndromic cases can be subdivided into chromosomal anomalies, teratogens and uncategorized syndromes.

- unilateral (on the left or right side) or as a bilateral anomaly
- wide range of severity, from a notch located on the left or right side of the lip to the most severe form, bilateral cleft lip and alveolus that separates the philtrum of the upper lip and premaxilla from the rest of the maxillary arch.





CLASSIFICATION

- Davis and Ritchie classification
- Veau classification
- Kernahan and Stark symbolic classification
- International confederation of plastic and recon-structive surgery classification.

DAVIS AND RITCHIE CLASSIFICATION

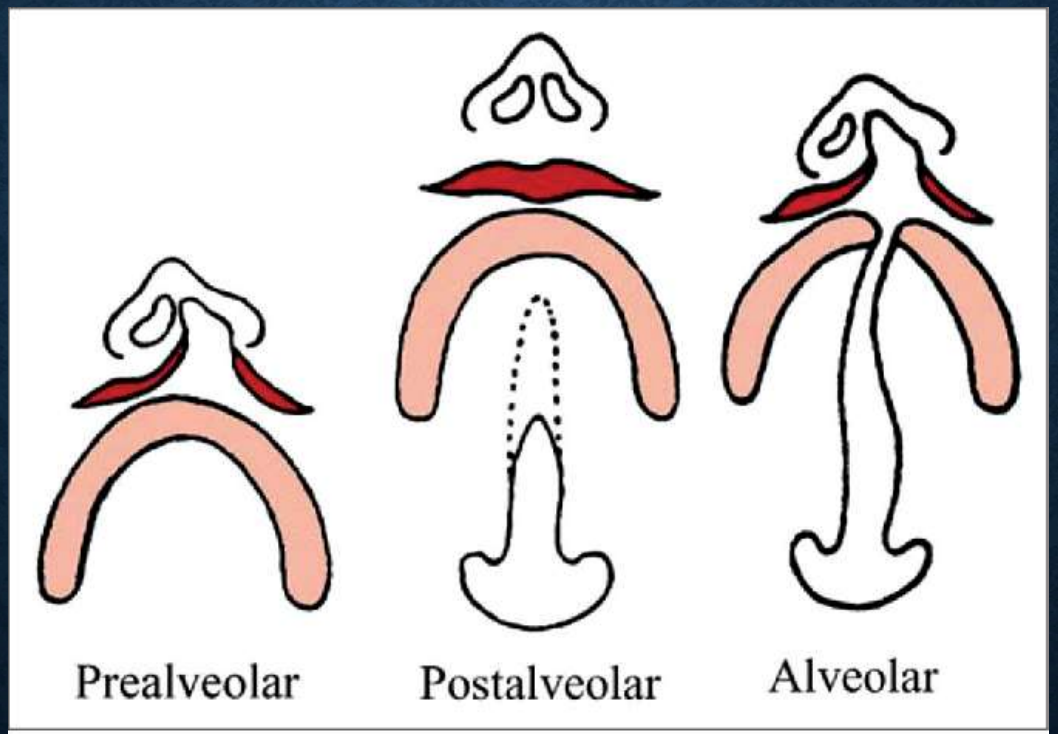
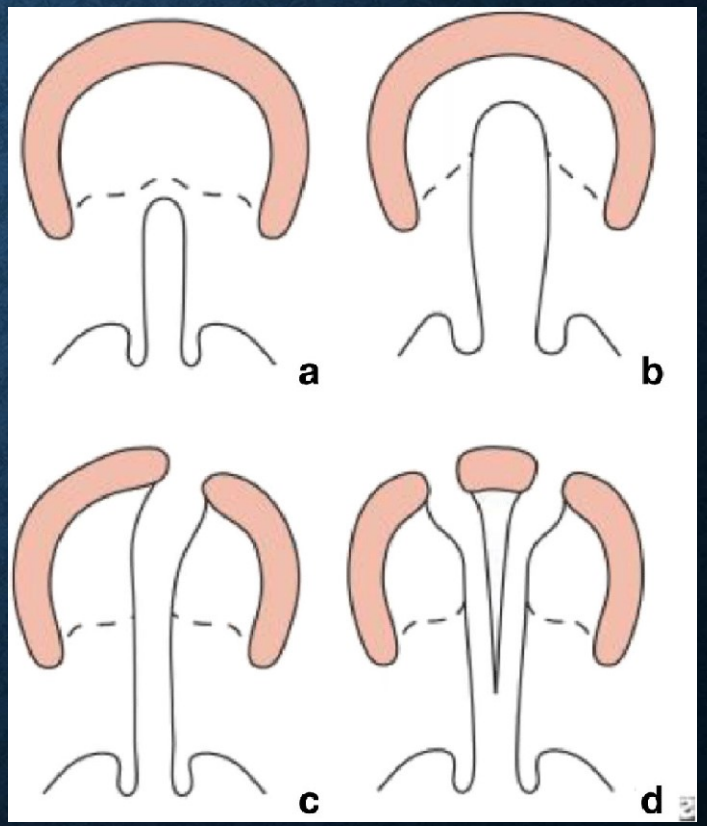


