

# ROLE OF 3-D ULTRASOUND IN CLEFT LIP AND PALATE



NEWS LETTER  
JAN-2005

ONE STEP  
AHEAD IN  
ULTRASOUND  
IMAGING...  
3D + 4D  
IMAGING

## FACILITIES:-

- WHOLE BODY-ULTRASOUND
- COLOR DOPPLER
- MAMMOGRAPHY
- BMD-DEXA
- CT-SCAN
- DIGITAL X-RAY
- ECHO CARDIOGRAPHY
- PATHOLOGY

## Add :

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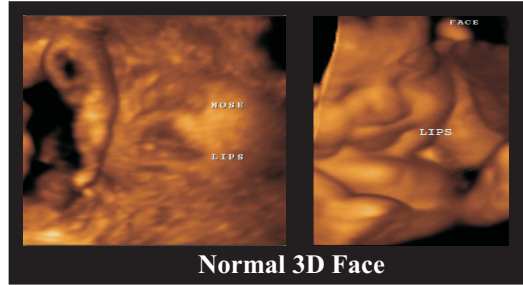
## Timings:

9.00 am to 8.00 pm

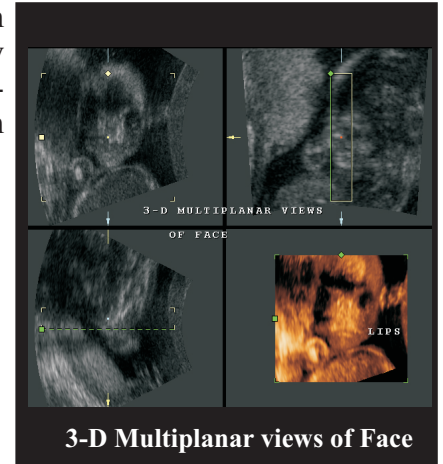
## References:

1. Hata T, yonehara T, Aoki S, Hara K, et al.  
Three dimensional sonographic evaluation of the foetal face.  
*AJR Am Roentgenol* 1998,170:481-483.
2. Lai TH, chang CH, Yu CH, Kuo PL, Chang FM. Prenatal diagnosis of a lobar holoprosencephaly two dimensional and three dimensional ultrasound  
*Prenat diagn* 2000 : 20:400-403
3. Merz E, Weber G, Bahlmann F, Miric F, Sani CD.  
Application of transvaginal and abdominal three dimensional ultrasound for the detection or exclusion of malformation of the foetal face.  
*Ultrasound obst gynecol* 1997: 9:237-243.

Prenatal evaluation of face and detection of facial anomalies is of utmost importance as they may be a result of syndromes such as chromosomal anomalies, genetic and nongenetic syndromes associated with multiple congenital anomalies of other systems.



Normal 3D Face

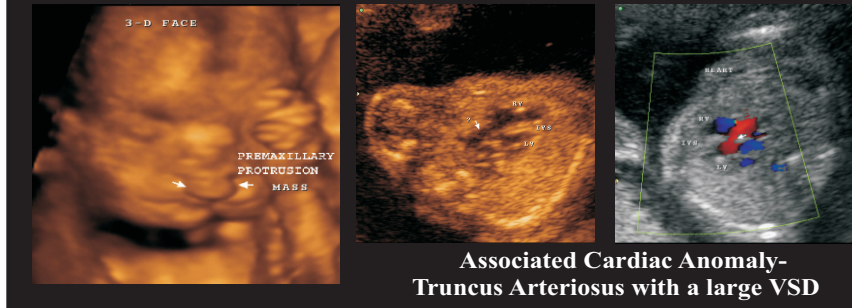


3-D Multiplanar views of Face

A number of studies have shown the benefits of 3D USG for evaluating fetal facial malformations including cleft lip, with or without cleft palate (1 2 3), using not only surface display, but also multiplanar reconstruction in three planes.

CASE - 1 :- 30 YRS OLD, 2ND GRAVIDA, For Routine Ultrasound Screening

## LARGE BILATERAL CLEFT LIP AND PALATE WITH PREMAXILLARY PROTRUSION



Associated Cardiac Anomaly-  
Truncus Arteriosus with a large VSD

3D USG not only confirms the diagnosis, but also provides additional information not detectable by 2D sonography. This included orbital hypoplasia, cranial ossification defects and a flat profile.

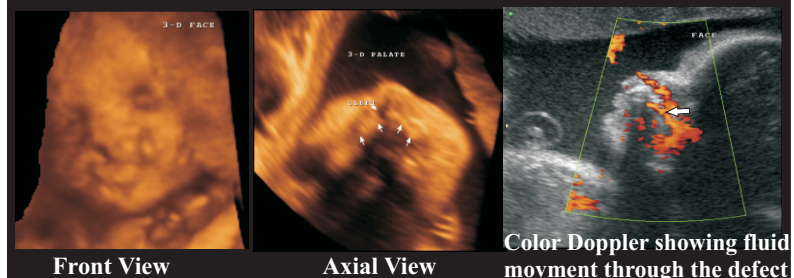
In addition to the above, Color flow imaging of a foetus with cleft palate helps. Amniotic fluid movements can be noted flowing through the defect, from the oropharynx to the nasopharynx. In a normal foetus, the amniotic fluid movement is noted in the nasopharynx, separated from the oropharynx inferiorly by the intact palate.

Large cleft lip and palate deformities can be picked up in the early 2nd Trimester. However, minor isolated cleft lip cannot be detected until early 3rd Trimester due to paucity of facial soft tissues.

Because of its unique display, 3D USG aids parents to understand the extent of the facial defects. 3D USG imaging of fetal tooth buds can accurately classify clefts. The parent's decisions may also be affected, because they can view the abnormalities on a recognizable 3D rendered image.

CASE - 2: 25 YRS OLD, 2ND GRAVIDA WITH POLYHYDRAMNIOS

## UNILATERAL CLEFT LIP AND PALATE



Front View

Axial View

Color Doppler showing fluid  
movement through the defect