

Early Fetal Echo Detects Most Cardiac Lesions

The technique has limitations, so reserve early echocardiography for cases at the greatest risk.

BY ROBERT FINN
San Francisco Bureau

RENO, NEV. — Fetal echocardiography before 16 weeks of gestation is feasible and can detect a substantial proportion of cardiac lesions, investigators reported in a poster presentation at the annual meeting of the Society for Maternal-Fetal Medicine.

The technique does have limitations regarding accurate visualization of the great artery relationship and the crux of the heart. It may therefore be best to reserve early echocardiography for cases at the greatest risk for cardiac defects, as judged by increased nuchal translucency and the presence of extracardiac lesions. Second-trimester echocardiograms remain the gold standard, concluded Fionnuala McAuliffe, M.D., of University College Dublin (Ireland) and colleagues.

The study involved 160 fetal echocardiograms performed before the 16th week, with an average gestation time of 13.5 weeks. Investigators used the transabdominal approach for 100 cases, and the transvaginal approach in 60 cases in which the transabdominal approach yielded poor visualization.

Of the 160 patients, 100 were referred because of nuchal translucency greater than the 95th percentile, 51 because of a family history of congenital cardiac defects, and 9 because of the presence of extracardiac lesions.

Adequate cardiac examinations were possible in 152 cases, and pregnancy outcome was available in 137 cases. Of those, there were 20 cardiac defects. Fourteen (70%) showed an abnormality on the early echocardiogram, and 6 (30%) were passed as normal.

The early echocardiogram identified two cases of ectopia cordis, two cases of

atrioventricular septal defect, two cases of hypoplastic left heart syndrome, two cases of ventricular septal defect, two cases of left atrial isomerism, two cases of hypoplastic right ventricle, and one case each of double outlet right ventricle and cardiac diverticulum.

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On the other hand, the early echocardiogram failed to detect three cases of ventricular septal defect, two cases of dextro-looped transposition of the great arteries, and one case of hypertrophic cardiomyopathy.

A four-chamber view of the heart was obtained in all of the cases. The atrioventricular valves could be visualized 96% of the time, the aorta and pulmonary artery 95% of the time, and the inferior and superior vena cava 76% of the time.

Early fetal echocardiography was less effective in visualizing the aortic and ductal arches (45% of the time), branch pulmonary arteries (37% of the time), and pulmonary veins (19% of the time). ■

Perinatal Neurologic Deaths Occur More Often After Night Delivery

BY ROBERT FINN
San Francisco Bureau

RENO, NEV. — Newborn infants with neurologic injury resulting in death are twice as likely to have had a nighttime delivery as healthy infants, according to a study presented by Adam C. Urato, M.D., at the annual meeting of the Society for Maternal-Fetal Medicine.

The causes of this association are unclear, but may include prolonged labor, differences in staffing at night, and errors by medical personnel due to fatigue, said Dr. Urato of Tufts University, Boston.

The study made use of a Florida state database of perinatal neurologic injuries, created as a result of a law providing for no-fault compensation of families whose children suffer a birth-related neurologic injury.

Of the 447 cases of neurologic injury recorded from 1989 to 2002, there were 80 that resulted in the death of an infant. The database is limited to live-born children with brain or spinal cord injury whose birth weight was greater than 2,500 g. The neurologic problems were caused by oxygen deprivation or mechanical injury occurring in a hospital during labor, birth, delivery, or post delivery.

The 80 deaths were compared with a control group of 999 randomly selected births in Florida from 1996, the midpoint of the time span covered in the neurologic

injury database, according to Dr. Urato.

Among the control group, 28% were born during the hours of 11 p.m. to 8 a.m. But 45% of the births with neurologic injury resulting in death occurred during those nighttime hours. Even after correcting the odds ratio for repeat cesarean deliveries, the deaths were 1.95 times more likely to occur at night, a statistically significant increase in risk.

Index cases were significantly less likely than controls to have been born via a normal spontaneous vaginal delivery (12.3% vs. 70.7%), and significantly more likely to have been born via cesarean section (71.7% vs. 21.4%), vacuum delivery (12.3% vs. 6.4%), or forceps delivery (3.7% vs. 1.5%).

