

Cystic Hygroma: Ultrasound Appearance In The 1st Trimester: Sonographic and Karyotypic Characteristics, Ultrasound Characteristics, and The Fate of The Pregnancy

Yassine El Baraka, Kamal aboulfath, Karam Saoud, Nissrine Mamouni, Sanaa Errarhay, Chahrazed Bouchikhi and Abdelaziz Banani.

University Sidi Mohammed Ben Abdellah, Service de Gynécologie-Obstétrique I, CHU Hassan II, Fès, Maroc

Abstract: *The ultrasound study of the fetal neck at the end of the first trimester allows us to establish a direct relationship between direct relationship between neck anomalies (cystic hygroma or nuchal hyperclarity and the existence of chromosomal anomalies [1,2]. Since the systematization of this ultrasound analysis, the antenatal diagnosis of cystic hygroma has become more frequent with a prevalence in the general population, in the first trimester of pregnancy from (one pregnancy out of 285). 0.35% (one pregnancy out of 285) to 0.75% (one pregnancy out of 133). reporting the case of a cystic hygroma diagnosed at 19 weeks of amenorrhea*

Keywords: Cervical hygroma; Cystic hygroma ; Nuchal hyper clarity; First trimester

INTRODUCTION:

Ultrasonically, the distinction between cystic hygroma and nuchal hyperclarity is made by:

- for HK: a retro- and laterocervical anechogenic space (jugular sacs) with one or more medial and Para median sagittal partitions forming logettes (in sagittal and especially transverse section), in the absence of cranial and/or spinal abnormalities [6];

- for HCN: a measurement greater than the 95th percentile (for gestational age) of the anechogenic zone between the skin and the occipitovertebral structures, present in all fetuses between 11 and 14 SA (in sagittal section) [6]. It should be noted that any major HCN (> 5-6 mm) is accompanied by partitions visible in axial which does not make it a HK, which is characterized by bilateral cervical lymphatic extension.

OBSERVATION :

The patient was 34 years old, with no notable pathological antecedents; G3P3: three children delivered by vaginal delivery; the first two children had good psychomotor development, the current pregnancy was not followed by an apparently normal course, in particular no sign of hypertension; the patient was admitted to the emergency room for abdominal and pelvic pain; the clinical examination was without particularity.

Obstetrical ultrasound: monofetal pregnancy not evolving; negative cardiac activity; presence of a huge cystic hygroma; biometry at 19 SA

Decision to induce labor; patient delivered by vaginal delivery without incident

DISCUSSION

The literature is not always very explicit regarding the ultrasound definition of HK and its distinction from HCN.

for some, the definition of HK requires the presence of sagittal septa [3,6,13,15,16]; for others, this element is not essential, the distinction being made on the lymphatic aspect of the edema and its bilateral position (jugular lymphatic sacs) versus strict posterior position for HCN [5,10,11].

For Malone et al [3], it is clear that HK forms a distinct entity from HCN, because of its much more frequent association with aneuploidy (51% of cases) and its much poorer prognosis (only 17% result in the birth of a child without malformation). He therefore advises that in case of discovery of an HK in the first trimester not to use the combined risk calculation, and to perform directly a fetal karyotype directly.

Ducarme et al [6] make the same observation but question the notion of a possible anatomical continuum between the two: HK would be the most severe form of neck anomalies in the first trimester with an intermediate stage which would be represented by HCN.

This hypothesis would be reinforced by the observation of the increase in the rate of unfavorable pregnancy outcomes in case of increased neck thickness.

Molina et al [15] confirm this hypothesis of anatomical continuum: all fetuses with increased NT would also have septa, provided that the study is performed with the right study performed with the right incidence (suboccipito-breast cross-section). suboccipito-bregmatic cross-section), partitions perpendicular to the ultrasound axis and gain correctly adjusted.

The HK would not be a separate entity from the HCN and it would be necessary to perform the combined risk calculation before karyotype. This would support the theory that the characterization of HK is based on the location of the edema and not on the presence or absence of septa.

CONCLUSION:

When cystic hygroma is found on first trimester ultrasound the poor prognostic factors for prenatal counselling are: nuchal translucency greater than 6 to 6.5 mm the presence of hydrops, the presence of one or more associated ultrasound anomalies, an abnormal karyotype, a normal karyotype with persistence or increase of HK and/or hydrops on ultrasound monitoring.

Reference:

[1] Souka AP, Krampfl E, Bakalis S, Heath V, Nicolaides KH. Outcome of pregnancy in chromosomally normal fetuses with increased nuchal translucency in the first trimester. *Ultrasound Obstet Gynecol* 2001;18:9—17.

[2] Kagan KO, Avgidou K, Molina FS, Gajiwaska K, Nicolaides KH. Relation between increased fetal nuchal translucency thickness and chromosomal defects. *Obstet Gynecol* 2006;107:6—10.

[3] Malone FD, Ball RH, Nyberg DA, Comstock CH, Saade GR, Berkowitz RL, et al. First trimester septated cystic hygroma: prevalence, natural history, and pediatric outcome. *Obstet Gynecol* 2005;106:288—94.

[4] Gedikbasi A, Oztarhan K, Aslan G, Demirali O, Alpaslan A, Akyol A, et al. Multidisciplinary approach in cystic hygroma: prenatal diagnosis, outcome and postnatal follow up. *Pediatr Int* 2009;51:670—7.

[5] Kharrat R, Yamamoto M, Roume J, Couderc S, Vialard F, Hillion Y, et al. Karyotype and outcome of fetuses diagnosed with cystic hygroma in the first trimester in relation to nuchal translucency thickness. *Prenat Diagn* 2006;26:369—72.

[6] Ducarme G, Graesslin O, Alanio E, Bige V, Gaillard D, Gabriel R. Hyperclarté nucale et hygroma cervical au premier trimestre de la grossesse : diagnostic prénatal et devenir néonatal. *Gynecol Obstet Fertil* 2005;33:750—4.

[7] Nicolaides KH. Nuchal tranlucency and other first-trimester sonographic markers of chromosomal abnormalities. *Am J Obstet Gynecol* 2004;191:45—67.



ultrasound image of cystic hygroma



image of cystic hygroma