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Fetal Hepatic Tumour – A Report Of 2 Cases

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ABSTRACT

The fetal abdomen is a common site for congenital anomalies. Antenatal counseling and management pose a dilemma due to its wide spectrum of implication. We report two cases of fetal hepatic mass with different outcomes.

Key words: emergency, rescue, salvage cervical cerclage and outcomes

INTRODUCTION

The fetal abdomen is a common site for congenital anomalies.[1] With high quality ultrasound equipment, improved visualization of the intraabdominal structures can lead to documentation of various abnormalities with differing clinical significance. In utero diagnosis, antenatal counseling and management pose a dilemma for the modern maternal fetal specialist due to its wide spectrum of implication and associated complication such as fetal hydrops, maternal toxaemia and preterm labour. Although expectant management is sufficient in most cases, transfer to a hospital with level three neonatal care or facilities where early postnatal intervention should be considered. We report herein two cases of fetal hepatic mass with different outcomes.

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CASE REPORTS

Case 1

A 31-year-old primip booked at ten weeks gestation. Her antenatal care has been unremarkable. Her First Trimester Screening test at 13+4 weeks gestation revealed Nuchal Translucency of 2.3mm. The risk for Trisomy 21 was 1 in 8630 whereas risk for Trisomy 18 and 13 was 1 in 19069. Screening scan done at 18 week showed fetal abdominal circumference (AC) of 145mm, SDS AC was 2.05 (figure 1). No other structural abnormality was detected. She had a normal oral glucose tolerance test at 25 weeks. At 30 weeks, fetal growth scan showed increased AC of 331mm (SDS AC 6.88) with a large intra pelvic abdominal mass measuring 7.7 x 6.8 cm, displacing the intestine, stomach and bladder peripherally (figure 2). Both kidneys were seen with renal arteries from the aorta. No perineal/ sacral growth visualised.

The patient was admitted at 32+2 weeks for preterm premature rupture of membrane (PPROM) and threatened preterm birth. Intramuscular dexamethasone and intravenous penicillin G were given. In an attempt to inhibit preterm birth, intravenous Salbutamol was started. Six hours after completion of Dexamethasone, CTG showed variable deceleration with decreased variablity and regular contractions, one in every three minutes. Clinical

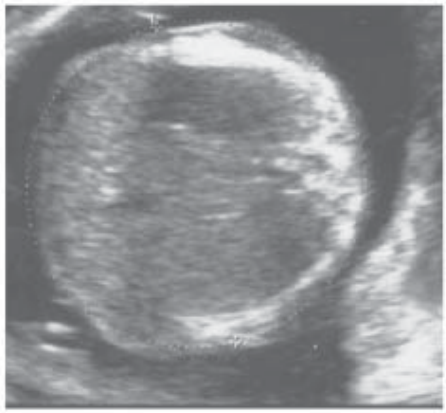

Figure 1. AC at 20 weeks

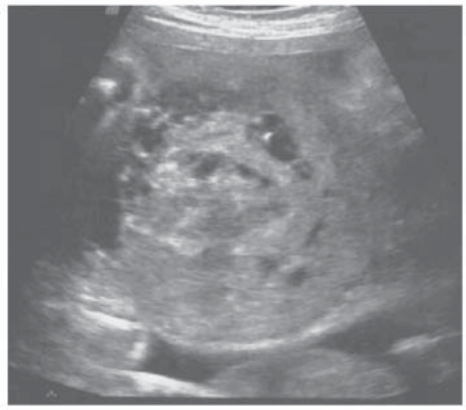

Figure 2: AC at 31 weeks

examination revealed a breech presentation with cervical dilatation of 2cm and moderate meconium stained liqour. She underwent emergency Caesarean section at 32+2 weeks gestation. Despite a generous Pfanensteil incision, difficulty was encountered with delivery of the fetus abdomen. Rectus muscle was dissected in order to complete the breech extraction. There was blood stained liquor as well. Post operative recovery for the mother was uneventful and she was discharged home at POD 3. Placenta histology showed retroplacental haematoma along the edge measuring 10x1x0.5cm.

