Antenatal Appearance of Isolated Intestinal Duplication Cyst: Prenatal Differential Diagnosis and Postnatal Management: Case Report

Antenatal Dönemde Görülen İzole İntestinal Duplikasyon Kisti: Prenatal Ayırıcı Tanı ve Postnatal Yönetim

Ebru TARIM, MD,[a]
Semire EZER, MD,[b]
Tayfun ÇOK, MD[a]

Departments of
[a]Obstetrics and Gynecology,
[b]Pediatric Surgery,
Başkent University Adana Research and Training Center, Adana

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Yazışma Adresi/*Correspondence:*
Ebru TARIM, MD
Başkent University Adana Research and Training Center,
Department of Obstetrics and Gynecology, Adana,
TÜRKİYE/TURKEY
eatarim@hotmail.com

ABSTRACT Enteric duplication cysts are rare lesions. These types of duplications are usually anatomically connected with some portion of the gastrointestinal tract, but rare cases of completely isolated duplication have been reported. We presented a case of isolated enteric duplication cyst that was detected prenatally. The duplication was diagnosed at 24th weeks and we realized that it was misdiagnosed as right renal pelvis at 13th weeks. There was no other accompanying anomaly in detailed ultrasonografic scan. Throughout the pregnancy; repeated ultrasound scans were performed and the size of the lesion increased to final diameter of 40 x 31 mm at 38th gestational weeks and its location was between liver and bladder. After delivery, the duplication was on the second part of the duodenum and it was excised successfully.

Key Words: Ultrasonography, prenatal; fetal diseases; intestinal diseases

ÖZET Enterik duplikasyon kistleri nadir görülen lezyonlardır. Bu tip duplikasyonlar genellikle anatomik olarak gastrointestinal sistemin bazı bölümleri ile ilişkili olmakla birlikte tamamen izole olanları nadiren bildirilmiştir.Bu vakada prenatal dönemde izole olarak saptanan enterik duplikasyon sunulmuştur. Duplikasyon tanısı 24. gebelik haftasında konulmuştur ancak 13. gebelik haftasında yanlışlıkla sağ renal pelvis olarak değerlendirildiği fark edilmiştir. Detaylı ultrasonografik taramada eşlik eden hiçbir anomali saptanmamıştır. Gebelik boyunca tekrarlayan ultrason ölçümleri yapılmış olup, 38. gebelik haftasında lezyonun son boyutu 40 x 31 mm'ye çıkmıştır. Yerleşimi karaciğer ve mesane arasındaydı. Doğumdan sonra, duplikasyon duodenumun ikinci kısmındaydı ve başarıyla eksize edildi.

Anahtar Kelimeler: Ultrasonografi, prenatal; fetal hastalıklar; intestinal hastalıklar

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Enteric duplications have an incidence of approximately 1 in 10000 live births. These types of duplications are usually anatomically connected with some portion of the gastrointestinal tract, but rare cases of completely isolated duplication have been reported.[1] Patients with enteric duplications may present with a wide range of sign and symptoms from asymptomatic abdominal mass to a life-threatening complication such as perforation of an infected cyst.[2] Here we presented a case of an isolated cystic duodenal duplication suspected prenatally and treated in postnatal period.

CASE REPORT

A 31-year-old women attended to our clinic for routine examination in her third pregnancy. She had with two previous cesarean sections. In her first ultrasound scan at 13th gestational weeks, the fetus had a hypo echoic lesion 3 mm in diameter misdiagnosed as right renal pelvis (Figure 1). In the scan of the female fetus at 24th gestational weeks, right renal pelvis seen normal and a cystic lesion which was 22 x 17 mm in diameter seen just below the level of right kidney (Figure 2). There was no other accompanying anomaly. Repeated ultrasound scans were performed throughout the pregnancy; and the size of the lesion increased to final diameter of 40 x 31 mm at 38th gestational weeks and its location was between liver and bladder (Figure 3). The pregnancy was otherwise uncomplicated. She delivered 3800 gram female infant with cesarean section.

