

OBSTETRIC ULTRASOUND

Incidence of Fetal Echogenic Intracardiac Foci in a Hispanic Population

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Echogenic intracardiac foci (EIF) are small areas of increased echogenicity inside the fetal ventricles. When isolated, they are considered to be a normal finding with prevalence differing among ethnic groups. It has been described as a weak marker for trisomy 21 and other chromosomal anomalies. Little information exists regarding the incidence of these foci among Hispanic fetuses. We examined prospectively 485 normal fetuses between 14 and 32 weeks of gestation from January

through March 2001. Nine cases of isolated intracardiac foci were identified (incidence of 1.8%). None of these cases had a chromosomal anomaly. Our data shows a frequency in our population similar to that reported among Caucasians.

Keywords: Echogenic intracardiac foci, Trisomy 21, Down syndrome, Chromosomal anomalies, Hispanics, Hispanic population, Sonographic markers.

Echogenic intracardiac foci (EIF) most of the time represents a thickening of the chordae tendineae or papillary muscle; they are usually isolated and seen mostly in the left ventricle. Multiple EIF have been linked to a higher incidence of cardiac disease and poor pregnancy outcome (1). However, isolated cases are a benign common finding in the normal population with no association to cardiac disease (2).

Isolated EIF have been identified in 0.17 to 1.7% of Caucasians and 5% of Asians (1,3), with little information available on Hispanics. It has been reported to be present in up to 30% of fetuses with Down's syndrome (4). An incidence of chromosomal anomalies of 4.4% has been reported among fetuses with EIF (5). It is expected that the relative risk of Down's syndrome associated to identification of an isolated EIF would depend on the prevalence among the normal population. Relative risks ranging from 0 to 4.8 have been described in different

populations (4,6). The purpose of this prospective study was to describe the incidence of EIF in a low-risk, normal Hispanic population.

Materials and Methods

All Hispanic patients referred to a private prenatal diagnostic unit for routine sonographic examinations from 14 to 32 weeks of gestation were included during a 5 month period from January through May 2001. Fetuses with identifiable congenital anomalies or other markers for trisomy 21 were excluded from the study. Only patients in which an EIF was found incidentally were considered. Those patients referred for evaluation due to a finding of an EIF were excluded from analysis.

All patients were examined by a single experienced operator using an ATLHDI 1000 model with a curvilinear 3.5-5 Mhz transducer. Distinction was made as to the location and number of EIF. All cases were followed after birth for identification of the presence of chromosomal or cardiac anomalies. A total of 485 patients were included in the study.

Results

Nine EIF were identified. Two were in the right ventricle and 7 in the left. One of the cases was in a twin monozygotic dichorionic in which only one of the fetuses

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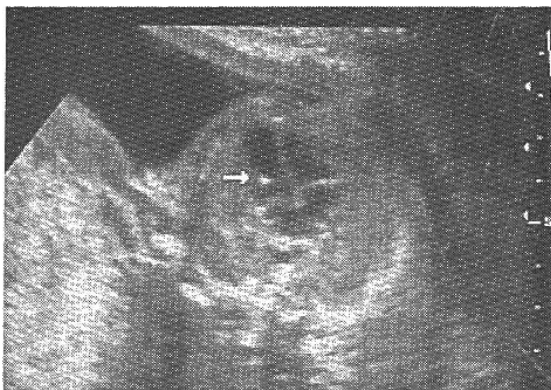


Figure 1. Arrow shows isolated echogenic focus in fetal left ventricle

had an EIF. All of them were isolated. The estimated incidence of this finding in our Hispanic population is 1.8%. All cases had a normal pregnancy outcome with no chromosomal or cardiac anomalies identified among them.

Discussion

Isolated EIF in our low-risk Hispanic population have a prevalence of 1.8%, similar to that reported among Caucasians (1,3). There is some controversy regarding the importance of EIF as a marker for trisomy 21. If we assume an incidence of 30% of EIF among fetuses with trisomy 21 (4) and a general frequency for trisomy 21 of 1/900, we would expect an incidence of 5.7% of Down's syndrome among fetuses with EIF in our population. In our low-risk Hispanic patients 2,727 sonograms and 50 amniocentesis would be required to identify one fetus with Down's syndrome based on this finding alone. However, the incidence of EIF among fetuses with Down's syndrome may be much lower, making this finding of very limited value in the screening for aneuploidy.

Since EIF are a relatively common finding in low risk populations, patients must be carefully oriented about their significance. Most patients become very anxious when any deviation from "normal" is mentioned during sonographic screening. The concept of sonographic markers for identification of aneuploidy is an especially difficult subject for patients to grasp. The fact that a finding can be entirely normal and at the same time

represent a significantly increased risk for chromosomal abnormalities is not easily understood. Careful attention must be given when counseling these patients since the great majority of these fetuses have neither chromosomal nor cardiac disease and the indications for amniocentesis may be debatable.

Resumen

Los focos ecogénicos intracardíacos (FEI) son pequeñas áreas de ecogenicidad aumentada dentro de los ventrículos fetales. Cuando son aislados, se consideran un hallazgo normal y su incidencia varía de acuerdo al grupo étnico. Se han descrito como marcadores débiles para trisomía 21 y otras anomalías cromosómicas. Existe poca información sobre la incidencia de estos focos entre hispanos. Examinamos 485 fetos normales entre 14 y 32 semanas de gestación de enero a marzo 2001. Identificamos 9 casos con FEI aislados (incidencia de 1.8%). Ninguno de estos casos resultó en una anomalía cromosómica. La frecuencia con que se encontraron estos focos en nuestra población concuerda con aquella reportada entre los caucásicos.

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