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Successful management of a large fetal mediastinal teratoma complicated by hydrops fetalis

Hajime Takayasu[a,*], Yoshihiro Kitano[a], Tatsuo Kuroda[a], Nobuyuki Morikawa[a], Hideaki Tanaka[a], Akihiro Fujino[a], Mitsuru Muto[a], Shunsuke Nosaka[b], Seiji Tsutsumi[d], Satoshi Hayashi[c], Haruhiko Sago[c]

[a]*Division of Surgery, National Center for Child Health and Development, Tokyo 157-8535, Japan*
[b]*Division of Radiology, National Center for Child Health and Development, Tokyo 157-8535, Japan*
[c]*Division of Fetal Medicine, National Center for Child Health and Development, Tokyo 157-8535, Japan*
[d]*Department of Obstetrics and Gynecology, Yamagata University School of Medicine, Yamagata 990-9085, Japan*

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Abstract This report describes a case of fetal mediastinal teratoma complicated by hydrops fetalis managed successfully by aspiration of the tumor cyst fluid. Fetal mediastinal teratomas are rare tumors that cause hydrops fetalis or fetal demise in the prenatal period and respiratory distress in the neonatal period. The patient presented with a large cystic mass in the thoracic cavity complicated by hydrops fetalis. The hydrops resolved after fetal aspiration of the tumor cyst fluid. The infant was born without respiratory distress, and tumor resection was performed at the age of 30 days. The postoperative course was uneventful, and the patient was in good health 6 months postoperatively.

Mediastinal teratomas (MTs) represent approximately 20% of all mediastinal masses and 10% of all teratomas in childhood. They usually occur in the anterior mediastinum [1-4]. This entity is rarely diagnosed prenatally and often results in the development of hydrops and fetal demise [4-7]. Mediastinal teratomas are rare in neonates and present with severe respiratory distress immediately after birth [1,2,8-10]. Previous reports emphasize that despite early and uncomplicated surgical excision of the tumor, it is difficult to salvage an infant with MT because of poor heart development and lung hypoplasia resulting from intrauterine compression [2,8,10]. The following report illustrates a rare case of fetal MT with hydrops fetalis treated by prenatal aspiration of the tumor cyst fluid and subsequent postnatal resection.

1. Case report

A 37-year-old gravida 1 para 0 woman was referred to our hospital for evaluation of a cystic mass in the fetal thorax associated with hydrops fetalis at 29 weeks of gestation. The initial ultrasound examination at 23 weeks of gestation showed a structurally normal fetus with the exception of a large cyst in the right anterior mediastinum. Magnetic resonance imaging demonstrated a large cystic and solid

* Corresponding author. Tel.: +81 03 3416 0181; fax: +81 03 3416 2222.
E-mail address: hajime0723@gmail.com (H. Takayasu).

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mass occupying the thoracic cavity bilaterally without pericardial effusion, and a presumptive diagnosis of mediastinal teratoma was made. Serial ultrasound examinations were performed. There was no evidence of heart failure on fetal echocardiography. At 29 weeks of gestation, the size of the lesion had increased and fetal hydrops was present characterized by edema and ascites (Fig. 1A).

Magnetic resonance imaging at the time of referral showed a large cystic mass in the fetal thorax with hydrops fetalis and polyhydroamnios (Fig. 1B). Three days after referral, aspiration of the fetal tumor cyst fluid and an amniocentesis were simultaneously performed. The amount of the fluid aspirated from the mass was 75 mL. After the procedure, the hydrops fetalis subsided within a week (Fig. 2A). The size of the cystic lesion in the thorax decreased; however, the solid component increased in size (Fig. 2B). The fetus appeared to do well with continued growth after aspiration of the tumor cyst fluid.

A male infant weighing 3070 g was born by assisted breech delivery at 39 weeks of gestation. Apgar scores were 8 and 9 at 1 and 5 minutes, respectively, and there was no respiratory distress noted. Human chorionic gonadotropin, serum alpha-fetoprotein, and CA125 levels were within normal limits for a newborn; however, the CA 19-9 level was slightly elevated (89.8 U/mL). Chest computed tomography