At birth, the 2.8kg female neonate had a huge distended abdomen with generalised oedema. Her Apgar score were 2 and 6 at 1 and 5 minutes respectively. She was intubated at 2 minutes of life and transferred to NICU at 15 min of age. Arterial cord PH was 7.09 and base deficit of –12.7.

The neonate was found to be anaemic with Haemoglobin 11g/dL. Abdominal ultrasound showed small amount of free fluid in left upper quadrant. CT abdominal pelvis (figure 3) showed a large 10.1 x 7.5 x 8.5 cm hypervascular heterogeneous mass arising from the lower aspect of the liver, extending inferiorly to occupy most of the abdominal and pelvic cavity. There were large dilated and enhancing vessels seen at the periphery of the mass. The right kidney was poorly perfused compared to the left and the spleen also demonstrated poor perfusion, likely due to vascular shunting.

Echocardiogram and cranial ultrasound showed normal cardiac and intracranial structures. The neonate condition deteriorated with progressive abdominal distention and desaturation despite HFOV and MgSO4. Despite all resuscitative measures, the neonate developed asystole and was pronounced dead at 6 hours of life. The parents declined postmortem. A diagnosis of hemangioma was made from liver biopsy (Fig 4). The neonate's Alpha-fetoprotein was 80044.3 ug/L

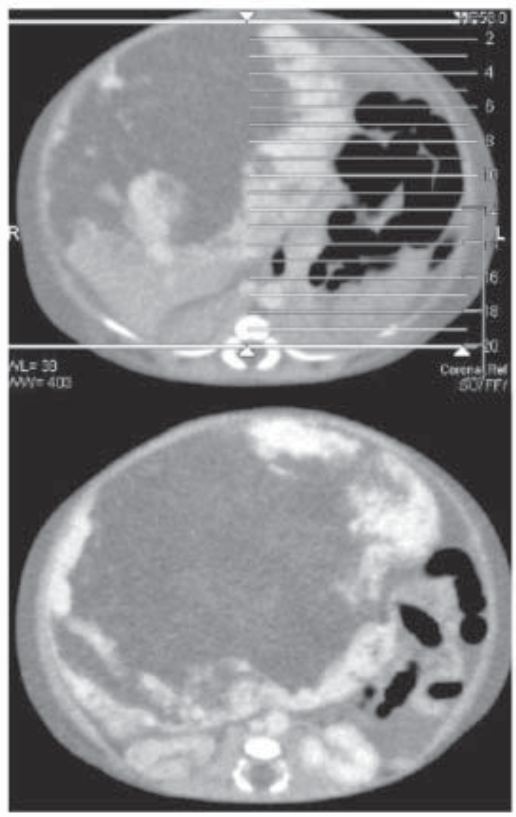

Figure 3: CT scan at day 1 of life

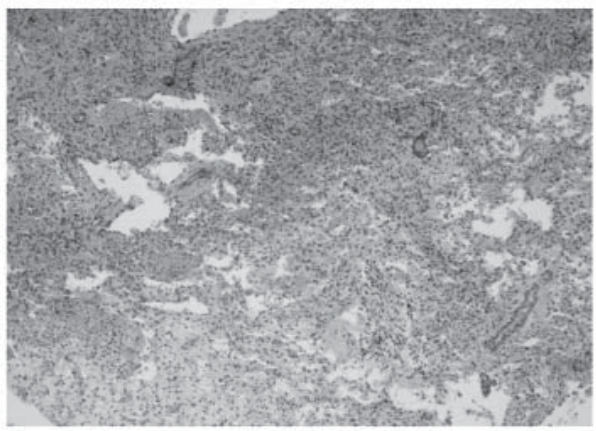

Fig 4: Liver biopsy confirmed hemangioma

Case 2

A-37-year old primip was referred by a private obstetrician for a large tumourous growth in right fetal abdominal region at 37 weeks. Triple test screen was low risk (1 in 589).