Figure 4: The classification of Davies and Ritchie

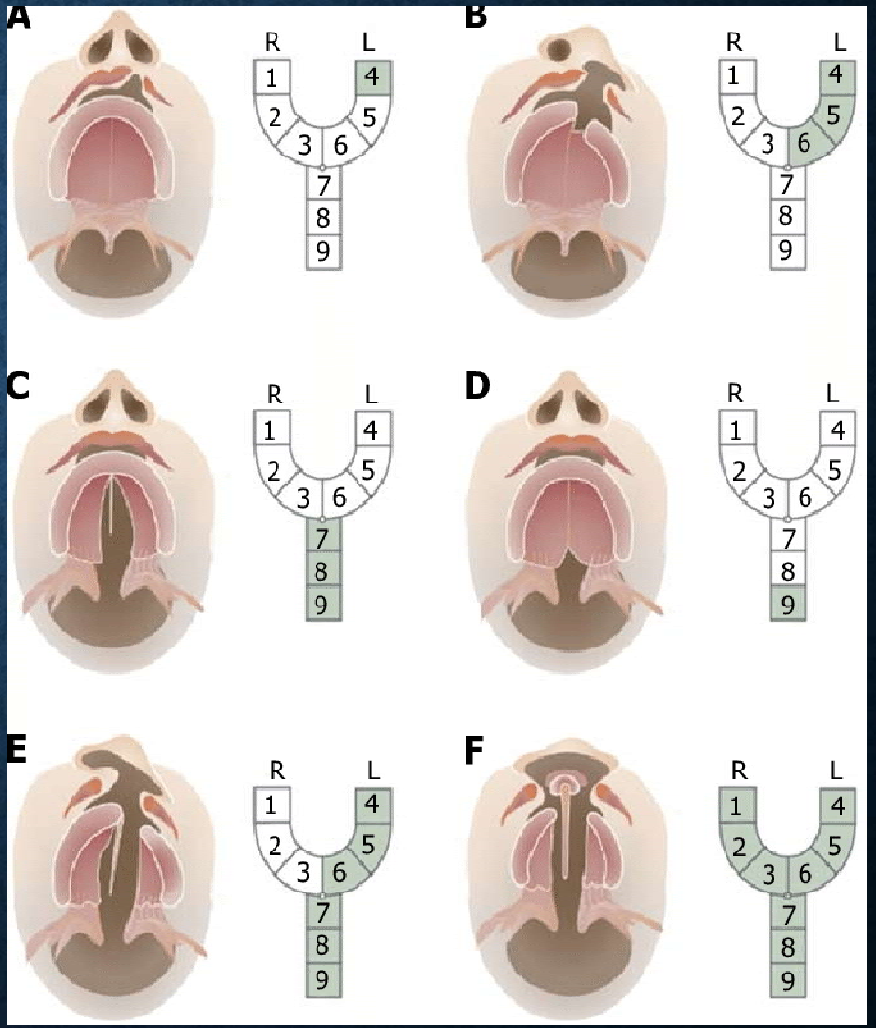
VEAU CLASSIFICATION

VEAU 1931	DESCRIPTION
Group I (A)	Defects of the soft palate only
Group II (B)	Defects involving the hard palate and soft palate extending not further than the incisive foramen.
Group III (C)	Complete unilateral cleft, extending from the soft palate to the alveolus, usually involving the lip
Group IV (D)	Complete bilateral clefts, resembles Group III but is bilateral. When cleft is bilateral, pre-maxilla is suspended from the nasal septum.

