CLEFT LIP AND PALATE

Dr.Raad Salah Shyaa

- Cleft lip and palate (CLP) refers to a clinical spectrum of cleft lip with or without associated cleft palate or isolated cleft palate.

Epidemiology

- The incidence is highest in asians (1:500)
- Whites (1:1000)
- The lowest incidence is in african-americans (1:2000)

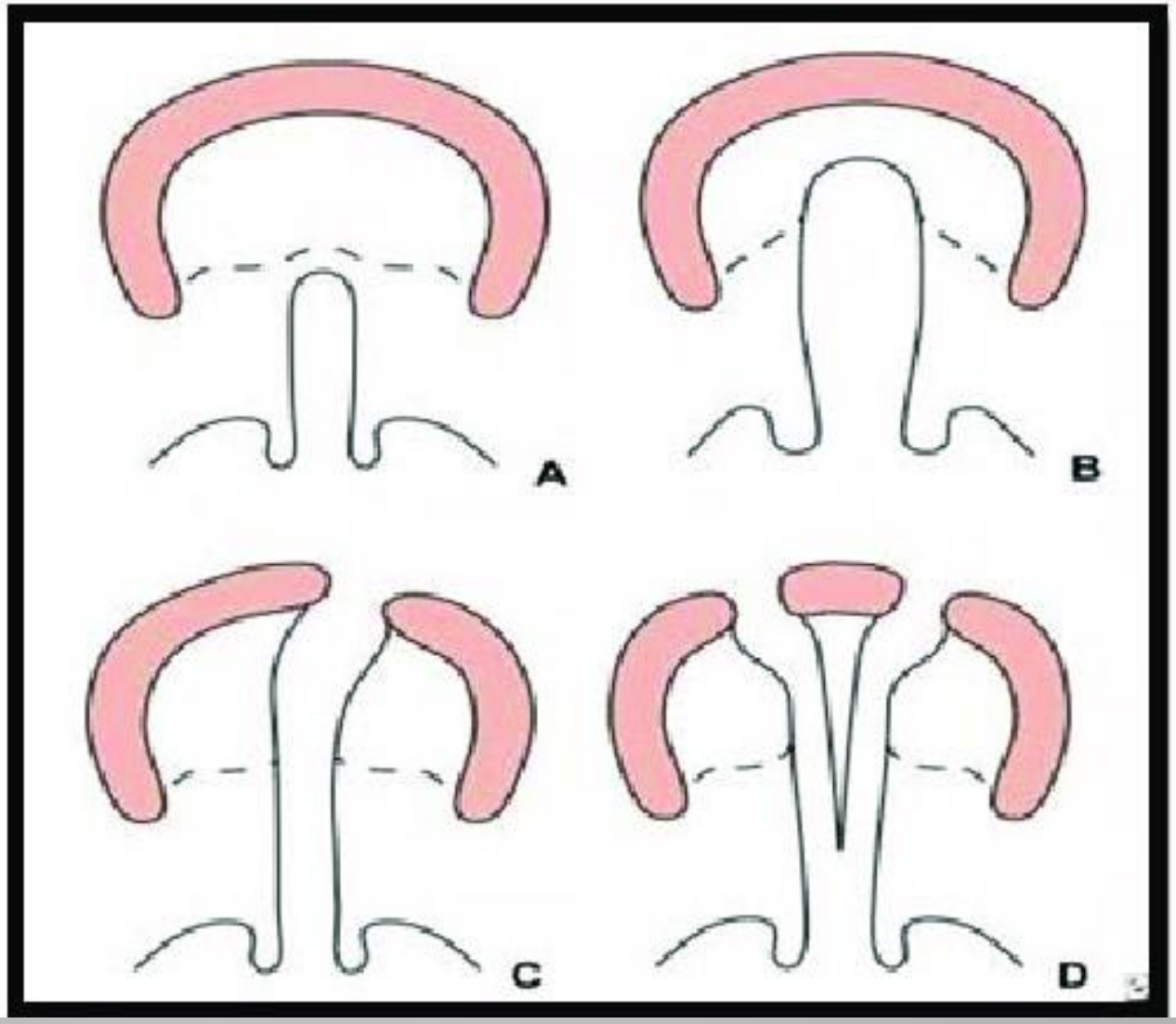
- Isolated cleft lip (CL) is reported in 21%-25% of the cases.
- Isolated CP is reported in 33%-40% of the cases.
- CLP is reported in 35%-46%.

Etiology

- multifactorial etiology with a number of potential environmental and genetic contributing factors.
- The environmental factors during pregnancy:
- smoking, alcohol, anticonvulsants, steroids, folic acid deficiency, hypoxia, retinoids, radiation, viral infections in addition to mechanical factors.

