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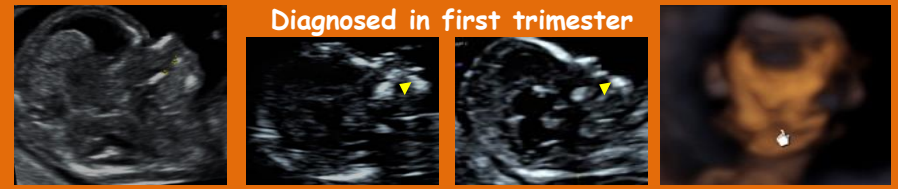
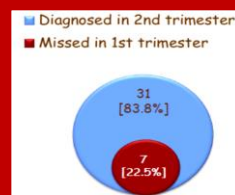
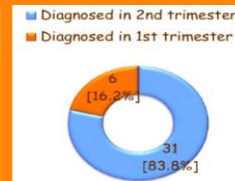
Assessment for the presence of the "Maxilla gap" at the first trimester scan - time to introduce another value-added marker in the first trimester

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Presence of "Maxillary gap" in the mid-sagittal section of the fetal face in the 1st trimester has been proposed as a marker for early detection of cleft lip and palate (CLP).

Objective: To evaluate the presence of "Maxillary gap" in fetuses with cleft palate at the 1st trimester scan.

Methods and materials: A retrospective analysis of all fetuses diagnosed with cleft palate and/or lip (CLP) from April 2014 to March 2017 was done. The archived ultrasound images of the mid-sagittal section of the fetal face (NT image) of all the CLP fetuses diagnosed prenatally & confirmed in the second trimester and/or postnatally were analysed. Presence of "Maxillary gap" sign was assessed in the NT images in the ones that were not detected at the first trimester scan.



4 were associated with extra-facial abnormalities and the 2 had a previous pregnancy affected by CLP. 3 of these were unilateral and 3 bilateral. **In all of them, a detailed examination of the maxilla was done either due to the presence of other abnormalities or due to previous history of CLP.**



5/ 7 (71.4%) of these were isolated. 2 were bilateral 5 were unilateral. Retrospective analysis of the 7 "missed CLP" fetuses was performed on the stored images of the mid-sagittal section of the fetal face, taken at the first trimester, to measure the NT. **All the images showed the presence of the 'Maxillary gap'.**

Conclusion: A careful examination of the maxilla panning the probe side to side to look for the disruption of the maxilla as suggested by the 'Maxillary gap' sign at the first trimester would increase the detection rate of CLP, especially in isolated cases.



On further analysis of the images, we found that not all images showed the "Maxillary gap" sign. The "Maxillary gap" was more evident while panning the probe side to side from the mid-sagittal section of the fetal face (NT image).

Discussion: Many studies have described the use of 3D imaging as ideal to diagnose first trimester cleft palate by obtaining a 30° sweep from side to side of the mid-sagittal fetal face to obtain an 'NT volume'. This can be done manually during a routine 2D scan by panning the probe side to side and can be reassessed immediately using sine loop unlike 3D.

References:

- Chaoui R et al. Maxillary gap at 11-13 weeks' gestation: marker of cleft lip and palate. *Ultrasound Obstet Gynecol.* 2015 Dec;46(6):665-9
- Sepulveda et al. First-Trimester Assessment of Fetal Palate. *J Ultrasound Med* 2012; 31:1443-1448