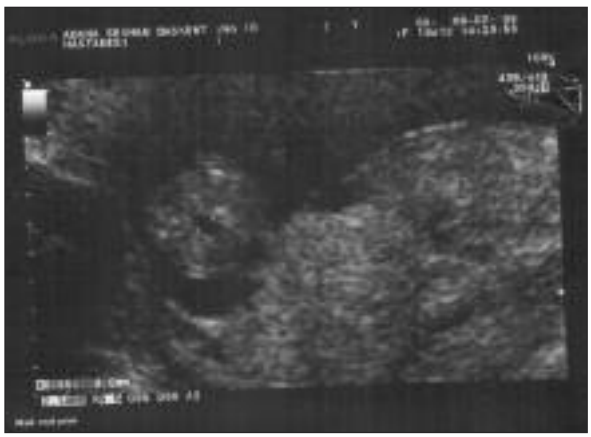

FIGURE 1: Hypoechoic lesion 3 mm in diameter misdiagnosed as right renal pelvis at 13 weeks.

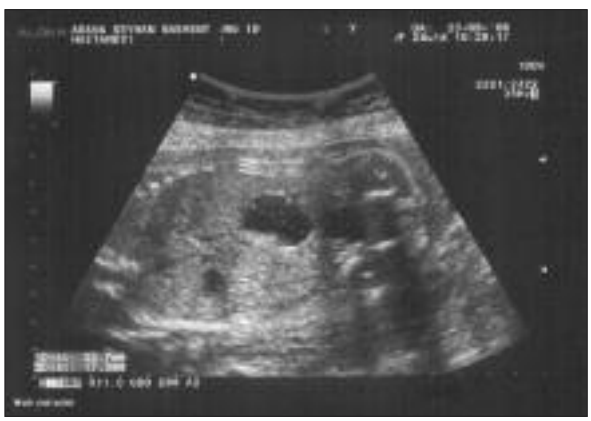

FIGURE 2: Coronal view of abdomen at 24 weeks, showing spherical cyst under right kidney.

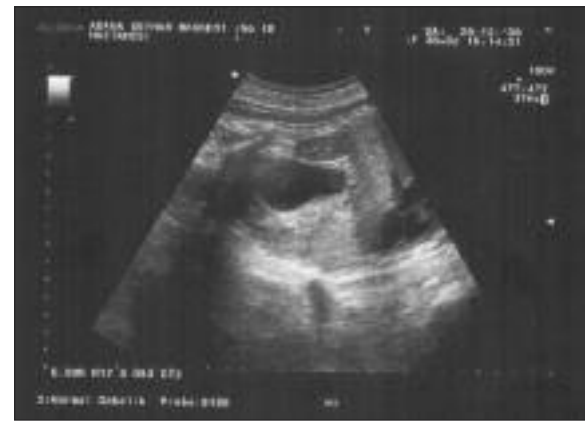

FIGURE 3: Coronal view of the fetal abdomen at 38 weeks, Note the wall of the cyst is thick and the cyst was enlarged longitudinally.

After delivery, the baby was evaluated for surgical aspect following delivery. There was a palpable suspected mass in the middle abdomen on physical examination. The ultrasonography showed that 28 x 40 x 50 mm in sized a cystic mass contained intensive echogenity and minimal debris and has a thick wall. It was from portal hilus to the top of the uterus. There was not any sign of intestinal obstruction. All blood screening was normal and she looked like a healthy baby. Magnetic resonance imaging showed that a contrast thick walled 45 x 50 x 50 mm in sized cystic mass which was lied down between gall bladder and compressed pancreas to the left side (Figure 4). After three days, the baby was attended with vomiting and abdominal distention with possible diagnosis of intestinal obstruction. At the operation, there was a duplication cyst on the second part of the duodenum (Figure 5). The cyst was opened and excised totally. Postoperative course was uneventful.

DISCUSSION

Following the prenatal diagnosis of an abdominal cyst, alimentary tract duplication has to be kept in mind. The differential diagnosis of a sonolucent cyst in the fetal abdomen includes urinary and gastrointestinal tract defects, choledochal and hepatic cysts underneath the liver, splenic and mesenteric