Classification

- 1. The laterality (unilateral/bilateral/median) and severity (complete/ incomplete) of the labial defect.
- 2. Acknowledgment of an alveolar defect.
- 3. Morphological characterization of the palatal defect; one of the most widely accepted classification of palatal defects is that of Victor Veau introduced in 1931: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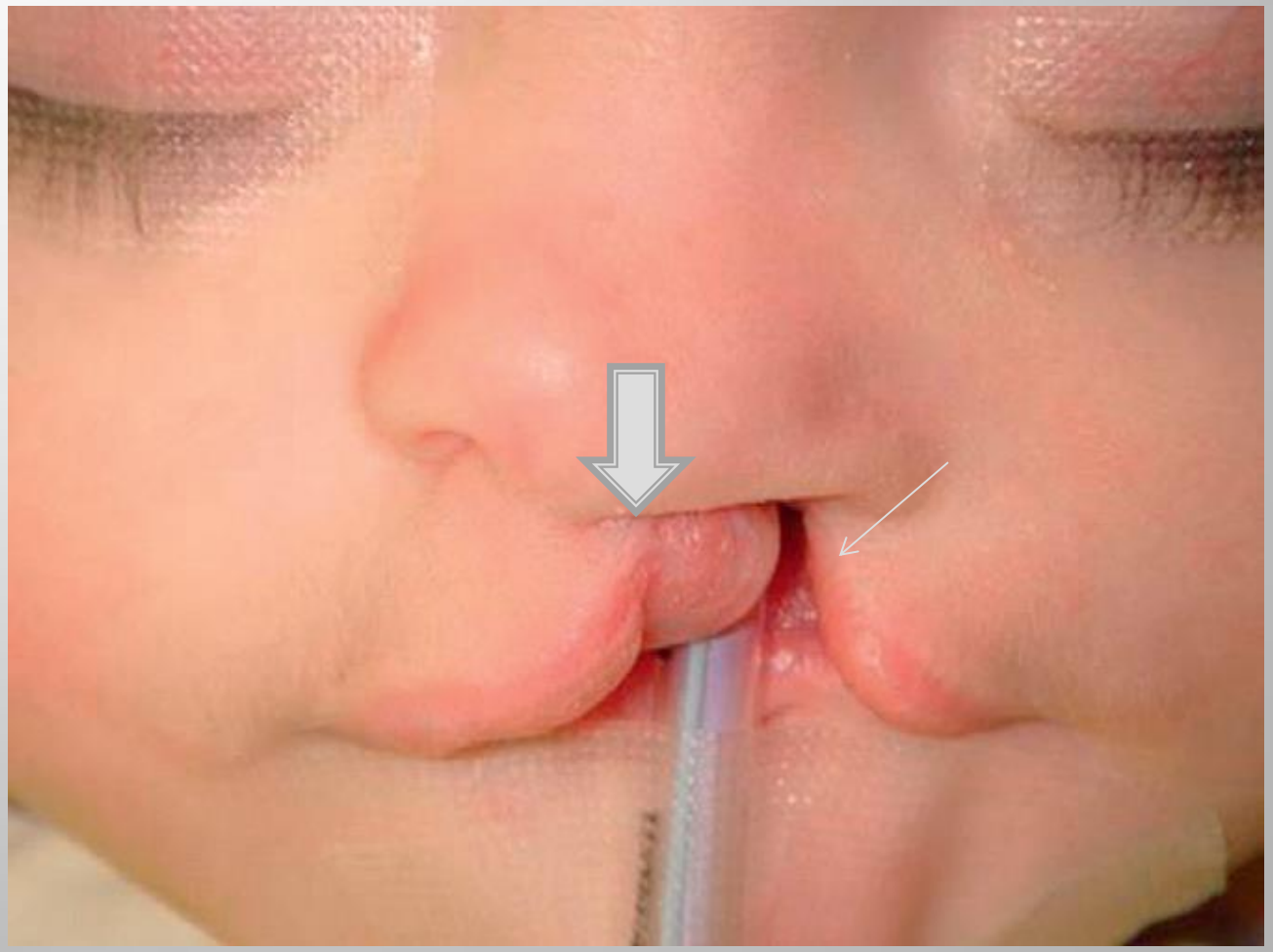
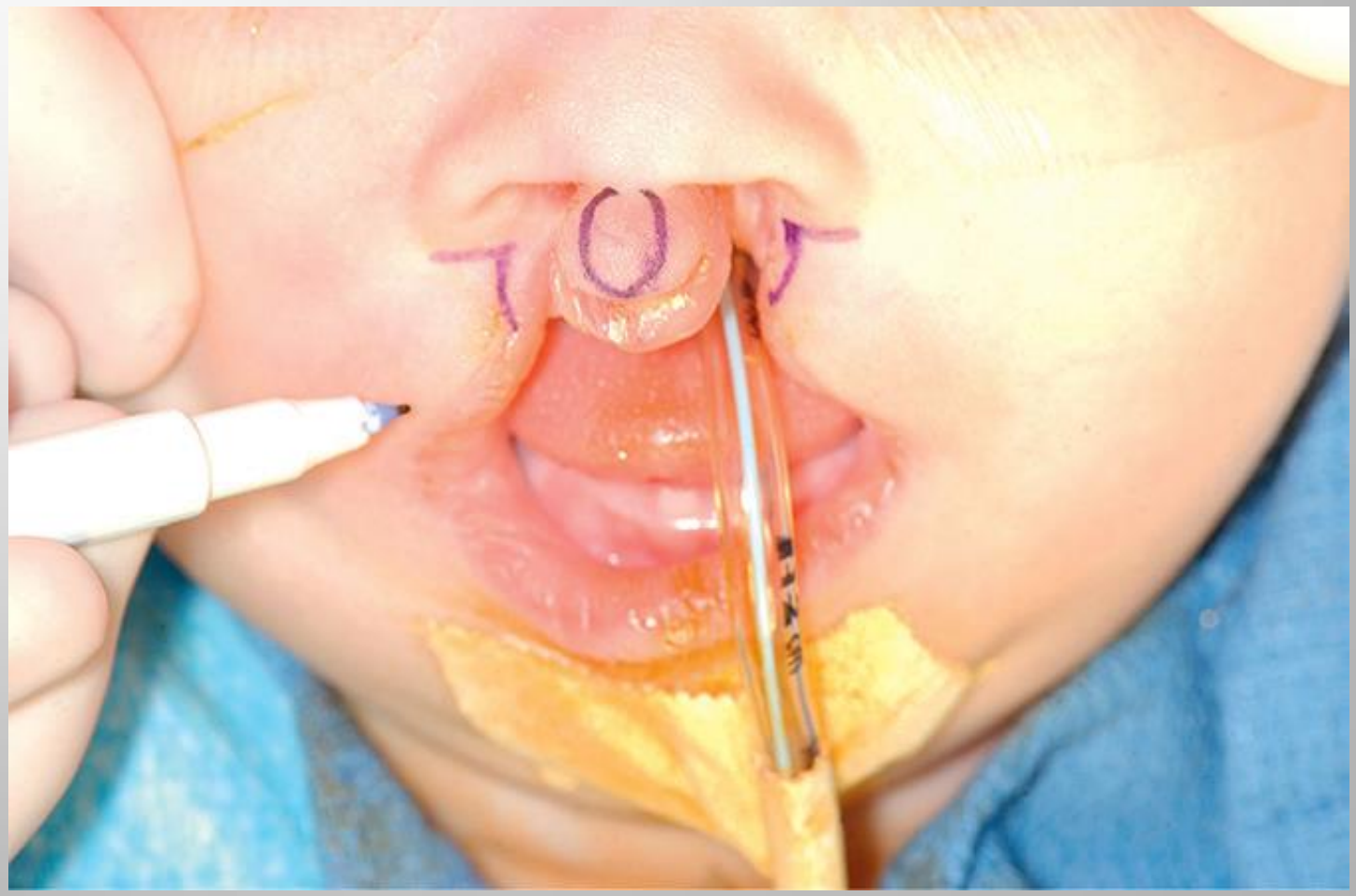
Prenatal diagnosis

- Ultrasound images of clefts of the lip can be visualized as early as 12-16 weeks, whereas diagnostic images of the palate are more difficult to acquire.

Clinical manifestations





Management

Specific goals of treatment include the following:

✓ Normalized esthetic appearance of the lip and nose .

✓ Intact primary and secondary palate .

✓ Normal speech, language, and hearing.

✓ Nasal airway patency.

✓ Class I occlusion with normal masticatory function.

✓ Good dental and periodontal health .

✓ Normal psychosocial development.

