Prenatal Diagnosis of Concomitant Gallbladder Hydrops and Pyelectasis with Spontaneous Resolution

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A 32-year-old, gravida 3, para 2, woman was referred to the hospital in the late second trimester because of an intraabdominal cyst. Obstetric ultrasound and fetal magnetic resonance imaging (MRI) at 25 weeks' gestation revealed an infrahepatic cyst and bilateral renal pyelectasis (Figure 1). The infrahepatic cystic mass measured 0.9 × 2.1 cm in size with its long axis perpendicular to the axis of the spine, the left renal pelvis measured 12.1 mm in the anteroposterior diameter, and the right renal pelvis measured 10.5 mm in the anteroposterior diameter. The intra- and extrahepatic biliary ducts were not dilated, and no gallstone was identified. The findings were consistent with the diagnosis of gallbladder hydrops and bilateral pyelectasis. Amniocentesis revealed a karyotype of 46,XY. Follow-up MRI at 35 weeks' gestation showed resolution of the gallbladder hydrops and left renal pyelectasis (Figure 2). At 38 weeks' gestation, a 3020-g male infant was delivered. Postnatally, abdominal sonography showed presence of mild left renal pyelectasis but resolution of the gallbladder hydrops. The infant was doing well at the age of 4 months.

The present case provides evidence for the association of gallbladder hydrops with renal pyelectasis. Gallbladder hydrops is caused by transient bile plugging

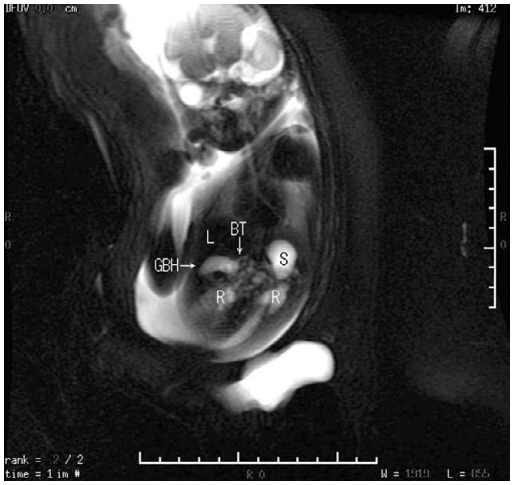

Figure 1. Fetal magnetic resonance imaging, coronal view, at 25 weeks of gestation shows gallbladder hydrops with its long axis perpendicular to the axis of the spine and bilateral renal pyelectasis. L = liver; BT = biliary tracts; GBH = gallbladder hydrops; S = stomach; R = renal pyelectasis.

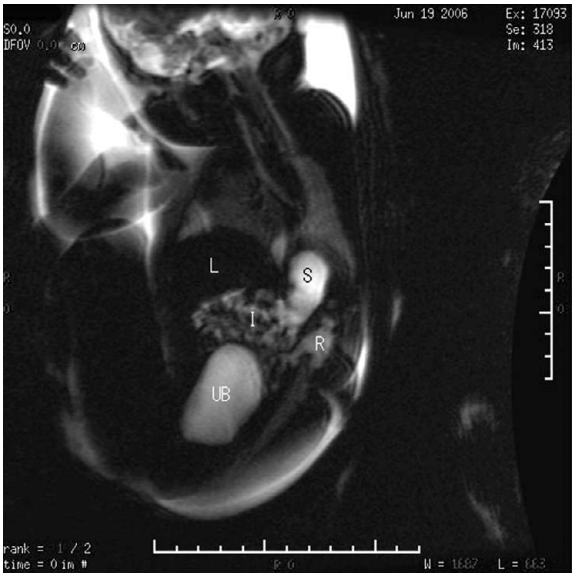

Figure 2. Follow-up fetal magnetic resonance imaging at 35 weeks of gestation shows resolution of gallbladder hydrops and the presence of unilateral renal pyelectasis. L = liver; I = intestines; S = stomach; R = renal pyelectasis; UB = urinary bladder.

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of the ductal system that leads to obstruction, resorption of bile, and accumulation of a serous transudate [1]. Acute hydrops of gallbladder is usually seen in adults or older children but has rarely been reported in infants or fetuses [2]. Fetal cholecystomegaly may be associated with gallstone or accumulation of sludge in the gallbladder neck or duct [3]. Prenatal diagnosis of gallbladder hydrops should raise a differential diagnosis of choledochal cysts, simple hepatic cysts, biliary atresia, ovarian, omental, or mesenteric cysts, duodenal or gallbladder duplications, adrenal cysts, renal cysts, dilated loops of bowel, and hydronephrotic renal pelvis. In case of gallbladder hydrops, the long axis of the intrahepatic cystic mass is usually perpendicular to the axis of the fetal spine. Recurrence of fetal pyelectasis within families has been reported, and genetic and/or environmental factors are suspected [4,5]. The concurrence of gallbladder hydrops and pyelectasis implies a phenomenon with involvement of the genetic and/or environmental risk factors responsible for the dysfunction of biliary and renal collecting ductal systems.

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