

INTRALUMINAL CONTRAST; A HINT FOR THE DIAGNOSIS OF COMMUNICATING TYPE COLONIC DUPLICATION CYST

Ismail M. Kabakus, Deniz Akata

Department of Radiology, Hacettepe University School of Medicine, Ankara, Turkey

PJR January - March 2015; 25(1): 34-36

ABSTRACT

Duplication cyst is a congenital anomaly of gastrointestinal system. Although it is a benign lesion, in some cases it causes obstruction by either itself or due to intussusception. We present a pediatric case with recurrent intussusception due to colonic duplication cyst. Although the duplication cyst showed typical sonographic features, it had intraluminal high density due to passage of oral contrast which is a clue to put the diagnosis of communicating type duplication cyst.

Keywords: Duplication cyst; communicating type; CT; pediatric; intussusception

Case Report

Eight year-old patient with history of intussusception, presented to emergency room with abdominal pain, vomiting, defecation problem. He had intussusception 3 months ago, and was treated with water soluble contrast reduction. After the treatment, he was hospitalized for 5 days. During hospitalization period, there appeared no other complication so he was discharged without any further study.

This time he came to the emergency room with 3 days history of abdominal pain and vomiting. His laboratory tests showed elevated liver enzymes ALT: 1015 U/L, AST: 913 U/L, GGT: 114 U/L. Sonographic evaluation revealed periportal lymphadenopathies, pericholecystic fluid, and increased vascularity of gall bladder wall which were all consistent with viral hepatitis. Furthermore invaginated ileocecal bowel segment and mesenteric lymphadenopathies were seen. He was hospitalized for treatment and further evaluation for the recurrent intussusception. Anti-HAV IgM and IgG levels were high and he had yellow sclera. He had palliative treatment for hepatitis-A

and underwent water soluble contrast reduction for intussusception. A second ultrasound (US) evaluation was done which did show 3 x 2.5 cm hyper-isoechoic lesion with the wall resembling intestinal wall located adjacent to ascending colon (Fig. 1). Enteric duplication cyst and dermoid tumor were in the differential diagnosis. Computed tomography (CT) was suggested for definitive diagnosis. CT revealed 3 x 3 cm lesion with smooth border located within the wall of ascending colon (Fig. 2). The lesion was considered to be the reason for recurrent intussusception. Surgical resection was planned after some time needed for his full recovery.

Two months later, he was hospitalized for surgical resection. His laboratory tests were unremarkable. He had no symptom. During operation second luminal cystic mass was seen adjacent to ascending colon wall. Six cm colon segment was resected with the lesion. There were no complication after surgery and the patient was discharged one week later. Surgical material went under microscopic examination. The lesion was found to have intestinal walls and mucosa. The final diagnosis was the duplication cyst.

Correspondence : Dr. Ismail M. Kabakus
Department of Radiology,
Hacettepe University School of Medicine,
Sihhiye, Ankara 06100, Turkey.
Tel: +90 312 305 11 88
Email: mikdat05@hacettepe.edu.tr

Submitted 13 April 2015, Accepted 29 April 2015

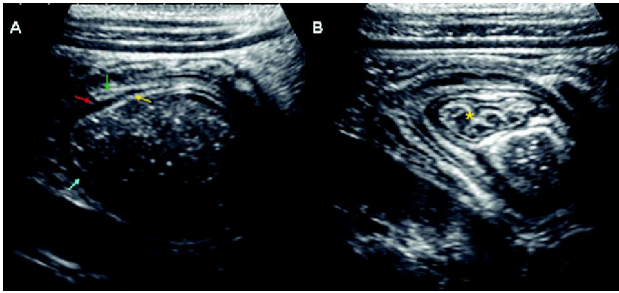


Figure 1: Transverse sonographic image of abdominal right lower quadrant; A hyper-isoechoic lesion measuring 3 x 2.5 cm in size with numerous hyperechoic foci is seen attached to the wall of cecum. It has a cystic appearance due to the surrounding wall resembling an intestinal wall. The layers of the intestine can be delineated as; superficial mucosa(yellow), mucosa(light blue), submucosa(red), muscularis propria(green). B adjacent to ascending colon(asterix)

