ANTENATAL DIAGNOSIS OF CLEFT LIP AND PALATE:
APPROACH TOWARDS DIAGNOSIS

SmileTrain
Changing India One Smile At A Time

FEDERATION OF OBSTETRIC AND GYNAECOLOGICAL SOCIETIES OF INDIA
FOGSI

Smile Train and FOGSI have come together to bridge yet another gap of Cleft Lip and Cleft Palate. Experts from FOGSI and Smile Train viz, Fetal Medicine Experts, Neonatologists, Obstetricians, Gynaecologists, Plastic and Maxillofacial Surgeons, Paediatric Anaesthesiologists, Paediatricians, Speech Language Pathologists and Orthodontists form the team.

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Spectrum of orofacial clefts (OFCs)

Radiological assessment of fetal face

- The fetal face should be evaluated in a systematic method with the use of 3 orthogonal planes.
- This cross-sectional approach to imaging will maximize the detection of cleft lip and palate and other facial abnormalities.

Planes for evaluation of lip and palate

First Trimester

- Sagittal
- Axial
- Coronal

Second Trimester

- Coronal
- Axial
- Sagittal

2nd trimesteral -Coronal

- The coronal view is used to evaluate the integrity of the soft tissue of the fetal lips and appearance of the nostrils.

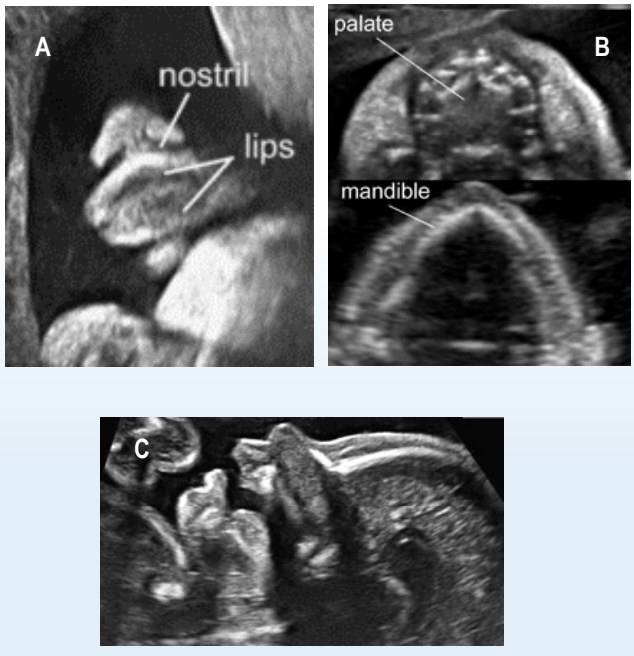
2nd Trimester- Axial

- The transverse (axial) view can be used to evaluate the fetal alveolar ridge that comprises the primary palate.

2nd Trimester- Sagittal

- The midsagittal plane is used to demonstrate the fetal profile, which highlights contour of the nose and lips.