- The management of CLP patients can be divided into:

1. Preoperative management.
2. Primary operative management.
3. Secondary operative management.







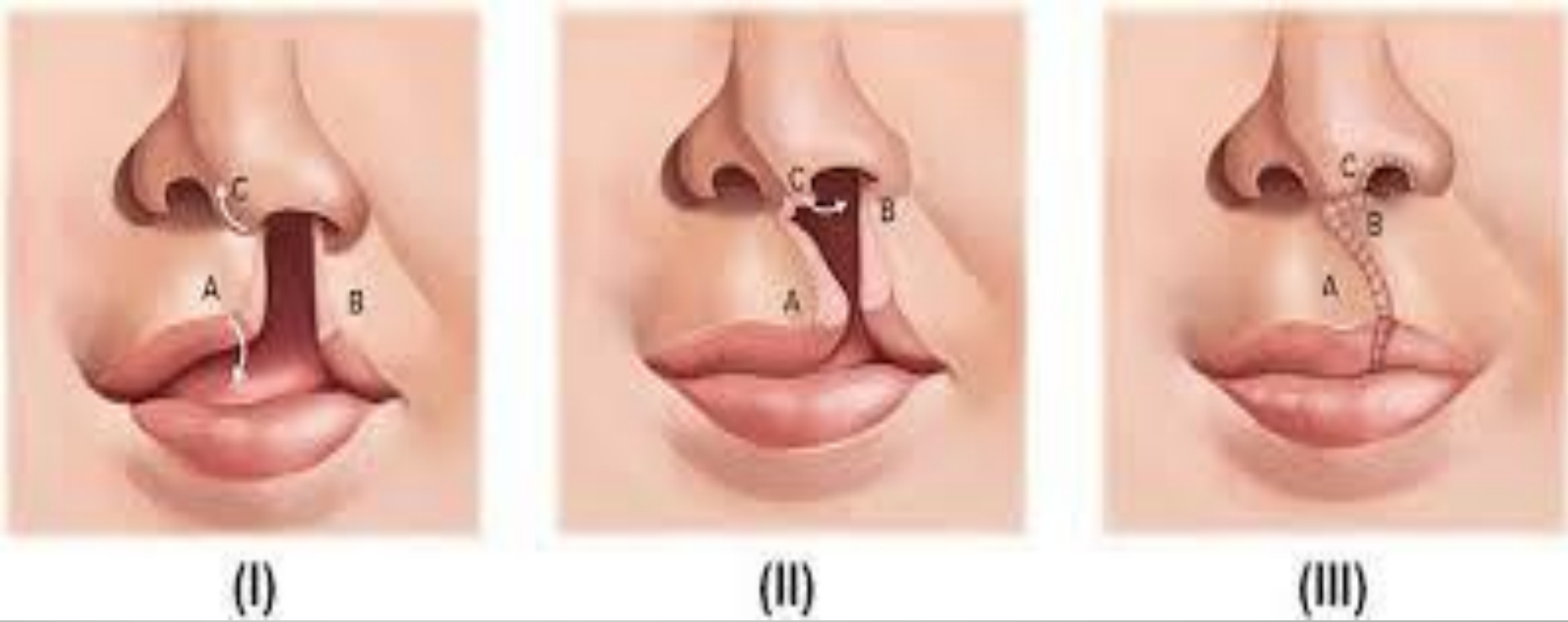


Treatment planning and timing

Procedure	Timing
CL repair	After 10 weeks
CP repair	9-18 months
Pharyngeal flap or pharyngoplasty	3–5 years or later based on speech development
Alveolar reconstruction	6–9 years based on dental development
Orthognathic surgery	14–16 years in girls, 16–18 years in boys
Rhinoplasty	After age 5 years but preferably at skeletal maturity; after orthognathic surgery when possible
Lip revision	Anytime once initial remodeling and scar maturation is complete but best performed after age 5 years

Surgical procedures for CL

- Lip adhesion
- Straight line repair
- Tennison-Randall triangular flap repair
- Millard's rotation-advancement flap repair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Surgical procedures for CP

CP repair requires the mobilization of multilayered flaps to reconstruct the defect in a layered fashion by:

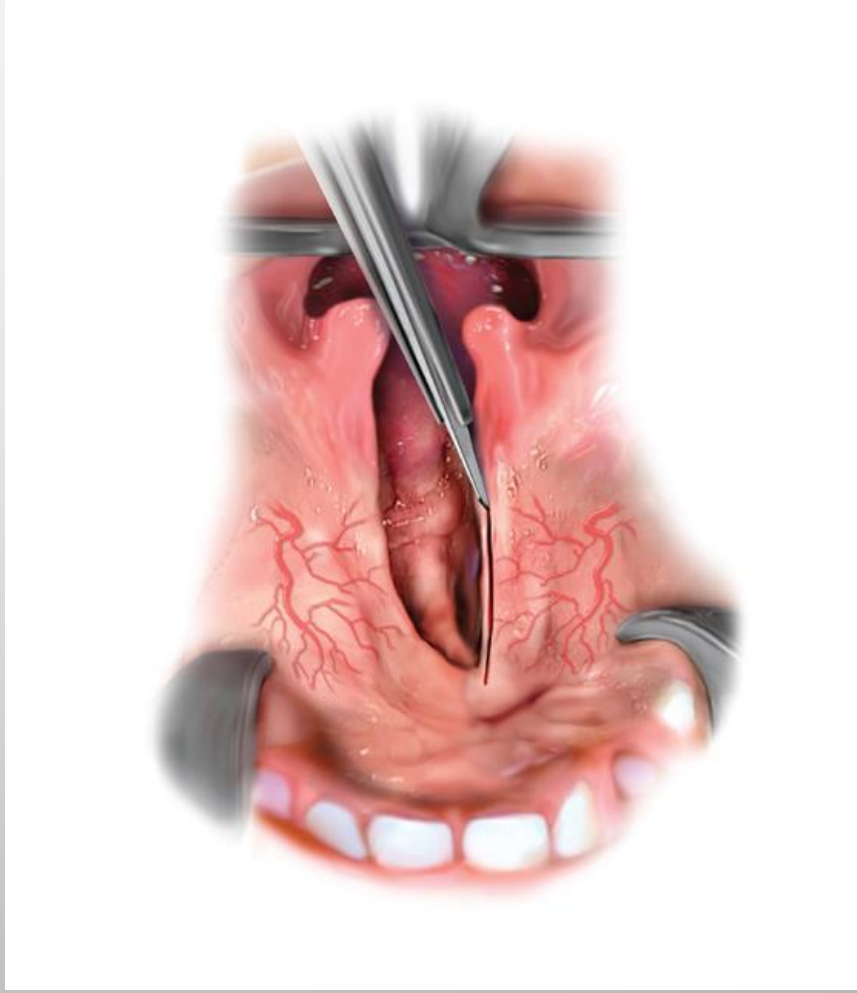
1. First closing the nasal mucosa

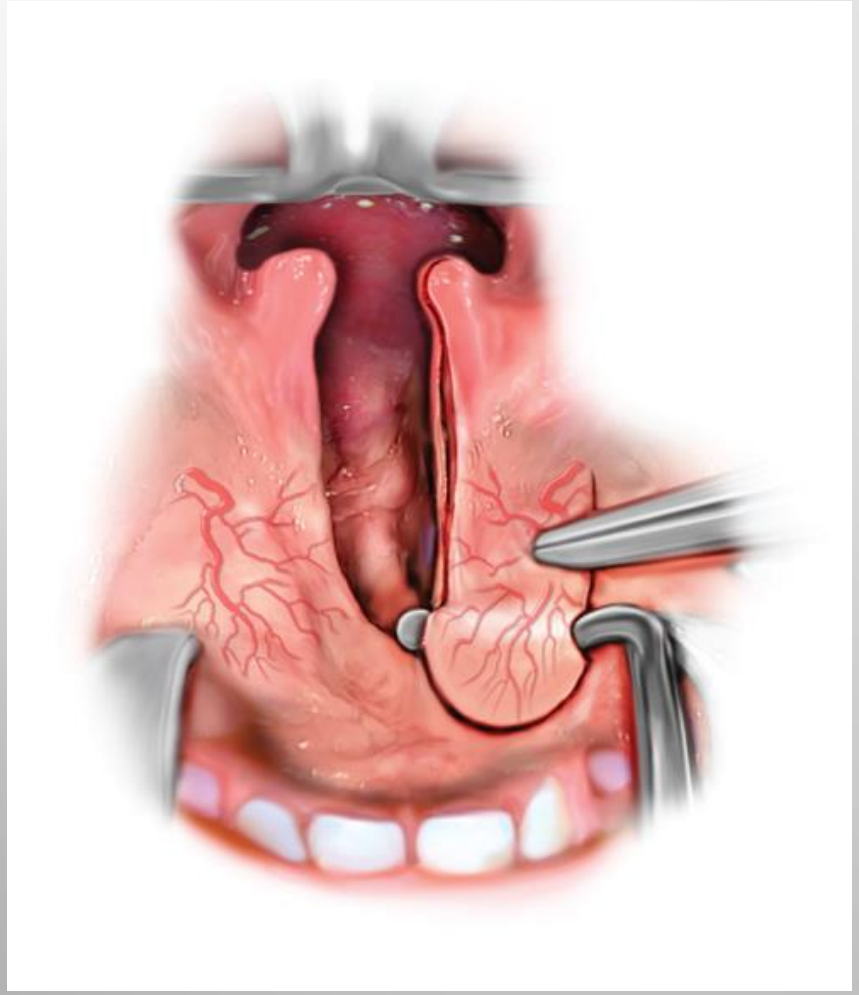
2.And then the oral mucosa.

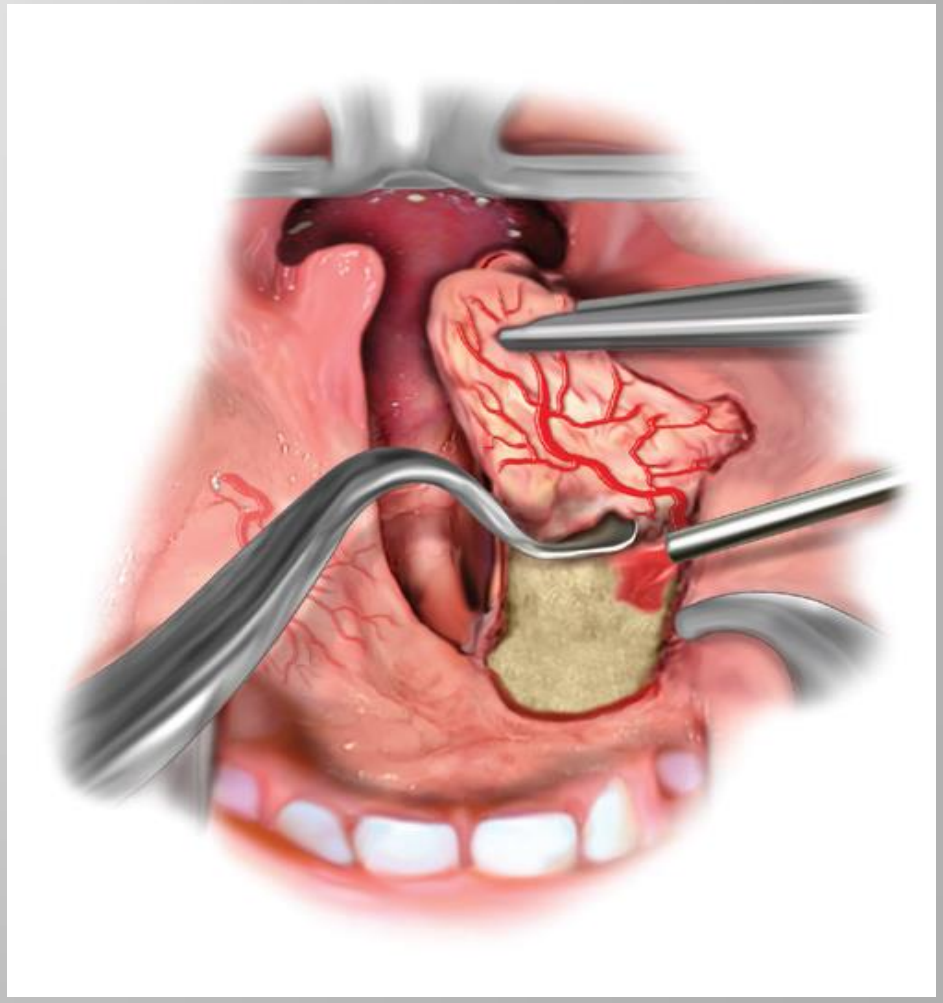
3. The surgeon must also reconstruct the musculature of the velopharyngeal mechanism.