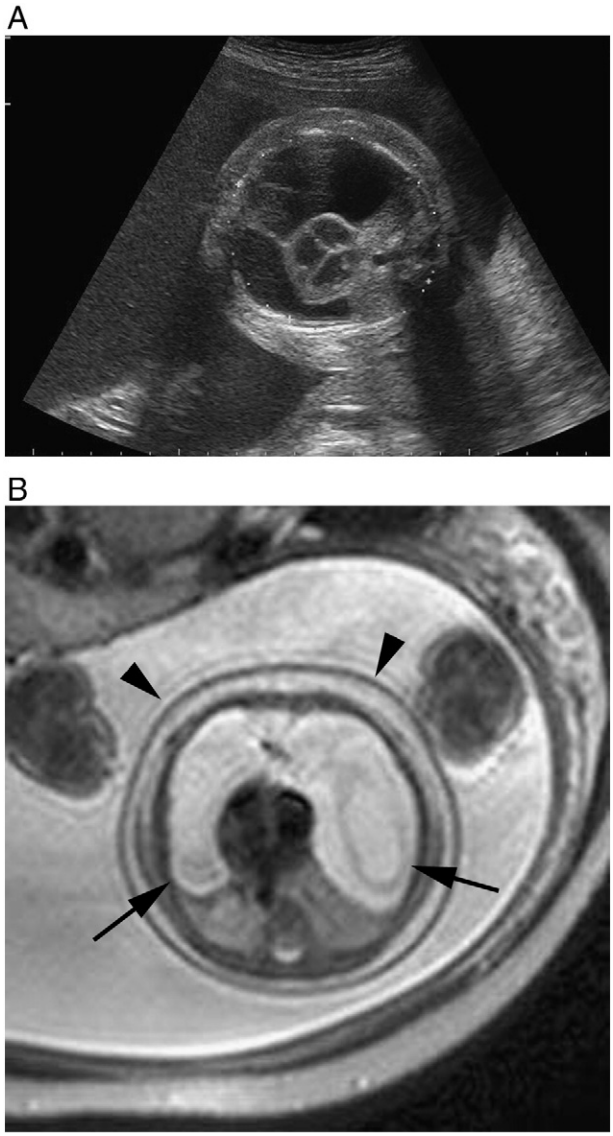

Fig. 1 A, Fetal ultrasound at 29 weeks of gestation shows a large cystic mass and compressed heart and lung. B, Fetal magnetic resonance imaging (single-shot turbo spin echo sequence: repetition time, 900 milliseconds; echo time, 84 milliseconds) obtained in an axial plane at 29 weeks gestation. Axial views revealed a large cystic lesion in the fetal thorax (arrow) compressing the lungs and the heart. Skin edema was present (arrowhead).

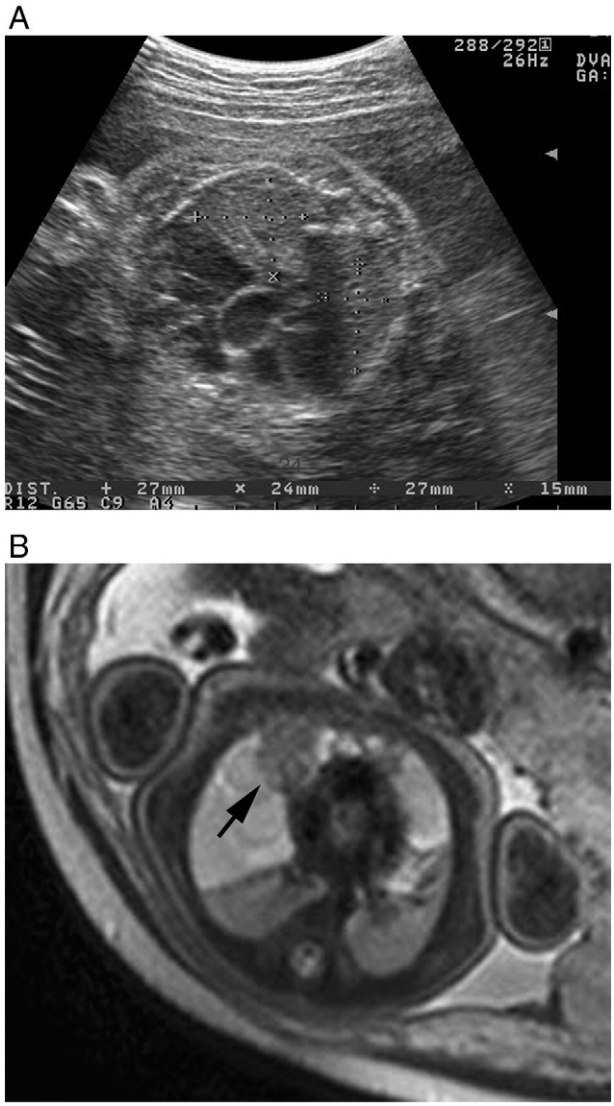

Fig. 2 A, Fetal ultrasound performed 3 days after the aspiration of the tumor cyst fluid. The cystic lesion decreased in size dramatically and the size of the lung increased. B, Fetal magnetic resonance imaging (single-shot turbo spin echo sequence: repetition time, 900 milliseconds; echo time, 84 milliseconds) obtained in an axial plane at 36 weeks of gestation (after thoracocentesis). The solid component of the tumor increased in size (arrow in A).