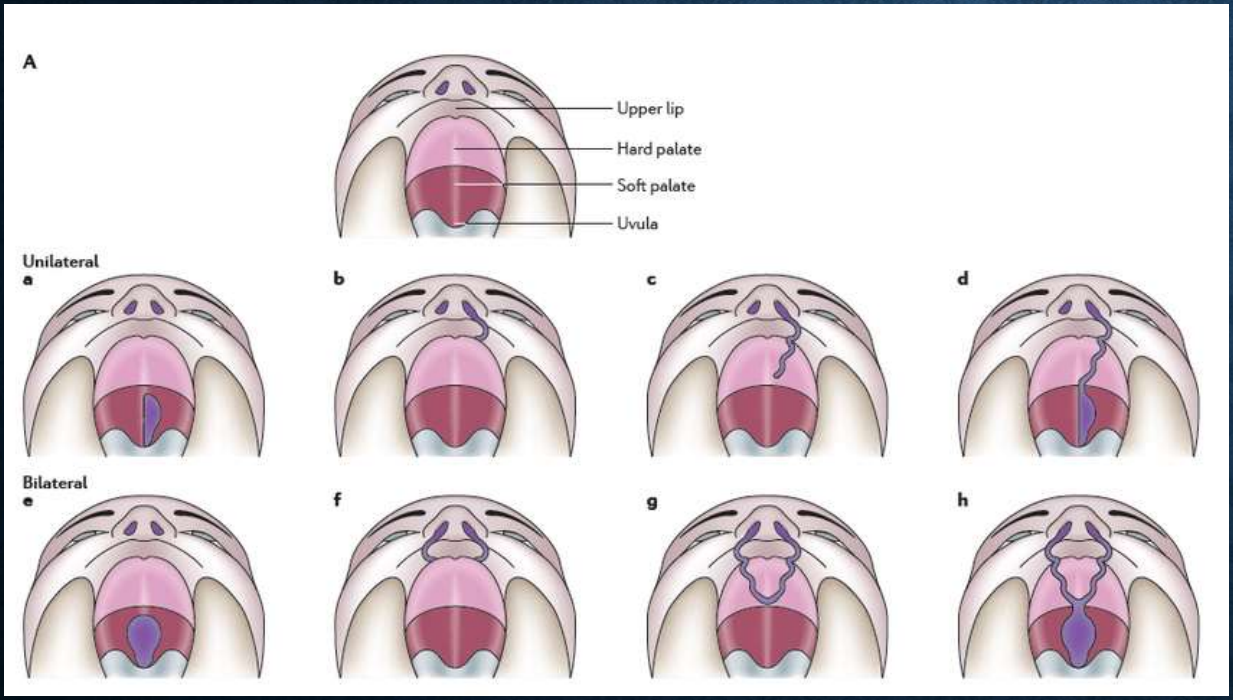


KERNAHAN AND STARK

- This system provides a graphic classification scheme using a Y-configuration, which can be divided into 9 areas: •
- Areas 1 and 4: Lip
- • Areas 2 and 5: Alveolus
- • Areas 3 and 6: Palate between the alveolus and the incisive foramen
- • Areas 7 and 8: Hard palate
- • Area 9: Soft palate.



INTERNATIONAL CONFEDERATION OF PLASTIC AND RECONSTRUCTIVE SURGERY CLASSIFICATION.

