

Meckel's Diverticulum Tip Attaches to Posterior Umbilicus Caused Umbilical Pain in 11-year-old-boy: A Case Report

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Abstract

Meckel's diverticulum attaches to posterior umbilicus caused umbilical pain is uncommon and scarcely seen or reported in literature or even in medical practice. We present clinical presenting symptom, computed tomographic finding, intra operative finding, operative management and pathologic finding of Meckel's diverticulum attach to umbilicus in 11 years old boy.

Keywords: Meckel's diverticulum, Omphalomesenteric duct remnant, Vitellointestinal duct, Umbilical mass, Umbilical pain

INTRODUCTION

The omphalomesenteric duct remnant is one of the rare congenital anomalies associated with the primitive yolk stalk. The vitellointestinal duct provides nutrition to the early developing embryo. The duct provides a communication between the primitive yolk sac on the ventral side of embryo and the midgut loop through the umbilical coelom. The OMD gradually attenuates and involutes from the terminal part of ileum by 5th-9th week of gestational period. Remnants of the duct present as varied anatomical entities. The most common presentation of a persistent duct (67%) is the Meckel's diverticulum, follow by patent OMD other anomalies area rare and recorded as case reports or cases series¹.

The most common symptoms of Meckel's diverticulum were rectal bleeding, intestinal obstruction and abdominal pain, rarely associated with umbilical abnormality. About 10% of the MD may be attached to the umbilicus with a fibrous cord, in several cases, however, the fibrous cord is seen to regress leaving no trace of connection between the MD and umbilicus². In this case study will show Meckel's diverticulum with umbilical associated symptom.

CASE REPORT

Thai boy 11 years old without previous medical problem. He presented with umbilical pain off and on about 1 year. On physical exam palpable mass 1-2 cm in

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diameter with mild tenderness under umbilical area. His symptom response to IV antibiotic but he was suffered from recurrence of symptom in these 3 weeks.

CT whole abdomen showed cystic lesion 1.7 x 1.5 x 1.7 cm underneath umbilical area abutting a small bowel loop without intervening fat plane. Omphalomesenteric remnant or cyst was suspected.

Explore umbilicus was performed via infra-umbilical incision and revealed mass diameter about 1.5 cm in size with connected to Meckel diverticulum (small intestine). There was evidence of adhesion and inflammation around falciform ligament and above umbilical area. Complete resection of Meckel's diverticulum with

Heineke-Mikulicz enteroplasty was accomplished via infra-umbilical approach.

On gross examination. The specimen appeared in a tubular structure resembling small bowel segment with its length of 3 cm and 1-1.5 cm in diameter (Figure 3). The resected end showed features of small bowel wall while the tip portion showed thick fibrotic tissue (Figure 4). No tumor mass was found.

Microscopic exam showed muscular wall and serosa resembling those of small bowel wall. The mucosa appears comprising small intestinal lining and gastric mucosa with both oxyntic and pyloric type identified, Chronic ulcer is also seen in the lesion.