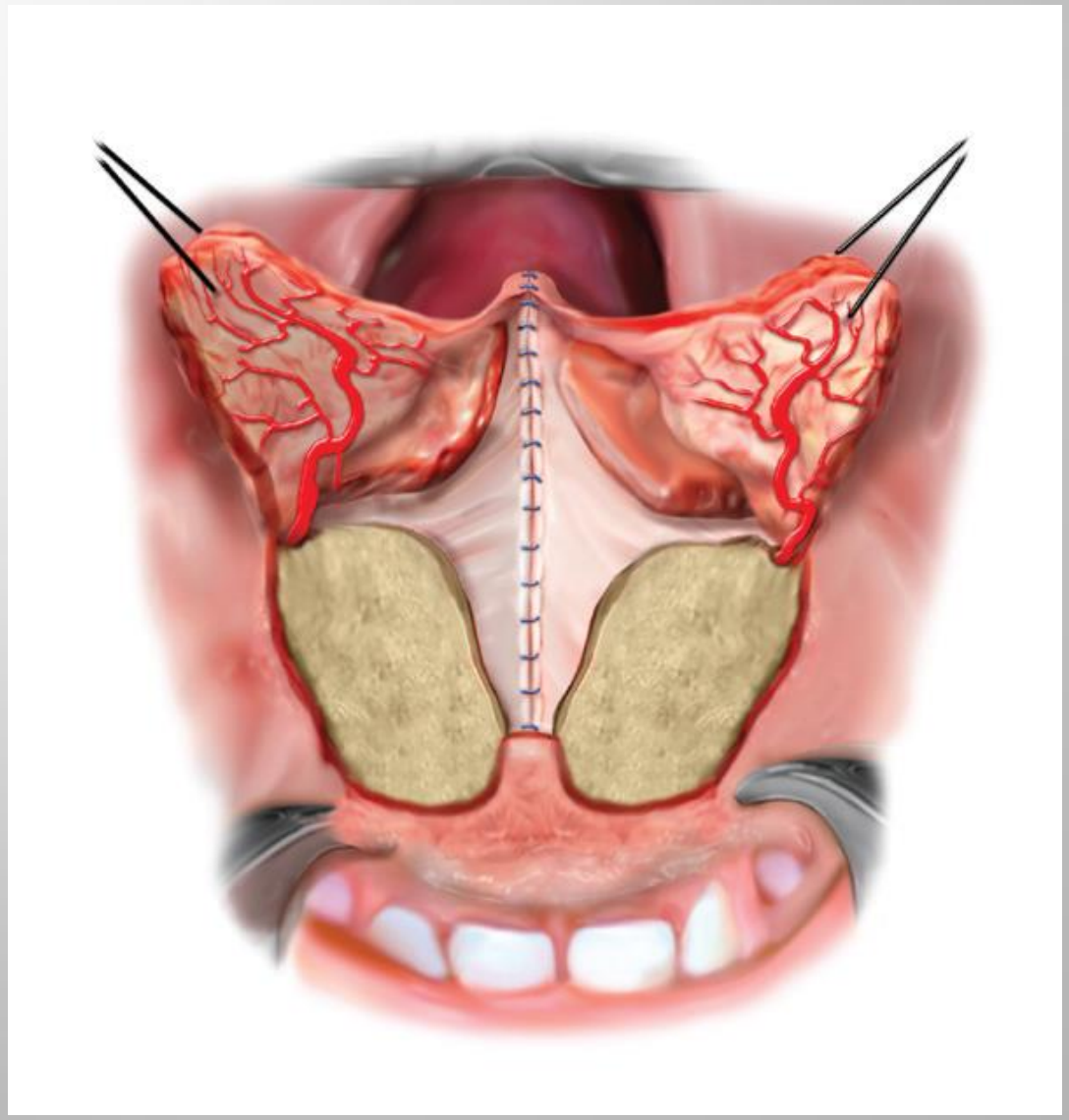
- The von Langenbeck technique.
- V-Y pushback technique.
- Two-flap technique.
- The Furlow technique.

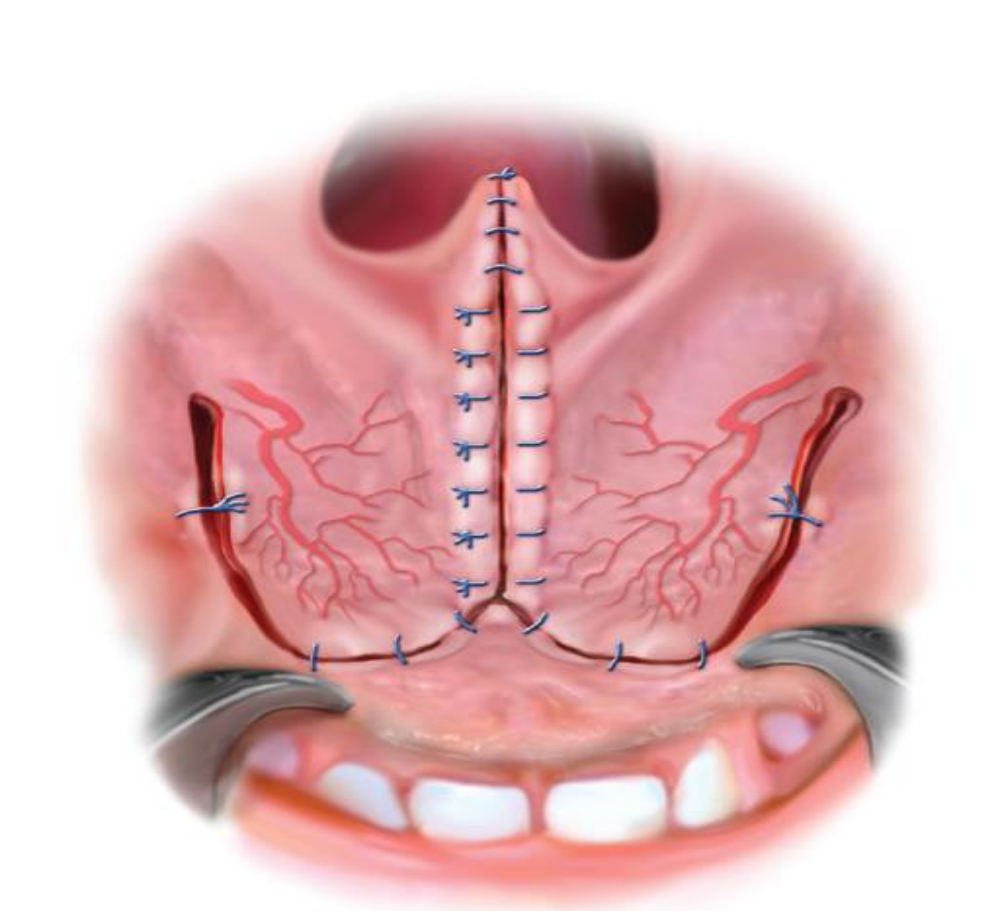
Procedure











Postoperative care

✓ Normal feeding can be resumed as soon as the infant is stable, with the exception that active sucking is to be avoided for at least 2 weeks.

✓ Elbow immobilizers maybe used.

✓ Regular follow-up.

Complications

- Fistula which most commonly forms at the junction of the hard and soft palate.

Secondary operative management

Alveolar bone grafting

Goals of alveolar bone reconstruction :

1. To provide bone support and adequate attached gingival width for teeth adjacent to the cleft.

2. To close the remaining oronasal fistula.

3. To improve support of the nasal alar base and lip on the affected side(s).

4. To allow normal eruption of the permanent teeth in the cleft area and providing sufficient bone for the placement of dental implants, where needed.