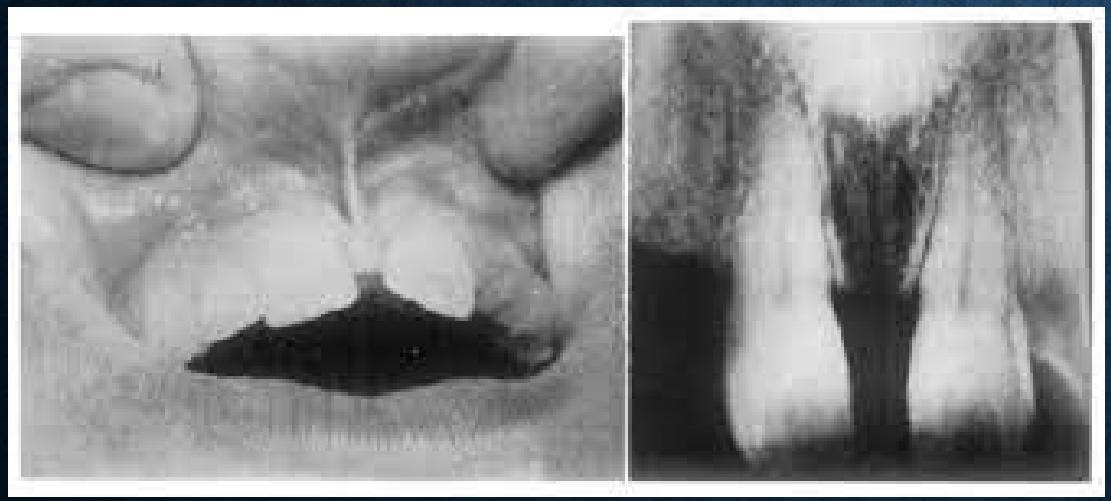


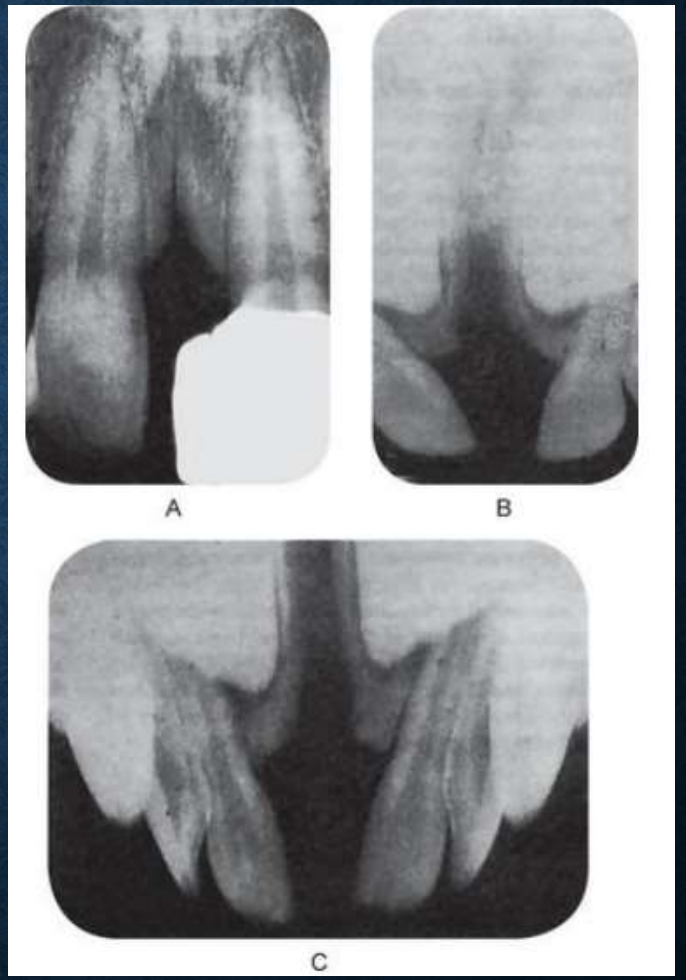
This system uses an embryonic framework to divide clefts into 4 groups, with further subdivisions to denote unilateral or bilateral cases.

MEDIAN MAXILLARY ANTERIOR ALVEOLAR CLEFT

- relatively common defect, occurring in approximately 1% of the population
- might be due to precocious limitation of the growth of the primary ossification centers on either side of the midline at the primary palate, or to their subsequent failure to fuse.
- some cases may represent an incomplete manifestation of the median cleft-face syndrome (hypertelorism, median cleft of the premaxilla and palate, and cranium bifidum occultum). This syndrome has no clinical manifestations and is usually detected only on routine intraoral radiographic examination