FIGURE 1 2nd Trimestral.
A: Coronal, B: Axial, C: Sagittal

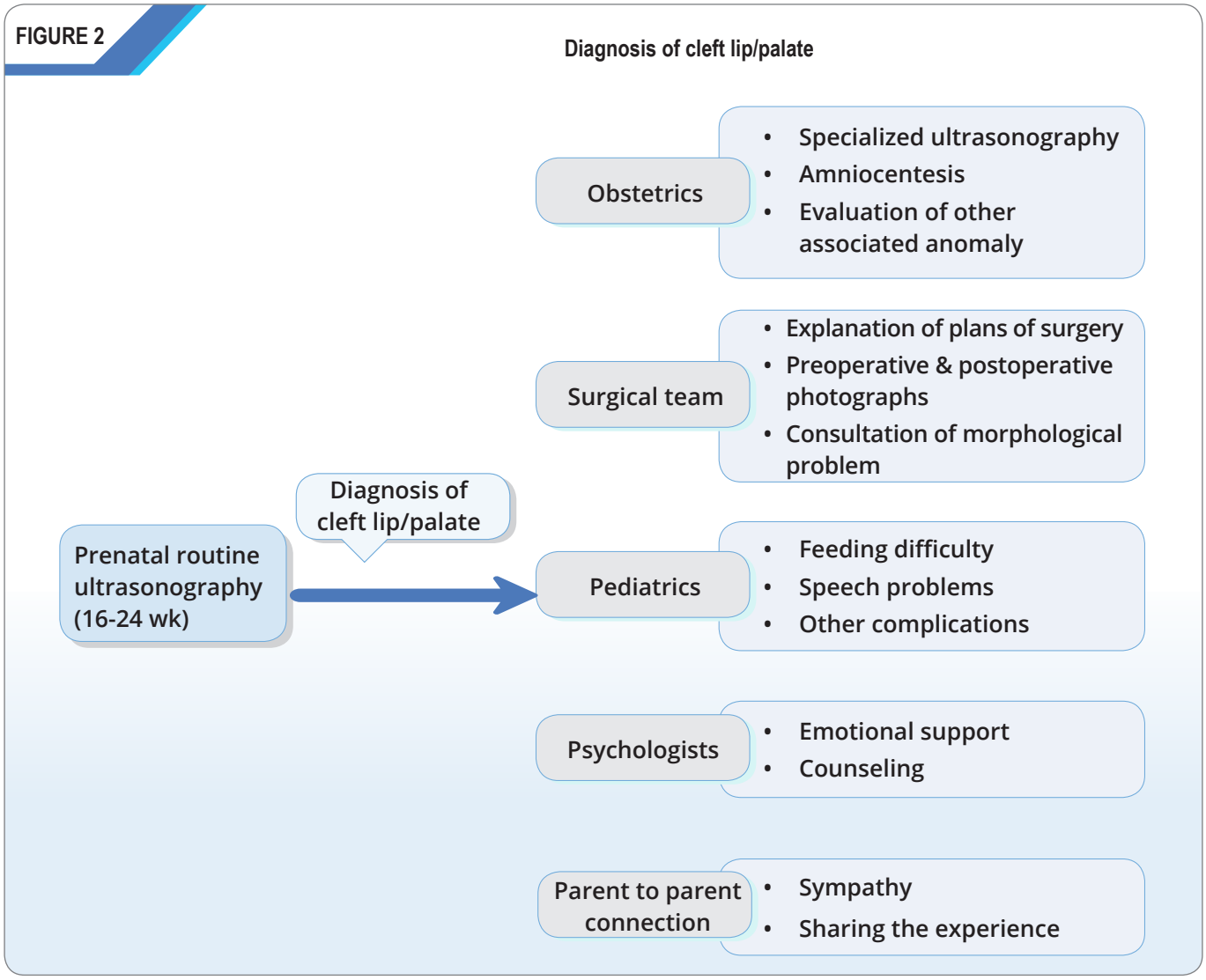


Antenatal management for cleft lip/ palate

- Refer to fetal medicine unit
- Thorough family history
- Detailed anomaly scan
- Look for associated anomalies (brain, cardiovascular)/ syndromic associations
- Amniocentesis for fetal Microarray
  - » Risk for chromosomal problems highest with isolated cleft palate, followed by bilateral cleft lip and palate. Minimal risk with unilateral cleft lip

Obstetric management remains unchanged

FIGURE 2



Immediate postnatal management

- Airway management
- Establish feeding
- Examine head to toe for other congenital malformations
- Psychological support for the mother to encourage emotional bonding
- Routine newborn care should not be forgotten – vitamin k , warmth, immunisation

Management of critical airway obstruction at birth

Non invasive

- Prone positioning, nasopharyngeal airway, nasal CPAP

Invasive

- Endotracheal intubation

Surgical

- Tongue –lip adhesion
- Mandibular distraction osteogenesis (moves tongue forward so as to open the airway)
- Tracheostomy

Establishing feeding

- An estimated 1 in 10 children born with cleft lip or cleft palate will die before their first birthday
- Many die from malnutrition due to cleft-related pre-operative feeding difficulties

Supporting feeding actions

- Cup, spoon or paladai (preferably with expressed breast milk, or with cow's milk)
- Encourage mothers to put the baby to breast for 5 min on each side even if sucking is inadequate. This will promote bonding as well as improve the milk supply
- Avoid bottles due to the risk of contamination and infection which will further compromise weight gain
- If bottle is used, ensure strict hygiene
- Enlarge teat hole with slit if bottle feeding
- Feed for 20-30 minutes only to avoid exhaustion
- Consider specialised feeding bottles if available

Rationale for pre-surgical infant orthopaedics (PSIO)

