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ABSTRACT FINAL ID: None

TITLE: Evaluation of ossification timing of sacral vertebrae by transabdominal sonography in the second trimester of pregnancy

AUTHORS (FIRST NAME, LAST NAME): Behnaz Moradi¹, Abbas Ghanbari⁴, Maryam Rahmani³, Mohamad Ali Kazemi⁵, Ahmad R. Tahmasebpour²

INSTITUTIONS (ALL):

1. Radiology , Women' Yas Hospital, Tehran University of Medical Sciences, Tehran, Iran (the Islamic Republic of).
2. Ultrasound, Iranian Fetal Medicine Foundation, Tehran, Tehran, Iran (the Islamic Republic of).
3. radiology, Tehran University of Medical Sciences, Tehran, Iran (the Islamic Republic of).
4. Radiology , , Imam Khomeini Hospital, Tehran University of Medical Sciences, Tehran, Iran (the Islamic Republic of).
5. Radiology , Amiralam Hospital, Tehran University of Medical Sciences, Tehran, Iran, Iran (the Islamic Republic of).

ABSTRACT BODY:

Objectives: The aim of this research is to determine the timing of sacral vertebrae ossification in order to guide the clinicians to early and reliable diagnosis of sacral region anomalies like as caudal regression syndrome and delayed ossification in some skeletal dysplasia.

Methods: This cross-sectional study was carried out on 292 normal single pregnancies at gestational ages ranged 14 to 25 weeks. The sacral region was evaluated on a coronal plane, in spine up position. Changing probe orientation between sagittal and coronal planes during continuous viewing could help in confirming the presence of the ossification center. Then the level of the central and lateral ossification centers was recorded in each gestational age.

Results: Ossification occurred in a predictable caudal direction pattern. As evident in the table neural arch ossification centers were visualizes later (Table). S1 and body of S2 were visualized in all cases at 15-17 weeks+ 6 days and arch of S2 in all fetuses with 17 weeks of gestational age. Body of S3 was detected in all cases at 17 weeks and its arch at 20 weeks. All fetuses at 18 weeks of gestational age show sacral ossification in body and arch of S4. Ossification in S5 firstly was found at 18 weeks and progressively with a higher percentage during the following weeks of the gestational age (Figure). The gender of fetuses had no statistically significant impact on ossification timing.

Conclusions: These data show that by using recent high resolution ultrasound machines sacral vertebral ossification centers can be identified in earlier gestational age which can help in earlier detection of sacral pathologies

Additional details

KEYWORDS: Growth, Second trimester, Reference range.

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