A
B




A
B
C

TREATMENT

- closure of the CL is the first major procedure
- the most usual time occurs at approximately three months of age.
- Pediatricians used to strictly follow a rule of ‘three 10s’ as a necessary requirement for identifying the child’s status as suitable for surgery (i.e. 10 lb, 10 mg/L of hemoglobin, and age 10 weeks).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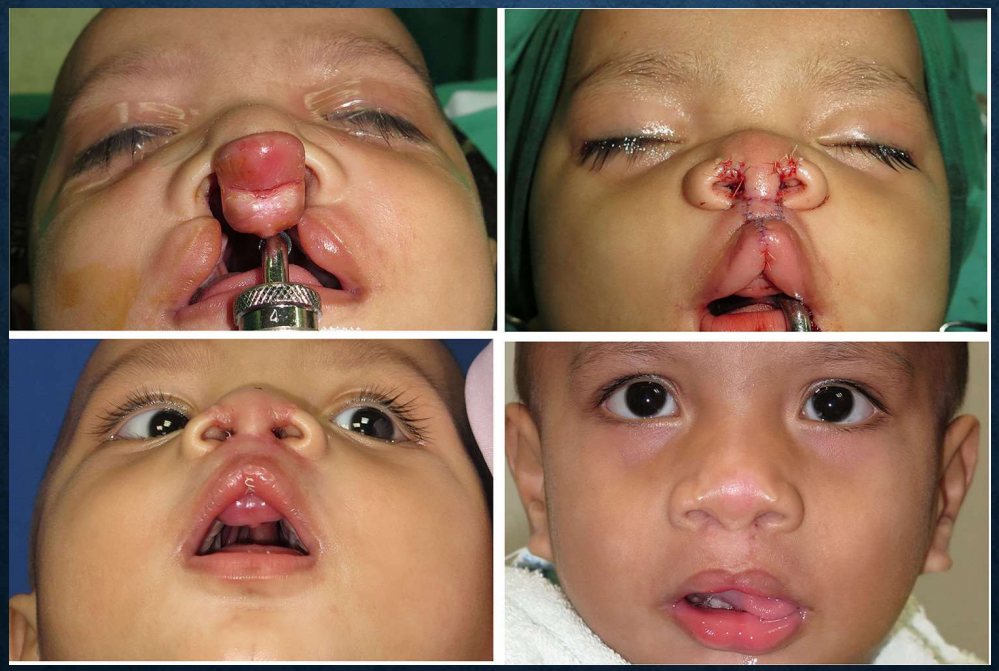

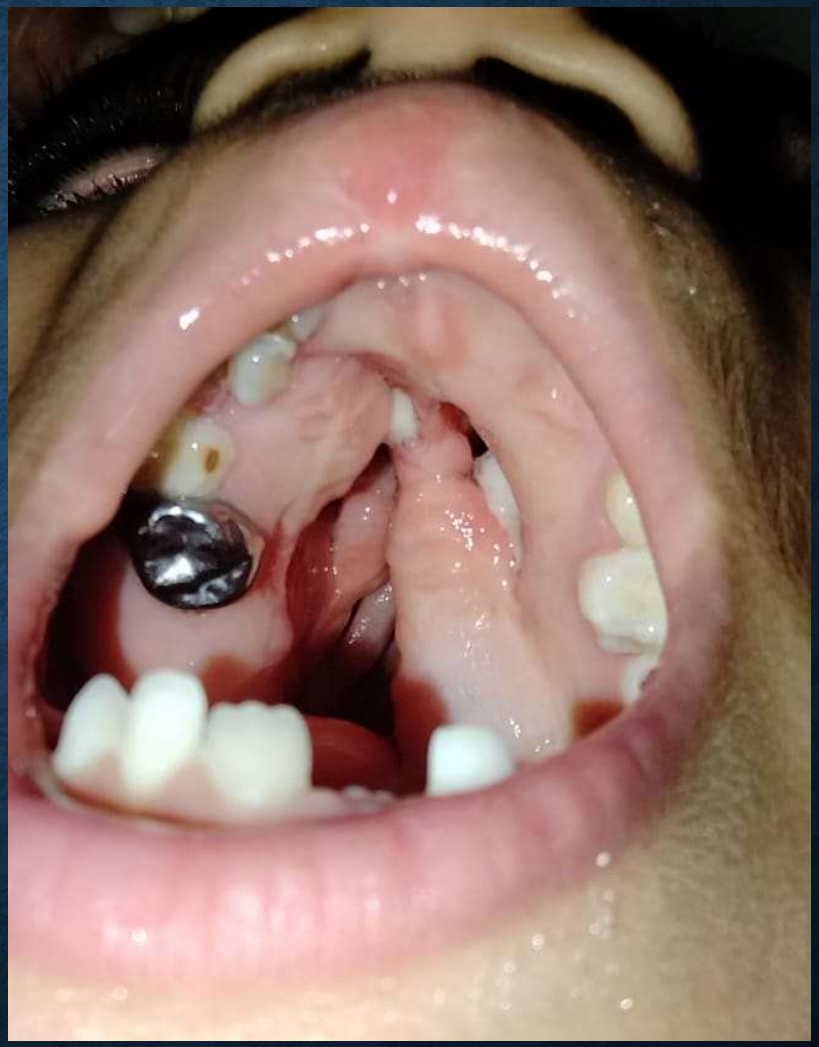


ANY
QUESTIONS
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