Screening scan done at 37.1 weeks showed a male fetus with a solid cystic mass measuring 7.9 x 6.5 x 7.4cm in the fetus's abdomen (figure 5). Both kidneys were seen separated from the mass. Bilateral hydrocoele was also noted.

She was admitted at 38+2 weeks and underwent elective caesarean section. A 3230 gram male neonate was delivered with Apgar nine at one and five minutes. No active resuscitation was required. Post delivery, the neonate was transferred to special care nursery for observation. The neonate was clinically well with a distended abdomen and bilateral hydrocoele.

Magnetic resonance angiography showed a large 8.2x 6.8 x 7.9 cm exophytic hepatic tumour which was compatible with hepatoendothelioma (figure 6). It was supplied by an enlarged hepatic artery and drained by the right middle hepatic vein. Alpha-fetoprotein was 19877ug/L and LDH was 2281 U/L

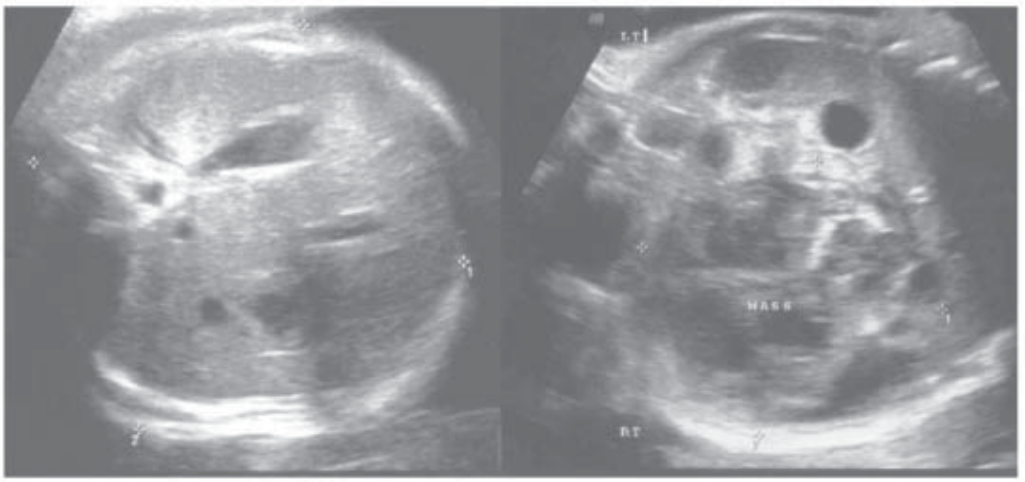

Figure 5: AC at 37.1 weeks

Other complications included anaemia and thrombocytopenia with Haemoglobin 13.8g/dL and platelet 85k/L. The neonate was referred to the Paediatric surgical team and paediatric Oncology team. The neonate was started on oral prednisolone (2mg/kg/day) and monitored closely with serial full blood counts and ultrasound scans of the abdomen. He was discharged at 3 weeks of life with outpatient follow up. He was well at 3 months of life and ultrasound scan of the abdomen showed reducing size of the hepatic tumour, 3.8 x 3.9 x 2.9 cm.

DISCUSSION

Cystic masses in the fetus can be easily identified with ultrasound scan. However, it is not always possible to detect fetal hepatic tumours during screening scan before 24 weeks. In our cases, both fetal abdominal mass were detected at third trimester. Moreover, ultrasound scan may not be possible to make a precise prenatal diagnosis. In these cases, magnetic resonance imaging (MRI) may be of valuable. MRI provides better soft-tissue contrast resolution and therefore the ability to distinguish individual structures.[2] It also provides a large field-of-view, facilitating examination of fetuses with large or complex anomalies, and visualization of the lesion within the context of the entire body of the fetus.

Isaac et al found that hepatic tumour in fetuses and neonates have different prognosis as compared to older children.[3] The former was associated with lower survival rate. The prognosis also depends on the exact diagnosis. Fetuses with hepatic haemangiomas had the best outcome.[3] Nonetheless, complications such as severe anaemia, congestive cardiac failure, consumptive coagulopathy, fetal hydrops, respiratory distress and vascular compromise from the large space occupying abdominal mass are not uncommon for fetuses with hepatic haemagiomas. In our case 1, the neonatal death occurred as a result of these complications.