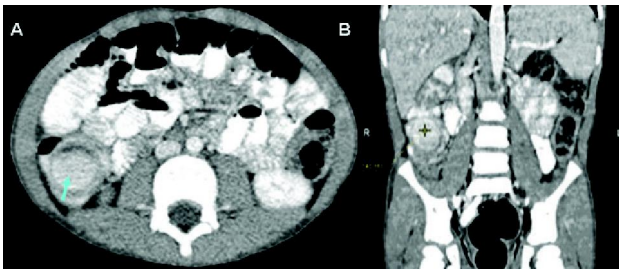


Figure 2: A axial B coronal reformatted CT images with intravenous and oral contrast; well-circumscribed lesion (arrow) adjacent to ascending colon located in the right lower quadrant with intraluminal high density (140 HU) due to contrast material.

Discussion

Intussusception is one of the most common causes of bowel obstruction in pediatric age group especially up to 18 months of age, and if not treated, may lead to bowel ischemia due to vascular compression starting from venous vessels, perforation and death. It occurs when a segment of bowel invaginates into a more distal segment, classically at the ileocecal junction.¹ If not treated, necrosis and / or perforation of the bowel may occur. Up to 18 months of age, enlarged mesenteric lymph nodes are usually leading point. After that age, further investigation needs to be done for underlying cause of intussusception as in our case.² Lymphoma or gastrointestinal system congenital anomalies may be the reason for intussusception at older children.

Enteric duplication cysts are rare congenital anomalies arising anywhere along the alimentary tract. Enteric duplication cysts are defined by their histologic appearance, which mimics that of the native gastro-

intestinal tract possessing an inner mucosa-submucosa layer surrounded by an outer smooth-muscle layer.³ The double wall or “muscular rim” sign has been suggested to be characteristic of duplication cysts.^{4,5} The characteristic sonographic appearance consists of an inner hyperechoic rim correlating to the mucosa–submucosa and an outer surrounding hypoechoic layer reflecting muscularis propria.^{4,5} The CT findings of duplications usually include a large, well-circumscribed, spherical, or tubular cystic mass.⁶ Enteric duplication cysts can be divided into two types; communicating or non-communicating.⁷ In our case it was an enteric duplication cyst located in ileocecal region. The patient was 8 years old with recurrent intussusception, both the age and the recurrence should have been a warning sign to investigate more about the case. Although the first US examination did not reveal any other pathology other than invaginated bowel loops and mesenteric lymphadenopathies, the second examination after the treatment revealed hyper-isoechoic lesion adjacent to cecum and ascending colon. The lesion had intestinal wall, that was consistent with the diagnosis of duplication cyst. Although they are cystic in nature and usually have low density on CT; as in our case, communicating type may show high density on CT with orally given contrast and also hyper-isoechoic on ultrasound because of the communication between true lumen of colon and lumen of duplication cyst.

Conclusion

Intussusception is one of the most common causes of intestinal obstruction in infancy and early childhood period. This case revealed a duplication cyst located ileoceacally as the cause of recurrent intussusception. It is important to keep in mind that duplication cysts may have density up to 140 HU on oral contrast given CT examination and hyper-isoechoic appearance on ultrasound when it is communicating type.

Conflict of Interest: The authors declare that they have no conflict of interest

References

1. Kaiser, A.D., K.E. Applegate, and A.P. Ladd, Current success in the treatment of intussusception in children. *Surgery*, 2007. **142(4)**: 469-75.
2. Justice, F.A., A.W. Auldist, and J.E. Bines, Intussusception: trends in clinical presentation and management. *J Gastroenterol Hepatol*, 2006. **21(5)**: 842-6.
3. Ros, P.R., et al., Mesenteric and omental cysts: histologic classification with imaging correlation. *Radiology*, 1987. **164(2)**: 327-32.
4. Segal, S.R., et al., Ultrasonographic features of gastrointestinal duplications. *J Ultrasound Med*, 1994. **13(11)**: 863-70.
5. Kangarloo, H., et al., Ultrasonic evaluation of abdominal gastrointestinal tract duplication in children. *Radiology*, 1979. **131(1)**: 191-4.
6. Lee, J., et al., Cystic lesions of the gastrointestinal tract: multimodality imaging with pathologic correlations. *Korean J Radiol*, 2010. **11(4)**: 457-68.
7. Liaqat, N., et al., Enteric duplication in children: A case series. *Afr J Paediatr Surg*, 2014. **11(3)**: 211-4.