5. To create an appropriate ridge form to allow for optimization of orthodontic care and dental alignment.

6. To allow for stabilization of the premaxillary segment and to provide continuity of the maxilla as a whole.

7. To improve nasal symmetry.

8. To provide support for the upper lip.

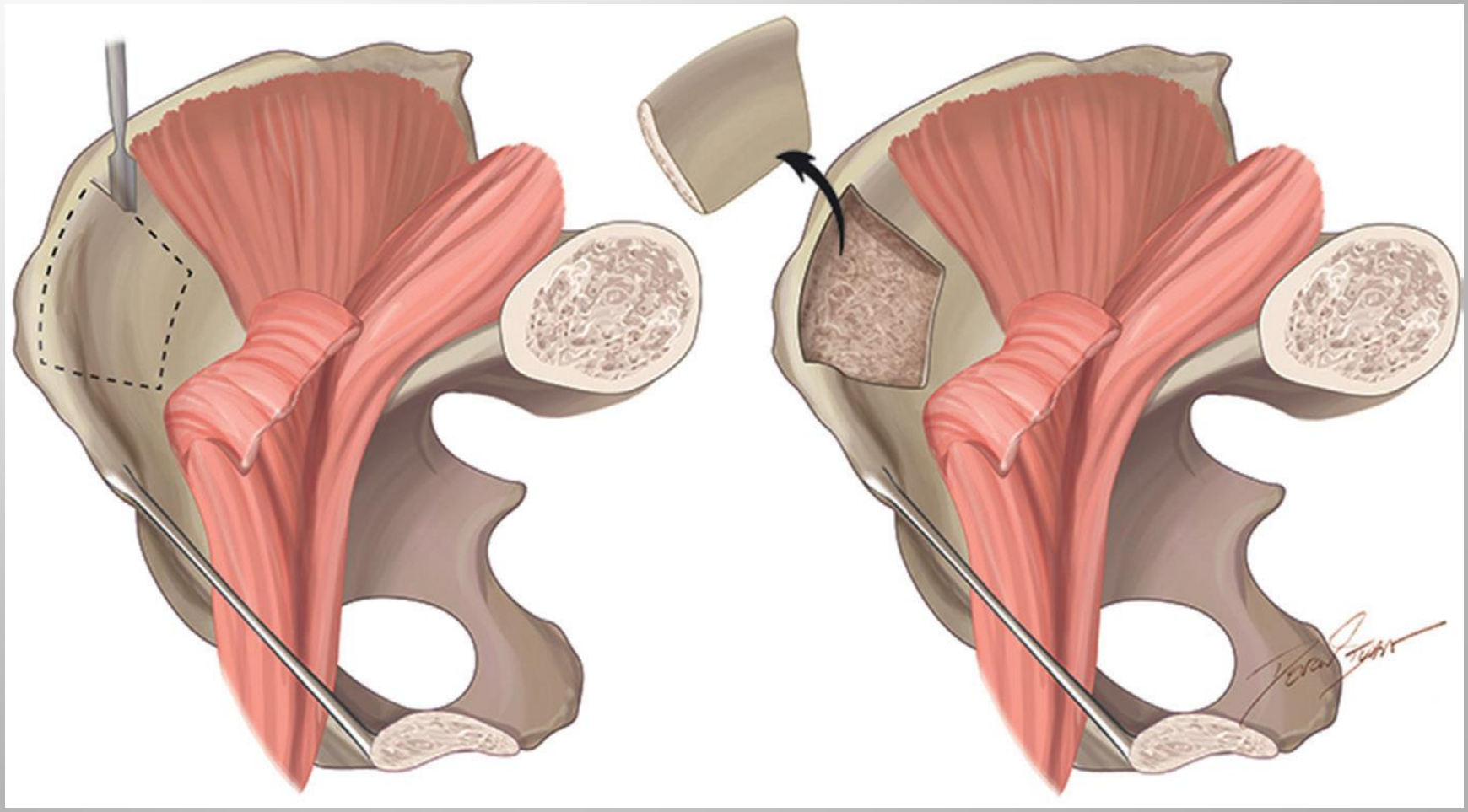
Timing of the alveolar bone reconstruction

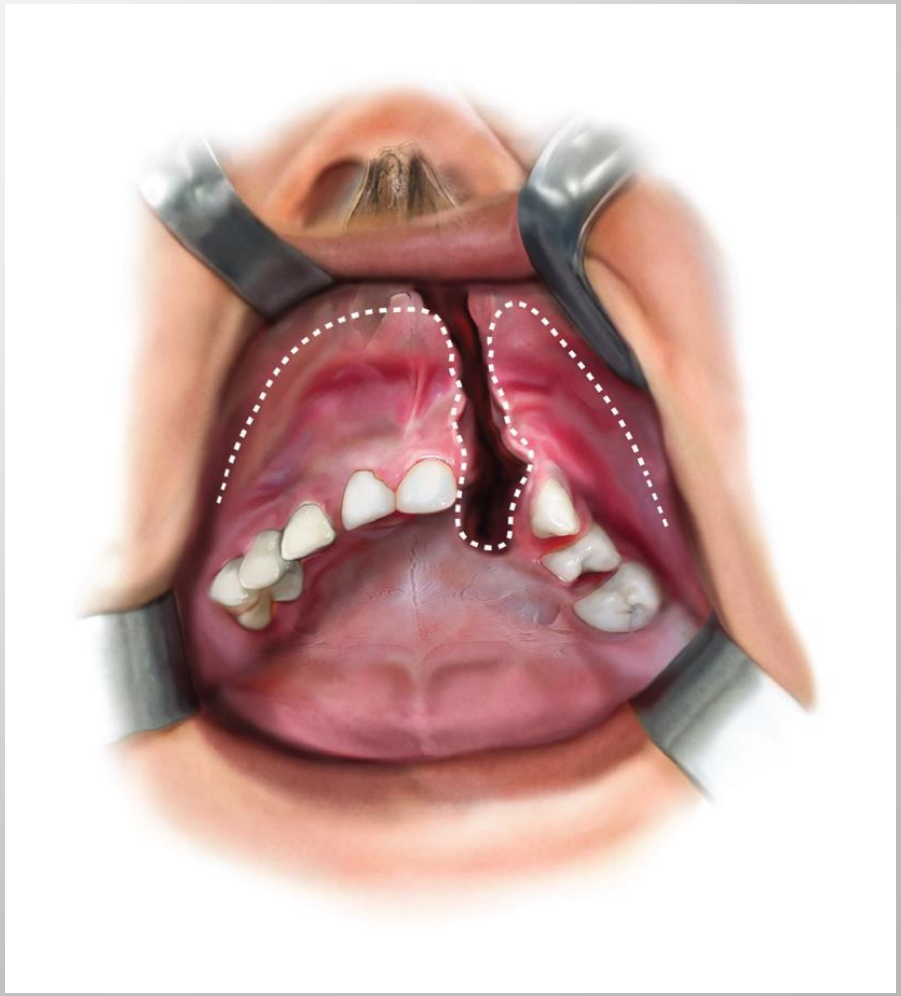
- Primary (early) grafting
- Secondary (delayed) grafting
- Late grafting; after 12 or 13 years of age, after the eruption of the permanent canine.