Currently not routinely recommended. There are very specific indications

Objective

- Reduce the severity of the original cleft deformity (enabling the surgeon to achieve better repair of the alveolus, lip and nose).
- Eliminating surgical columella reconstruction and the resultant scar tissue in BCLP.
- Significantly improve the surgical outcome of primary repair

Speech and language treatment protocol

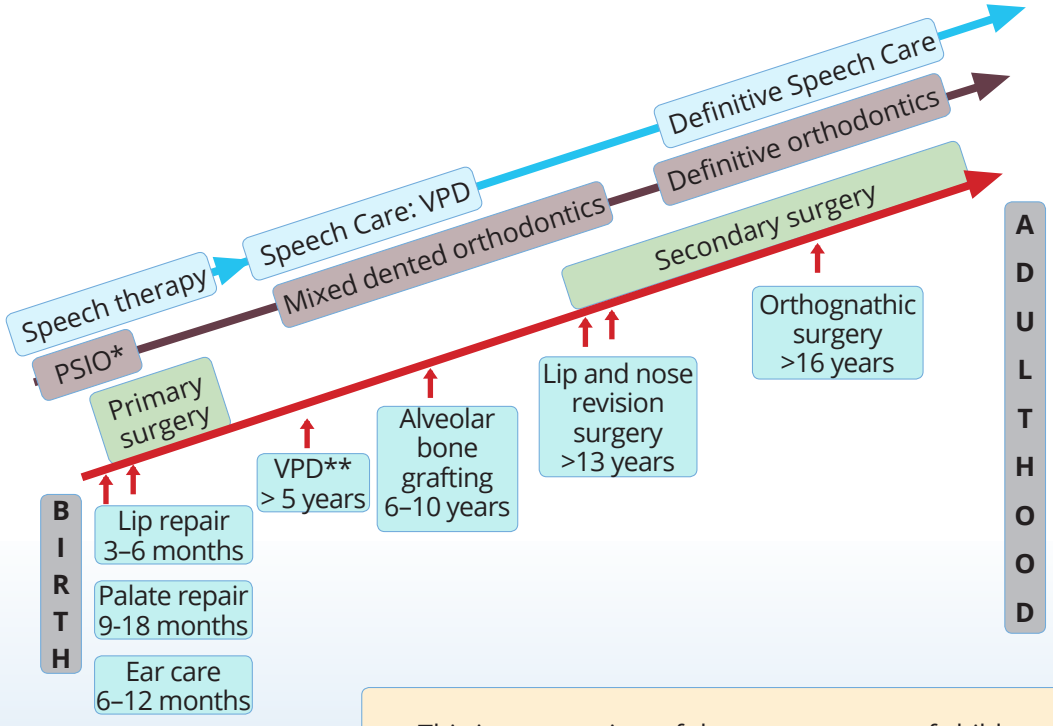
Age	Strategy
6 – 10 months (At the time of palate repair)	Communication screening, counseling parents about language development, and language stimulation
18 – 30 months	Language assessment and management through parent training
2½ – 3 years onwards	Institute based language intervention, if indicated. Speech sound (Articulation) assessment
2½/3 – 5 years	Articulation correction
5 years	Resonance assessment, and management, if indicated

Time lines for Cleft Treatment: Smile Train Recommendation

Age	What should be done
After birth	Check airway maintenance. Assessment of associated anomalies, establish feeding, share a treatment plan, pre-surgical infant orthopedics
3–6 months	Immunise as per National Schedule, monitor weight gain, developmental screening Lip surgery
6 months	Give complementary feeding advice
9–18 months	Palate surgery
6–12 months	ENT assessment to rule out middle ear effusion, referral to Pedodontist and Speech Pathologist - Periodic follow up.
2 years	Measure height and refer to nutritionist if below 3rd centile for age
2½/3 years – 5 years	Speech therapy – Articulation correction
>5 years	Velopharyngeal dysfunction (VPD) assessment and VPD surgery for speech improvement (may be needed in 10%–15% children). Speech therapy as required
7–11 years	Alveolar bone graft surgery. Orthodontic treatment. As required
Adolescence	Lip nose correction and orthognathic surgery as required

FIGURE 3

Overview: Birth to adulthood



- This is an overview of the management of children with cleft lip and palate.
- All children with cleft lip/cleft palate/ cleft lip and palate may not require all the procedures enlisted here. It differs from patient to patient.

* PSIO – Pre-surgical Infant Orthopedics; ** VPD – Velopharyngeal Dysfunction