Gestation of delivery need to be balanced against risk of iatrogenic prematurity and risk of the fetuses developing the complications mentioned above. Parents need to be counseled regarding possible diagnosis and prognosis, as well as the potential problems of prematurity which may be aggravated by

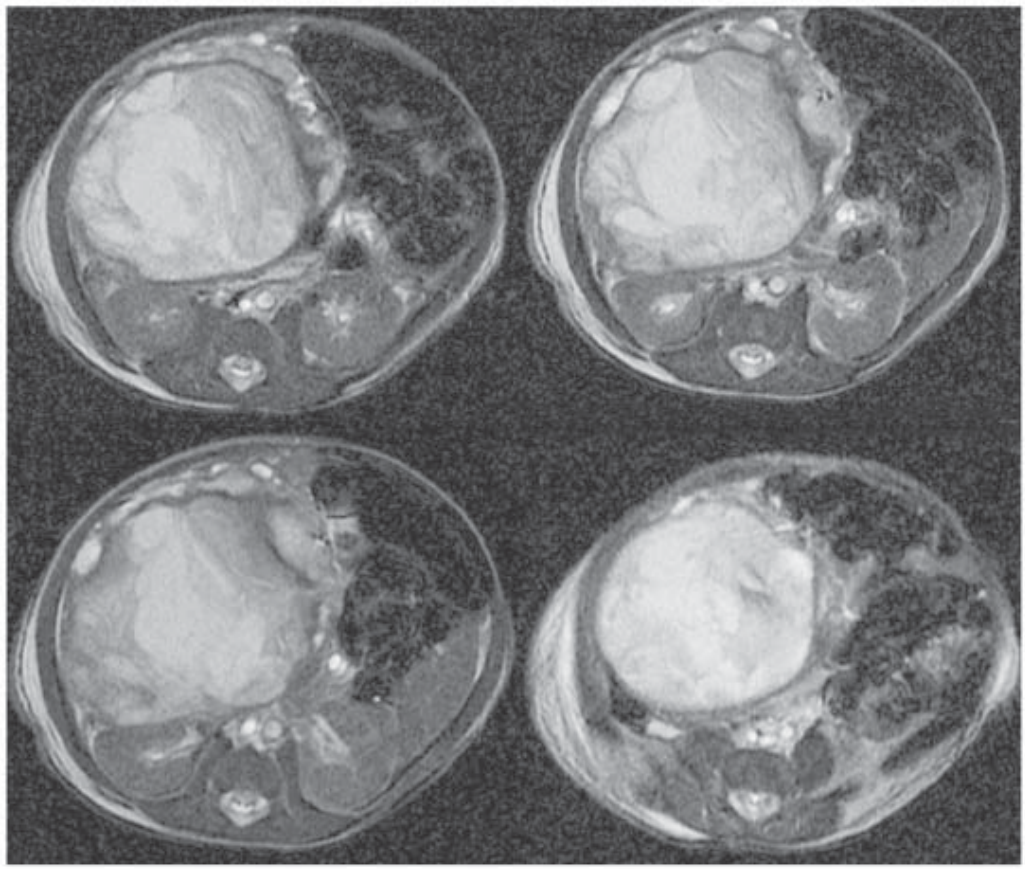

Figure 6: Magnetic resonance angiography showing exophytic hepatic tumour

the large space occupying abdominal mass. The issue is further complicated as surgery may be needed and it can only be carried out when the neonate is of a suitable condition and maturity.

Caesarean delivery was carried out in both of our cases. Even without other indication, delivery by Caesarean section is recommended. This will not only prevent dystocia at delivery, but also labour induced rupture of the tumour and subsequent fatal intrabdominal haemorrhage. Delivery should be performed at a center with level three neonatal care and availability of surgical services.

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