PRENATAL DIAGNOSIS OF CONGENITAL DIAPHRAGMATIC HERNIA BY ULTRASONOGRAPHY : A CASE REPORT

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ABSTRACT

A case of congenital diaphragmatic hernia diagnosed sonographically in utero at 20 weeks gestation is described. In previous reports, this diagnosis has been made as early as 15 weeks gestation[1]. Recognition of this severe abnormality in the second trimester is beneficial. The parents can interrupt the pregnancy. Or, prompt operative treatment after delivery of an infant with this disorder may minimize the development of hypoxemia and acidosis commonly occur in these cases. In addition, appropriate parental counseling may be started.

CASE REPORT

A 34 year-old gravida 2, para 1 underwent ultrasound study at 20 weeks of pregnancy at the Bangkok Christian Hospital to confirm her dates. A right diaphragmatic hernia in the fetus was diagnosed at that time; loops of bowel were in the right hemithorax, displacing the heart to the left. (Fig.1-3). This was confirmed at 24 weeks gastation, and there was no evidence of poly hydramnios. Amniocentesis for karyotype analysis was done and revealed a 46 XY normal male karyotype. The patient chose to continue the pregnancy despite the poor prognosis. She delivered her baby by cesarian section without any complication. There was no associated anomalies. Chest X-ray of the infant after birth confirmed the pre-natal diagnosis of a right diaphragmatic hernia showing multiple loops of bowel in right side of the chest. The lungs were compressed and hypoplastic. The infant received prompt operative treatment and survived.

DISCUSSION

Congenital diaphragmatic hernia is known to occur in approximately one in 2,200-5,000 births[2]. It is also part of schisis association[3]. Congenital postero-lateral diaphragmatic hernia occur as an isolated defect about 60% of the time.[4] Because of the mass effect produced in the fetal thorax for many months in utero, the fetal lungs remain hypoplastic, and the prognosis for the newborn is poor despite immediate post natal surgery. With optimal conventional therapy, most fetuses with detectable congenital diaphragmatic hernia will die in the neonatal period (80% mortality). The defect is present by week 10 of fetal development; therefore, even subtle signs of a mass effect in the fetal thorax in the second trimester[5] may be significant for early diagnosis. The bowel was forced through the lumbo-costal triangle as a result of the inverted position of the fetus[6]. Polyhydramnios is both a common prenatal marker for congenital diaphragmatic hernia (present in 76% of the fetuses) and a predictor for

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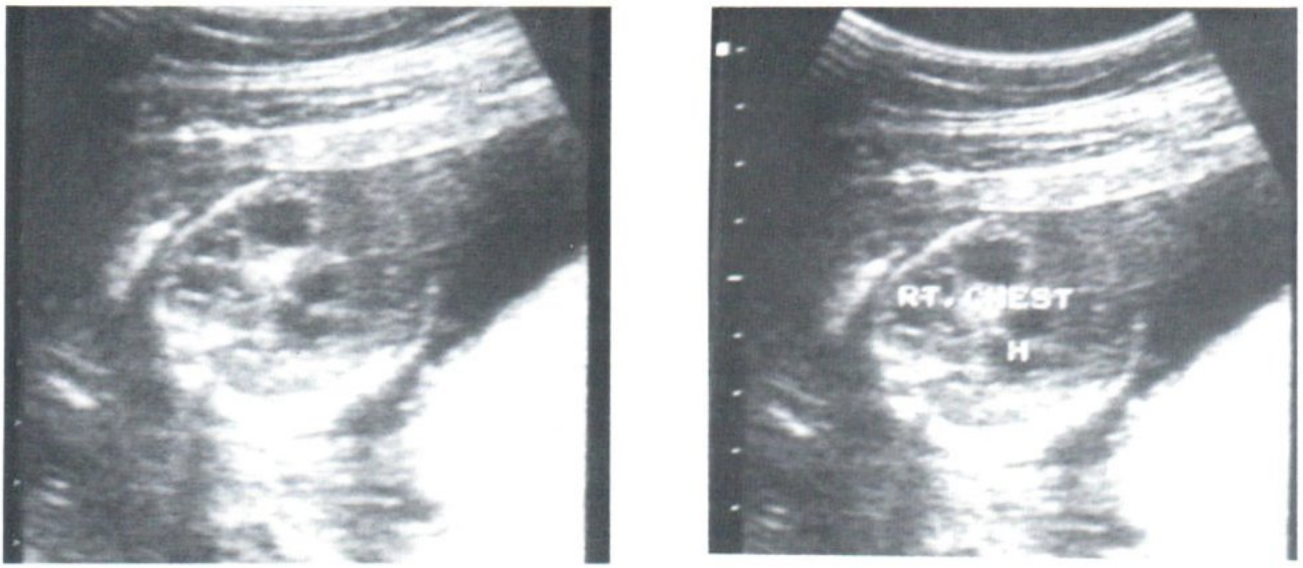
poor clinical outcome, only 11% survived. Fetal congenital diaphragmatic hernia is a dynamic process. Non survivors have larger defects and may have more viscera displaced into the chest at an earlier stage of development[7]. It is important that prenatal diagnosis of congenital diaphragmatic hernia not only be accurate but also predict clinical outcome. Amniocentesis for karyotype analysis may also be indicated, since among the series of 94 cases reported by Adzick NS et al., there were 4 cases of trisomy.

In our patient, the major sonographic finding when the diagnosis was made at 20 and 24 weeks was cystic structures in the right hemithorax and displacement of the heart in the fetal chest owing to mass effect. Displacement of the fetal mediastinum is a non specific sign that can be seen in cases of dextrocardia, various intra-thoracic masses and congenital diaphragmatic hernia. The differential diagnoses include congenital cystic adenomatoid mal-formation of the lung, pulmonary sequestration and bronchogenic cyst.