Prolonged labor is one possible explanation for the excess of nighttime neurologic injuries resulting in death. Spontaneous labor often leads to an afternoon delivery, but most inductions start during the day. Labors that continue into the night may represent a group at higher risk. But a review of the 80 deaths showed that most did not follow prolonged labor.

Nighttime differences in staffing might be another explanation. All hospital departments, including anesthesia, nursing, pediatrics, and obstetrics, have lower staffing levels at night. But of the 80 deaths, a staffing issue was noted in only a single chart. In that case, the obstetrician was forced to wait for an operating room to perform a cesarean. Other staffing delays might not have been mentioned in the charts, Dr. Urato said.

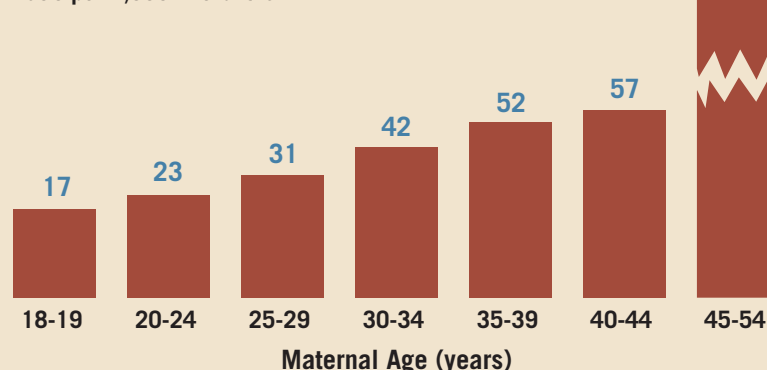
The third explanation involves fatigue by medical personnel. At some point from 11 p.m. to 8 a.m. most people are at their circadian nadir, with an increased sleep propensity. Many studies of workers have documented an increased risk of accidents and errors at night. No mention of fatigue was made in any of the charts, however.

"Perhaps more than any other field of medicine, obstetrics is associated with nighttime work," he said. "The image of the obstetrician awakened in the middle of the night to deliver a baby is embedded in our collective consciousness. This finding of increased risk in our field of obstetrics should not surprise us given the preponderance of evidence for other fields that demonstrate that night is indeed a time of increased risk." ■

DATA WATCH

Multiple Births by Maternal Age

Ratio per 1,000 live births



Source: 2002 data, Centers for Disease Control and Prevention

KEVIN FOLEY, RESEARCH/LOUISE KOENIG, DESIGN

Better Pregnancy Outcomes Seen With Elective Cerclage

BY DEEANNA FRANKLIN
Senior Writer

WASHINGTON — Patients who received emergent cerclage had higher rates of premature birth, spontaneous premature rupture of membranes, and chorioamnionitis, compared with those receiving elective cerclages, Chi P. Dola, M.D., reported in a poster presentation at the annual meeting of District VII of the American College of

Obstetricians and Gynecologists.

Dr. Dola, of Tulane University, New Orleans, and her colleagues performed a retrospective chart review of data from 140 pregnant women who presented with an incompetent cervix.

The women were separated into three groups: 91 asymptomatic patients who received an elective cerclage based on a history suggestive of cervical incompetence; 29 asymptomatic patients who received an urgent

cerclage after an ultrasound exam brought to light an abnormal finding, and 20 patients who received an emergent cerclage after presenting with typical symptoms of cervical incompetence.

The percentage of patients whose pregnancy lasted beyond 36 weeks was the highest, at 73%, in those who received an elective cerclage, followed by 62% in the asymptomatic patients who received urgent cerclage and 21%

in the symptomatic patients who had an urgent cerclage.

Spontaneous premature rupture of membranes was 21% in the asymptomatic patients who received elective cerclage, versus 40% and 71% in the other two groups, respectively.

The incidence of chorioamnionitis was only 2% in the asymptomatic patients who received elective cerclage, compared with 9% and 50% in the other two groups, respectively.

All differences between groups were significant.

The researchers' findings show that patients with urgent cerclages had poor outcomes compared with those receiving elective cerclages. This finding led the researchers to conclude "that by awaiting abnormal cervical findings on ultrasound exam prior to placement of an urgent cerclage, the potential for poor pregnancy outcomes increases." ■