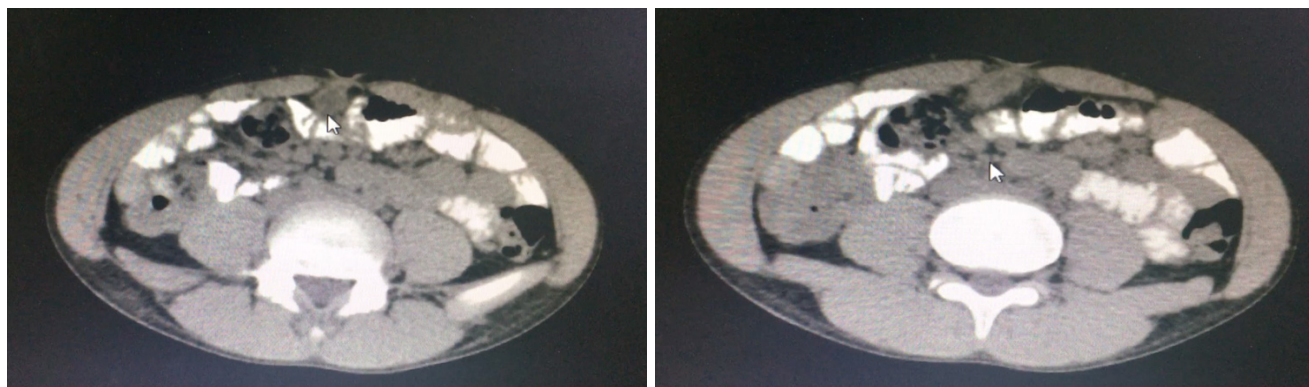


Figure 1 Contrast-enhanced CT showed cystic lesion 1.7 x 1.5 x 1.7 cm underneath umbilical area abutting a small bowel loop without intervening fat plane.

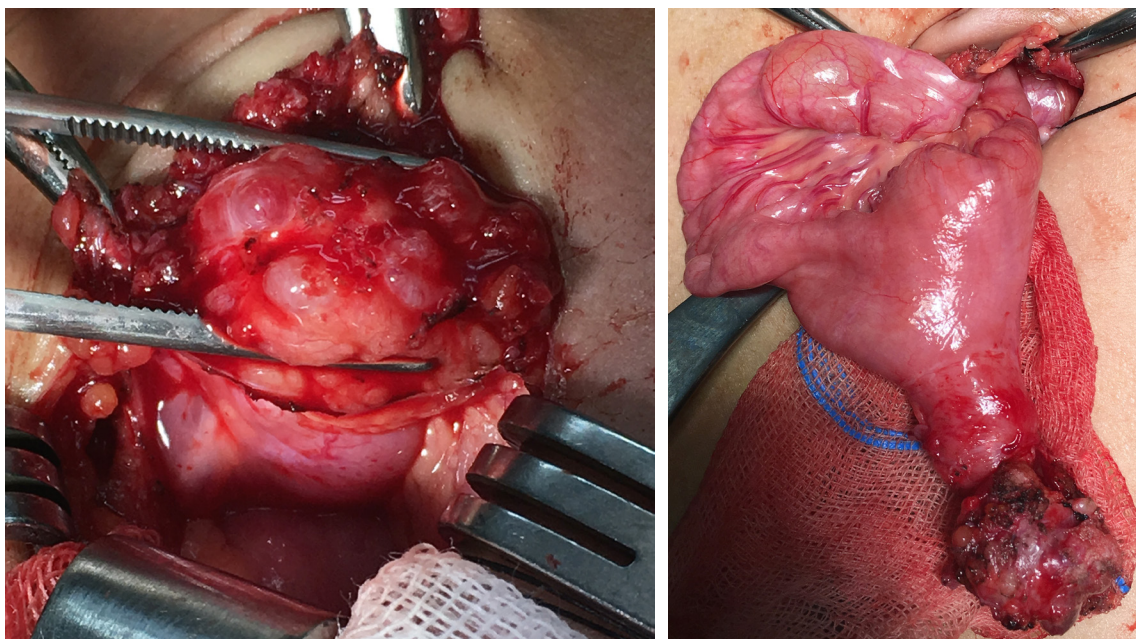


Figure 2 Intra operative finding showed mass diameter about 1.5 cm in size with connected to Meckel diverticulum (small intestine).

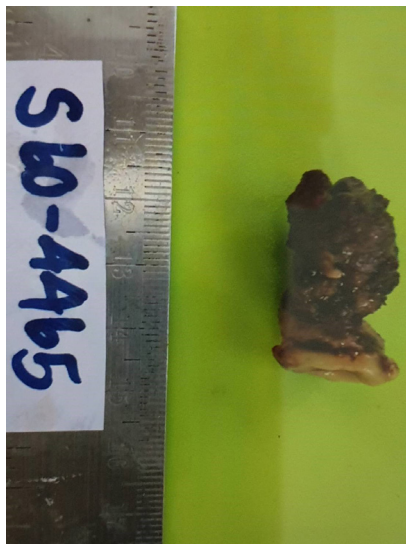


Figure 3 Tubular Structure



Figure 4 Thick fibrous tissue at tip of lesion

No evidence of malignancy was found. The diagnosis was persistent omphalomesenteric duct with presence of ectopic gastric mucosa and chronic ulcer.