1.A,B.



2.A,B.

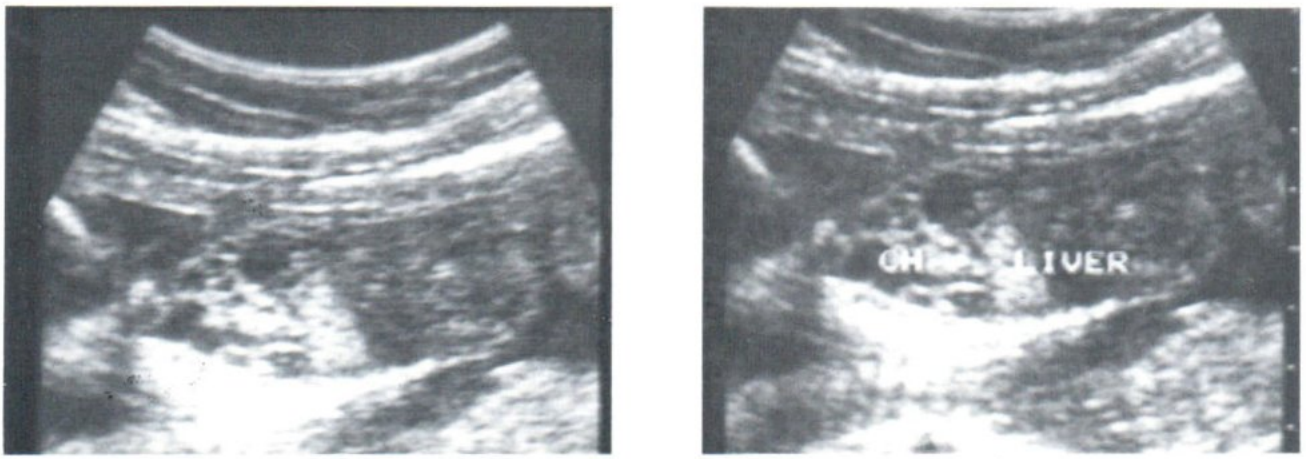
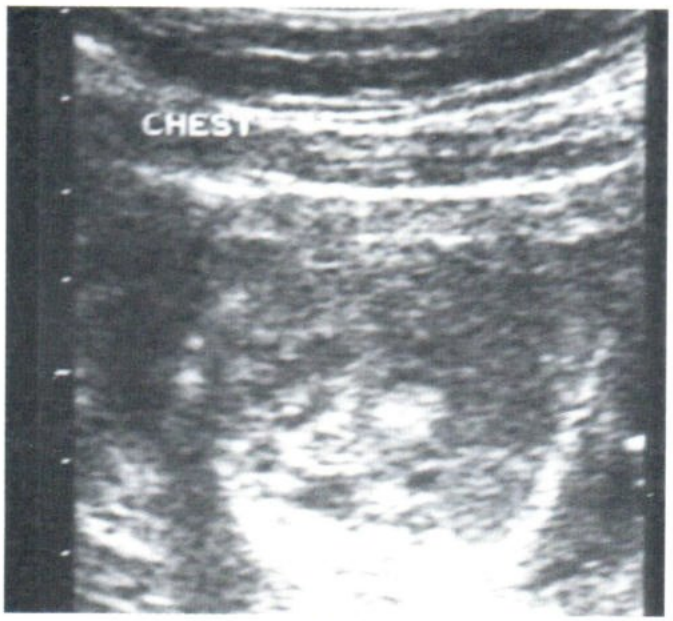
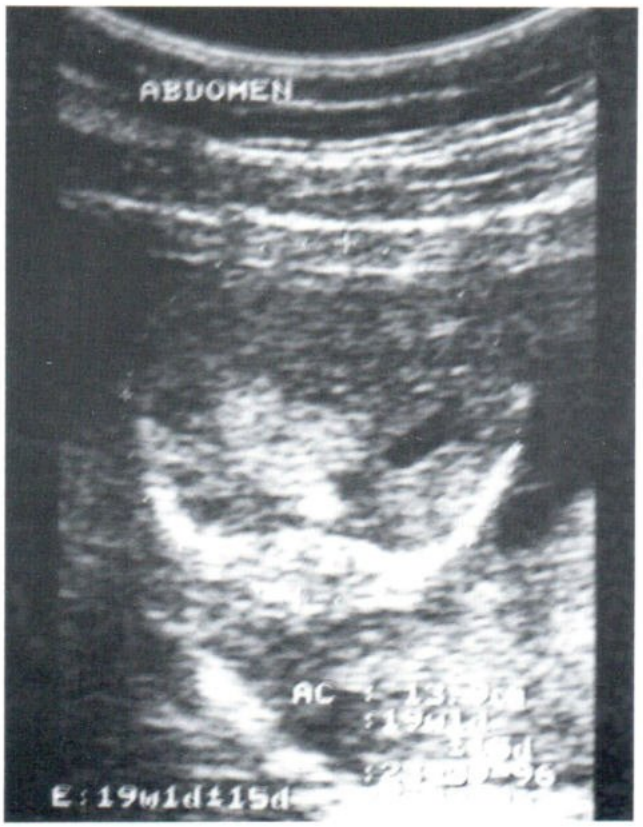


Fig. 1,2 A,B Cross sectional and longitudinal scans of fetal thorax and abdomen shows fluid filled loops of bowel in the right chest displacing the heart to the left side. The loops of bowel were seen above the liver on longitudinal scan.



3A.



3B.

Fig. 3 A,B Cross sectional scans of the chest and abdomen shows loops of bowel in the right chest and at right postero - lateral part of the abdomen. Findings suggest herniation of loops of bowel through the right foramen of Bochdalek.

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