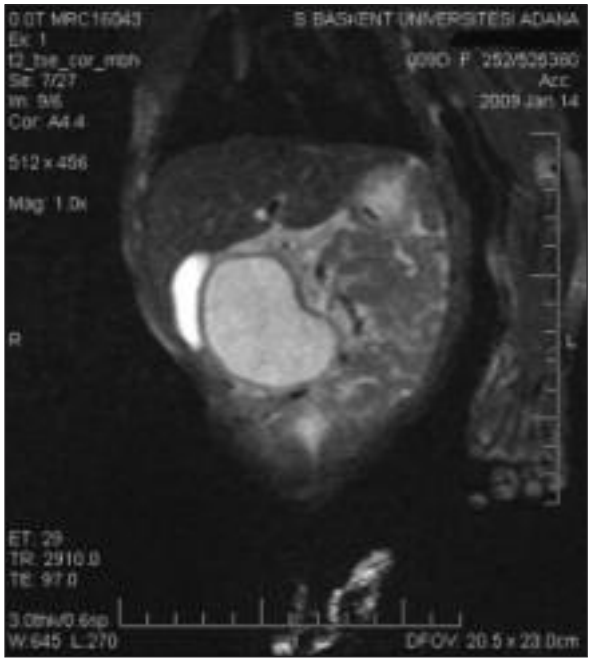

FIGURE 4: Postnatal MRI with evidence of duodenal duplication cyst adjacent to gall bladder and pancreas.

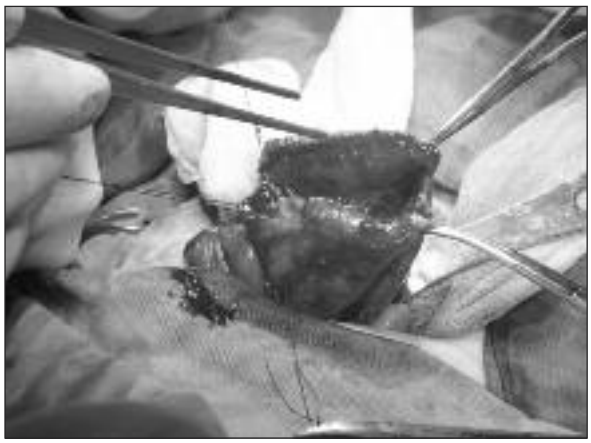

FIGURE 5: Photograph taken at the time of surgery, duplication cyst was opened and complete excised with its wall.

cysts, meconium cysts, fetal cystic neuroblastoma, mesoblastic nephroma and also ovarian cysts in females.[3,4] Intestinal peristalsis may be helpful for the diagnosis of this kind of cysts. The other important feature is the thick muscular wall.[5] The cyst in our case had thick muscular wall without any evidence of peristalsis during the course of pregnancy.

Duplication cysts are usually attached to the alimentary tract. They have a common blood supply with adjacent segment of intestine. The shape of the cyst may vary, such as spherical cysts with no communication with the bowel lumen, non-communicating tubuler cysts, tubuler communicating cysts, and cysts which are free in the peritoneal cavity with only a thin mesenteric stalk.[6] The etiology of these duplications is not definitely described. Vacuolization, diverticularization, caudal twinning, and split notochord theories have been postulated.[2]

Prenatal diagnosis of an enteric duplication allows for planning of the appropriate postnatal working in order to establish the diagnosis and to screen for associated malformations. Associated anomalies (such as bronchopulmonary, vertebral and foregut malformations) were reported at about 42% in some case series.[7]

Abdominal mass, abdominal distention, constipation, vomiting and respiratory distress were the most frequently encountered signs and symptoms in postnatal period. Intestinal obstruction bleeding or perforations are possible symptoms. Undiagnosed infants may experience life threatening complications.[5] The diagnosis can be made preoperatively by several investigations but the malformation is frequently discovered during surgery.[8] They have a normal gastrointestinal mucosal lining at the pathological examination.[9]

Barium studies usually reveal an intraluminal, intramural, or extrinsic mass, and ultrasonography (US) demonstrates its cystic nature. When US findings are inconclusive, computed tomography or MRI can be used to show the true nature, location, and extent of the lesion, as well as associated vertebral anomalies and possible other duplications.[10]

Duodenal duplications are also rare malformations with several anatomical varieties. The preferred treatment for duodenal duplications is complete removal when the location allows it without endangering nearby anatomical structures.[11] Surgical complications were related to the size and location of the duplication, communication with the gastrointestinal tract or vertebral canal, presence of heterotopic gastric mucosa and involvement of mesenteric vessels. Complete excision of the duplication should be possible in most cases.[12]

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