His postoperative course was smooth and resume diet as usual. After an uneventful recovery, he was discharge and was able to school within a few days.

DISCUSSION

About 10% of the MD may be attached to the umbilicus with fibrous cord, the several cases however, the fibrous cord is seen to regress leaving no trace of connection between the MD and the umbilicus².

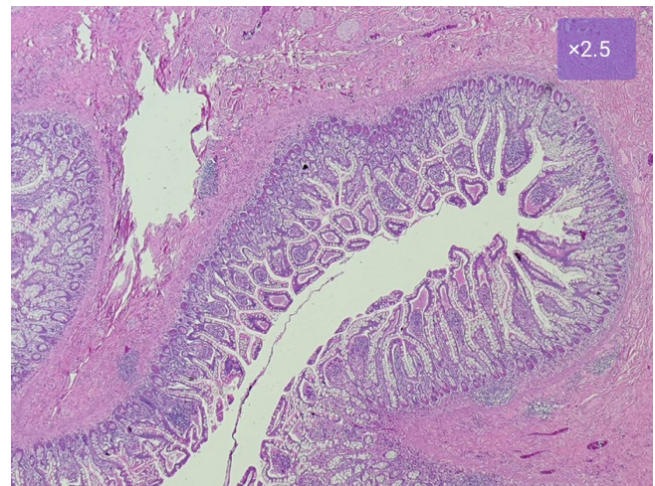


Figure 5 Omphalomesenteric duct with small intestinal mucosa (x 2.5)

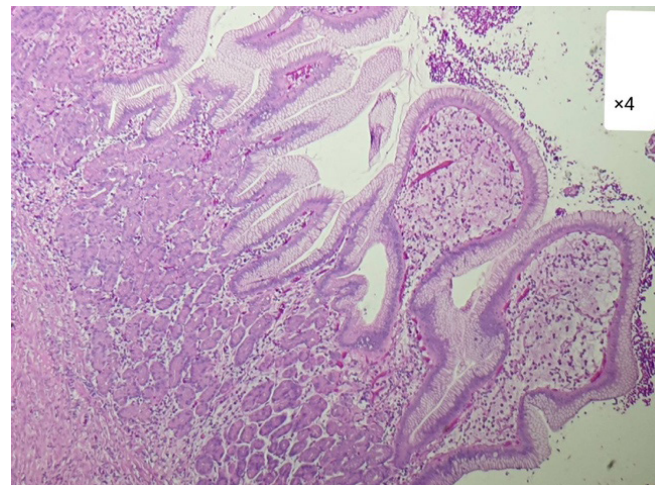


Figure 6 Omphalomesenteric duct with oxyntic mucosa (x 2.5)

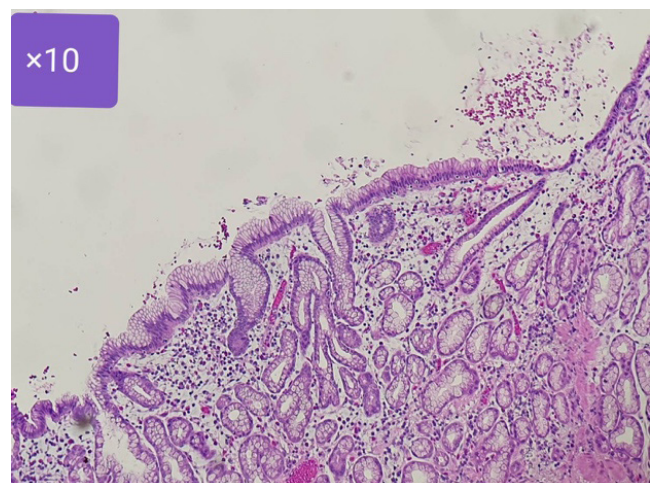


Figure 7 Omphalomesenteric duct with pyloric mucosae (x 10)