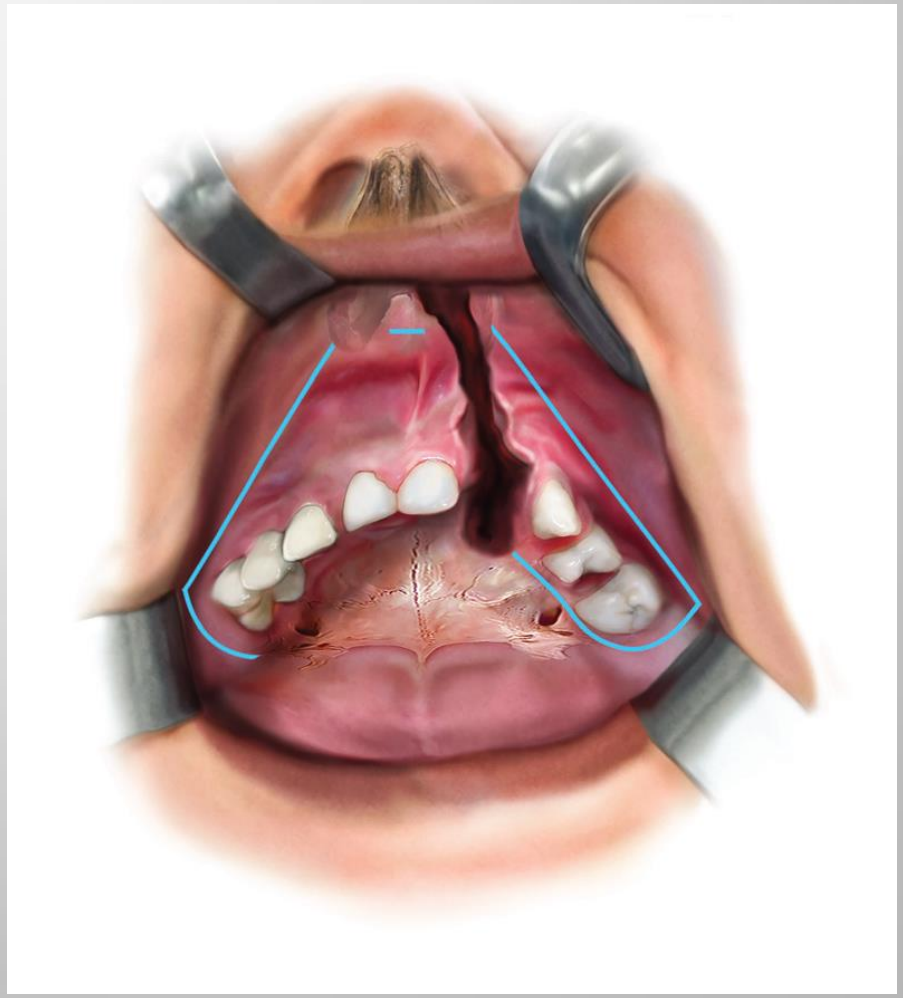
Sources of bone graft materials

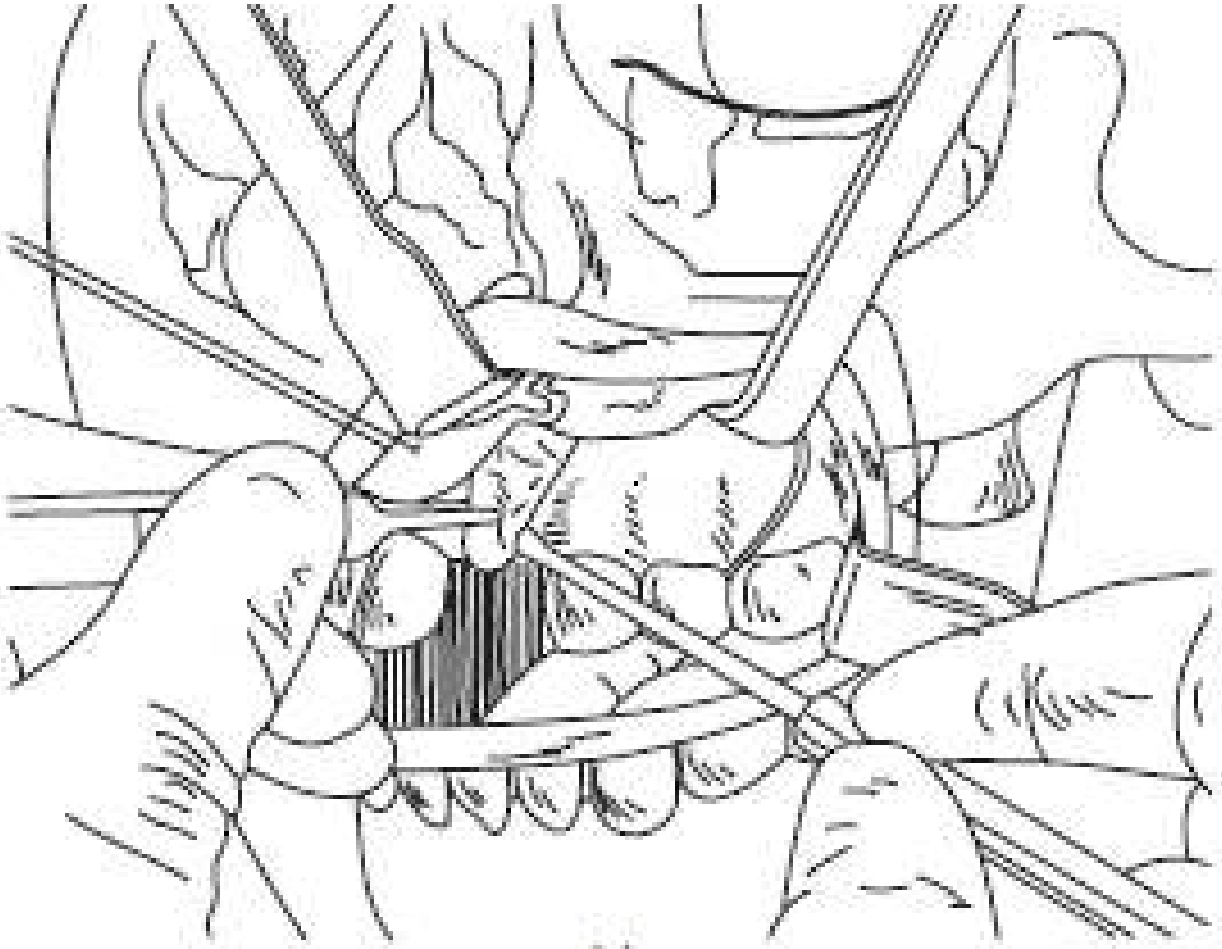
- Iliac crest
- Cranium
- Tibia
- Mandibular symphysis

- Bone graft substitutes; including demineralized freeze-dried bone (DFDB), freeze-dried bone (FDB), freeze-dried matrix (FDM), hydroxyapatite (HA) or tricalcium phosphate (TCP). Recently the addition of growth factors such as platelet-rich plasma (PRP) and platelet rich fibrin (PRF) with graft materials have used









