

# Journal article

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JOURNAL ARTICLE REVIEW Examination of Intracranial Translucency as a Marker for Early Detection of Open Spina Bifida Gabriele Tonni, PhD, MD  
JOURNAL/VOLUME: 5 NUMBER: 29 PAGES: 3 SUMMARY OF PROBLEM TO BE INVESTIGATED: SUMMARY OF PROBLEMS TO BE INVESTIGATED This article primarily pertains to sonographic technique meant to envisage relevant observable translucencies that are felt during certain trimesters of pregnancies. The main aim was to determine the development of the brain structures so that appropriate clarifications could be made contrasting both normal and abnormal structure of the brain formation. The following research questions were used to guide the research process; 1. Can sonographic techniques be used to calculate the exact maternal risk during echogenic process? 2. What is the appropriate landmark in determining the normal and abnormal brain structure during fetal formation? 3. What is the significance of determining the fetal brain formation between the first few weeks and the last few weeks? 4. What are the specific differences in the outcomes of nuchal translucency screening, maternal screening and combine screening in relation to the brain development of a fetus? 5. Is there any quality assurance concerning fetal prenatal Down syndrome during screening? REVIEW OF THE LITERATURE Lachman et al. categorically illustrate how sonographic studies relating to the brain's posterior can be achieved through the use of tilted axial view. In addition to this, there were some positive results when OSB was used to demonstrate how the fourth ventricle is delineated by a thin membrane (Lachman et al. 103-106). The knowledge of anatomical landmarks is quite significant to sonographers as it can be applied by the management to the provision of counseling (Chaoui et

al. 609-612). The posterior brain area can be easily visualized at the same point with midsagittal essentially for aneuploidies screening. Moreover, the axial plane can be retrieved through trans-vaginal, anterior or other approaches done together for respective examination (fourth ventricle).

**MATERIALS/METHODS AND ANALYSIS OF METHODS** In order to achieve appropriate results in relation to the fact findings of this research, different methods were used; however, the main approach involved the use of sonographic techniques. Through this method, examination was done with an aid of a high resolution ultrasound system. In this regard, sonographic systems such as harmonic imaging high resolution, wide aperture, which use the applications of cross beam with speckle reduction and dynamic range, were used. In addition, the scanning methods applied enabled the visualization of the midsagittal section and the correct NT measurements were therefore found to be between 84 to 84 mm where fetal images could be magnified to approximately 75% (Tonni 216-219). An alternative method was the use of two calipers where one is placed at the internal echogenic while another is placed close to the fetal skin where the nasal bones can easily be visualized. Furthermore, sonography can also be applied in this case as a means of traversing a statistical model and facilitating the calculation of exact material risks to the aneuploidies. These aneuploidies are variously classified as trisomy 21, trisomy 18 and trisomy 13 respectively and allow for an upward probe to enhance a reflection angle method of evaluation. It was therefore discovered that the midsagittal section of normal fetuses and the cisterna magna extend the entire ventricle and are basically subdivided by an epithelium membrane visualized as trans versing

translucently fields with fluid during 11 to 13 weeks period (Tonni 216-219).

**DISCUSSION OF THE FINDINGS AND APPLICATION TO PRACTICE** This research was carried out after monitoring different trimesters to find out how the brain actually develops to eventually gain normalcy. However quite a number of fact findings were used. Notably, when a sample size of 200 normal fetuses aged 11 and 13 weeks was examined, it was discovered that they were characterized by having an anteroposterior diameter of approximately 2.0 mm; in addition, the echogenic lines of the nasal bone were made visible and the cross-sections of the nuchal tissues were measured. This was made possible by placing a clipper resending the soft tissues at the top while another was made at the bottom making it much easier for the sonographer to determine the variation difference by simply doing a measurement. Additionally, there was clear evidence that the marginal section of the normal fetus always had their cisterna magna extended along the whole surface of the ventricle and would only be separated by an epithelium piece of membrane. (Tonni 216-219)

**EVALUATION OF THE CREDIBILITY OF THE STUDY:** The research was found to be quite credible since the results provide significant information to the sonographers pertaining to the detection of OSB and shows the various radiology operation and implementation management authorities, the necessity of counseling pregnant mothers. Moreover, it also provides crucial information on obstetrical patients and comparable needs to assist their progress (Tonni 216-219).

**Works Cited**  
Chaoui, Rabih, and Kypros Nicolaides. "Detecting Open Spina Bifida at the 11-13 Week Scan by Assessing Intracranial Translucency and the Posterior Brain Region: Mid-Sagittal or Axial Plane?" *Ultrasound Obstet Gynecol* 38. 6

(2011): 609-612. Print. Lachmann, Robert, Rabih Chaoui, Jose Moratalla, Gemma Picciarelli, and Kypros H. Nicolaides. "Posterior Brain in Fetuses with Open Spina Bifida at 11 to 13 Weeks." *Prenatal Diagnosis* 31(2011): 103-106. Print. Tonni, Gabriele. "Examination of Intracranial Translucency as a Marker for Early Detection of Open Spina Bifida." *Journal of Diagnostic Medical Sonography* 29. 5 (2013): 216-219. Print.