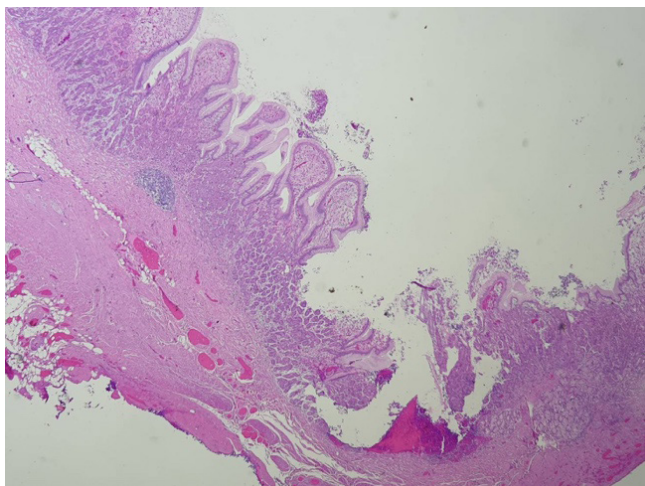


Figure 8 Omphalomesenteric duct with mucosa, muscular layer and serosa

Rarely symptomatic MD presented as recurrent umbilical pain or palpable as umbilical mass like in this case. Rarely seen the case of MD which the tip of Meckel's diverticulum attaches to posterior portion of umbilicus. The inflammation around umbilicus from intraoperative finding could explained the patient's symptom.

At first the differential diagnosis of this case from the CT abdomen finding are omphalomesenteric cyst or urachal cyst but the finding of abutting small bowel loop preferable omphalomesenteric duct cyst. Actually, only CT abdomen finding did not enough to make definite diagnosis and surgical intervention for accurate determination of the origin still required³.

Iwasaki³ reported OMD cyst presented as umbilical

cyst in 6 year-old-girl. The OMD cyst did not connected to small bowel or terminal ileum, but histopathological confirmed ectopic gastric mucosa with fundic glands at the top of inner side of umbilical cyst.

Nayak B.⁴ reported the simultaneous presence of OMD cyst, fibrous band and Meckel's diverticulum which extremely rare in the 8 year-old-child. The tissue section of both Meckel's diverticulum and an OMD cyst revealed ectopic gastric mucosal heterotopia.

CONCLUSION

Remnants of the vitellointestinal duct can present as varied anatomical entities but the most common presentation of a persistent duct is the Meckel's diverticulum. Nevertheless, rarely symptomatic Meckel's diverticulum presented as recurrent umbilical pain or palpable umbilical mass. The surgical intervention for accurate determination the origin of umbilical abnormalities is still required.

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บทคัดย่อ รายงานการรักษาภาวะติ่งลำไส้เล็กเมกเกล (Meckel's diverticulum) ฝังติดกับสะดือเป็นสาเหตุของอาการปวดสะดือในผู้ป่วยเด็กชายอายุ 11 ปี

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อาการปวดสะดือซึ่งเกิดจากติ่งลำไส้เล็กเมกเกล (Meckel's diverticulum) ฝังติดกับสะดือ พบไม่บ่อย และแทบจะไม่มีรายงานในบทความวิจัยในอดีต หรือแม้กระทั่งในเวชปฏิบัติ รายงานฉบับนี้แสดงกรณีศึกษาอาการแสดง ผลภาพเอกเรย์คอมพิวเตอร์ สิ่งที่ตรวจพบภายในห้องผ่าตัด วิธีการผ่าตัดรักษา และผลทางพยาธิวิทยาของผู้ป่วยเด็กชายอายุ 11 ปี ซึ่งมีติ่งลำไส้เล็กเมกเกลฝังติดกับสะดือ