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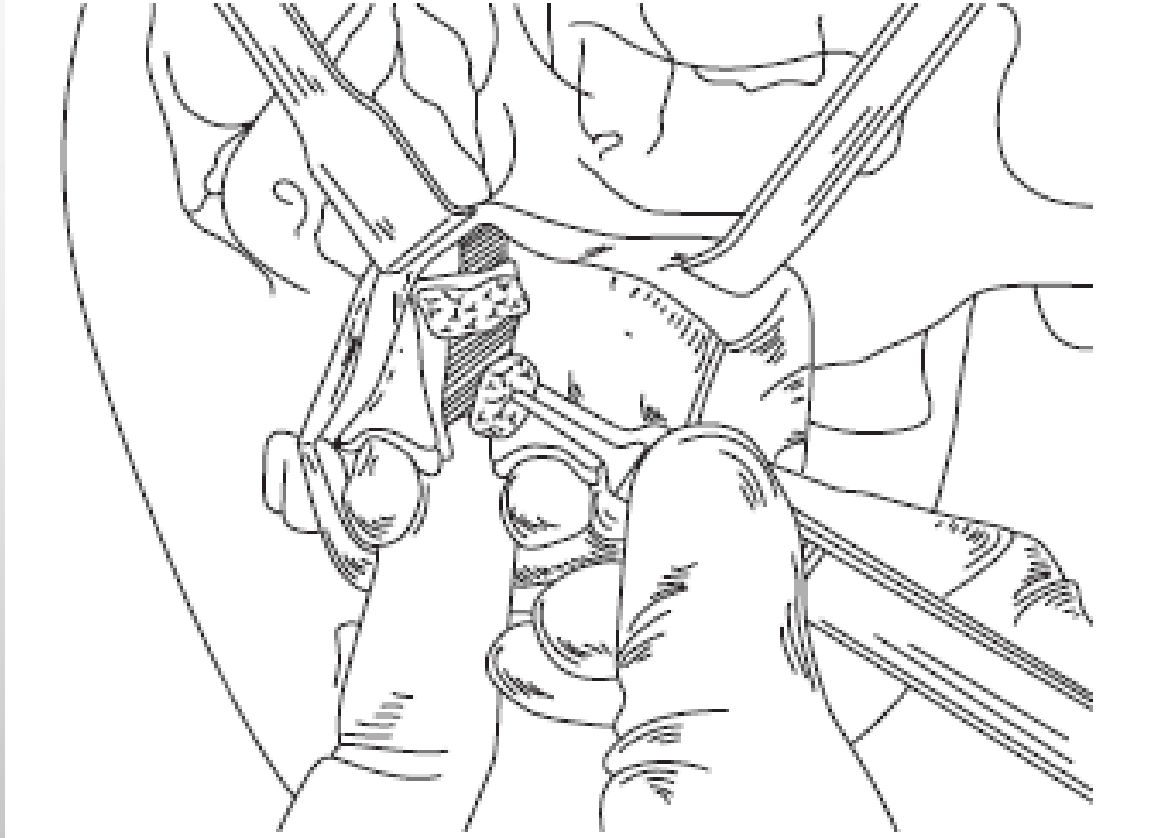

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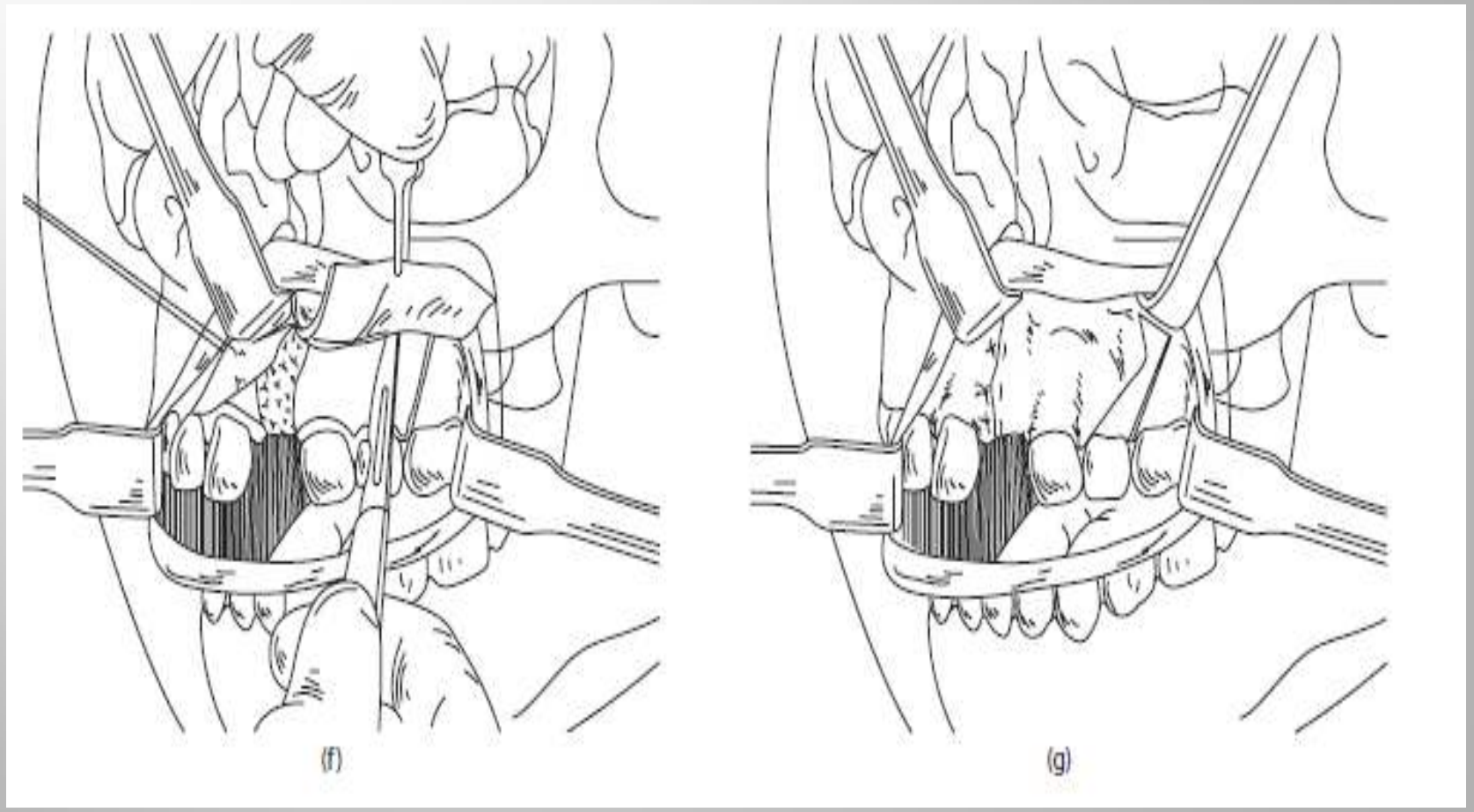
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Postoperative care

- Antibiotics
- xcellent oral hygiene and good nutrition
- soft diet for 2-3 weeks and to avoid any trauma to the operative site.

Complications

- Wound dehiscence.
- Infection.
- Persistent fistula.