Does fetal gender affect nuchal skin-fold thickness?

Poster No.: C-0927
Congress: ECR 2011
Type: Scientific Paper
Authors: E. Ozkavukçu, N. Haliloglu; Ankara/TR
Keywords: Obstetric imaging, Foetal imaging, Ultrasound, Screening
DOI: 10.1594/ecr2011/C-0927

Any information contained in this pdf file is automatically generated from digital material submitted to EPOS by third parties in the form of scientific presentations. References to any names, marks, products, or services of third parties or hypertext links to third-party sites or information are provided solely as a convenience to you and do not in any way constitute or imply ECR's endorsement, sponsorship or recommendation of the third party, information, product or service. ECR is not responsible for the content of these pages and does not make any representations regarding the content or accuracy of material in this file.

As per copyright regulations, any unauthorised use of the material or parts thereof as well as commercial reproduction or multiple distribution by any traditional or electronically based reproduction/publication method ist strictly prohibited.

You agree to defend, indemnify, and hold ECR harmless from and against any and all claims, damages, costs, and expenses, including attorneys' fees, arising from or related to your use of these pages.

Please note: Links to movies, ppt slideshows and any other multimedia files are not available in the pdf version of presentations.

www.myESR.org
Purpose

Nuchal skin-fold thickness (NFT) measurement in the second-trimester has been widely used as a sonographic screening test for Down syndrome. It was first described by Benacerraf et al. in 1985. The upper limit of normal NFT has been reported to be 6 mm in many studies.

The aim of our study was to find out whether fetal gender affects second trimester NFT measurements in normal fetuses.

Methods and Materials

This is a prospective study which was held in a single university hospital between November 2009 and April 2010. Detailed second-trimester US examinations were performed in 419 women between 18-24 weeks of gestation. All US examinations were performed by a radiologist who is experienced in fetal imaging. Fetuses with enlarged NFT measurements, major congenital anomalies, and patients with multiple gestations were excluded from the study. Pregnancy outcome was obtained from the hospital files. The fetuses with normal fetal US findings that have normal physical examinations right after birth were assumed to be normal.

The study group was divided into two groups, according to fetal gender (224 male, 195 female). All US examinations were performed using a SSA 770A ultrasound system (Toshiba, Tokyo, Japan) with a 3.5-MHz curvilinear transducer. After obtaining an axial view of the cranium passing through the cerebellum and cavum septi pellucidum, NFT was measured from the outside of the external table of the occipital bone to the outer edge of outlying skin, using electronic calipers (Figure).

Statistical analysis was performed using SPSS statistics 15.0 version (SPSS Inc., Chicago, IL, USA). Mann Whitney test was used to compare the NFT measurements between male and female groups.

Images for this section:
Fig. 1: Transcerebellar axial US view showing the nuchal skin-fold thickness measurement. Cerebellum (C), cavum septi pellucidi (CSP), and middle cerebral peduncles (MCP) are shown. Calipers are placed at the outside of the external table of the occipital bone, and the outer edge of the outlying skin.
Results

NFT values ranged between 3-6 mm and 2.3-6 mm, in male and female fetuses, respectively. Mean NFT values were 4.61±0.75 mm and 4.34±0.78 mm for male and female fetuses, respectively. Median NFT value for male fetuses was 4.6 mm, whereas it was 4.4 mm for females.

Using Mann Whitney test, statistically significant difference was denoted between male and female groups' NFT measurements (P=0.001, P < 0.05 was considered as statistically significant).

Conclusion

In conclusion, ultrasonographic detection of Down syndrome can be challenging. To assess the fetal risk for Down syndrome, maternal serum AFP levels and ultrasonographic parameters are used in combination. NFT is generally accepted as the single best ultrasonographic parameter for detecting Down syndrome. Moreover, ultrasonographic detection of Down syndrome can be improved by using a combination of gender-specific biometric parameters. In our opinion, to reduce the false-positive risk assessment rate in male fetuses, one should always keep the effect of gender on NFT measurements in mind, especially in the population that has borderline NFT measurements (6 mm) and has no other anomalies.

References


Personal Information