

Diagnostic Accuracy of Ultrasonography in Detection of Fetal Neural Tube Defects in Polyhydramnios

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Abstract

Objective: The objective of the study was to determine the sensitivity and specificity of ultrasonography in the diagnosis of fetal neural tube defects in cases of polyhydramnios.

Study Design: Descriptive type of study.

Place and duration of study: It was conducted in Radiology department of Mother and Child Hospital (MCH) in collaboration with gynaecology department of Mother and Child hospital (MCH), Pakistan Institute of Medical Sciences, Islamabad. Patients selected for study was both indoor and outpatient department cases referred for ultrasonography. Duration of study was one year.

Materials & Methods: In this study sixty (60) cases with the clinical suspicion of polyhydramnios were included. 3.5 Mega Hertz convex transducer was used for sonological assessment of these patients. Ultrasound findings were compared with the fetal outcome after delivery. Data was analyzed on SPSS 10.0 version and 2 x 2 tables were used to calculate test performance characteristic of Ultrasound finding.

Results: Total number of patients in our study was 60. Out of these 40 patients (66.6%) were ultrasound positive for neural tube defects which were confirmed by comparison with fetal outcome after delivery and considered true positive, while no patient was false positive. Out of these 18 (30.0%) were true negative while 2 (3.4%) were false negative, as confirmed subsequently by comparison with outcome after delivery.

The sensitivity, specificity, positive, negative predictive values and diagnostic accuracy of ultrasonography for neural tube defect in polyhydramnios was 95.2%, 100%, 100%, 90% and 96.6% respectively.

Conclusion: The sensitivity, specificity, positive predictive values and overall diagnostic efficacy of ultrasonography make it a modality of choice for detection of fetal neural tube defects in cases of polyhydramnios. It should be used as a primary screening investigation in patients with high clinical suspicion, since it is a safe, cost-effective, easy to perform and radiation free imaging technique.

Key Words: Neural tube defects, Ultrasonography, Polyhydramnios.