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# GROWTH PATTERN OF FETAL FACIAL STRUCTURES AND ULTRASOUND DIAGNOSIS MEANS FOR OROFACIAL ANOMALIES

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## ABSTRACT

A clinical case of an healthy fetus ultrasound study, focused on the facial features is presented suggesting a possible protocol for an early diagnose of facial variations with potential functional repercussions. The application of this type of protocol in the prenatal routine screening can turn possible a more objective growth evaluation of facial structures and, consequently, the detection of alterations on their development.

***Keywords:*** orofacial anomalies, prenatal ultrasonography, prenatal diagnosis, dentistry.

## INTRODUCTION

Ultrasound study of fetal face has become important to the prenatal routine screening (Goldstein I, 2010), especially in high-risk pregnancies (Pretorius DH, 1995), since its characterization can serve as a diagnostic tool when a disproportionate growth of fetal facial structures is detected (Rotten and Levaillant, 2004). In these kind of cases can be suspicious the presence of several chromosomal anomalies or even associated syndromes with abnormal facial development (Jones KL, 1997; Merz E, 1997). Therefore, a relevant number of ultrasound studies on facial parameters have proposed different nomograms which pretend to contribute for confirming facial dysmorphism (Goldstein I 1999; Chitty LS, 1993; Gull I, 2005).

The detection of fetal facial anomalies by prenatal ultrasound, either isolated or associated with polymalformative states of longer survival, can allow the planning of specific perinatal and postnatal measures by a multidisciplinary team, including the dentist, improving the resolution and the management of the potential physical disabilities present (Rotten and Levaillant, 2004). The purpose of this study is precisely to alert for ultrasound definition of a more detailed and objective fetal facial study in order to identify facial dysmorphism with an ultrasound clinical example of a healthy fetus.

For this study was considering a clinical case of a healthy fetus, from a single spontaneous pregnancy of a 41-year-old Caucasian woman that was referred to an institutional center specialized in prenatal diagnosis for routine prenatal screening.

## RESULTS AND CONCLUSIONS

In this case the first-trimester screening detected a low risk for trisomy 21. Ultrasound revealed no anomalies or growth restrictions. The chorionic villi biopsy showed a normal karyotype (46, XX). In the second trimester ultrasound, at 20 weeks of gestation, a more detailed study of the fetal face was performed after informed consent. That study comprised an evaluation of the facial profile and the measurement of the maxilla, mandible, nasal bone, and philtrum in the midsagittal plane. The facial study detected a normal anatomy, with no subjective anomalies on the shape or size of the facial structures.

The inclusion of this protocol in routine ultrasound screening may allow a better knowledge of growth pattern of the orofacial structures mentioned and, therefore, detecting possible orofacial anomalies when development alterations are identified.

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