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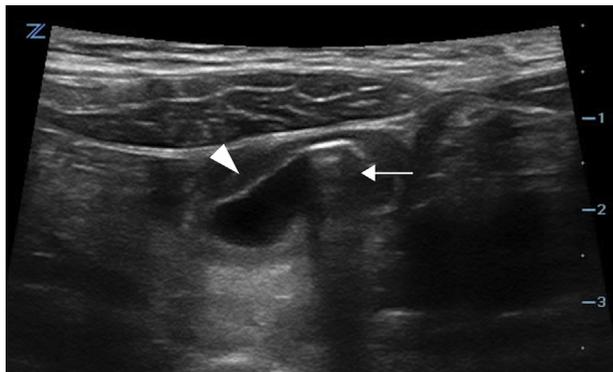
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Figure 1. Point-of-care ultrasonographic image from the first ED visit, demonstrating Meckel's diverticulum as a tubular structure with blind end that was fluid filled but also contained gas (arrow). It was located in the lower abdomen adjacent to the abdominal wall and was outlined by a thickened wall exhibiting gut signature (arrowhead).

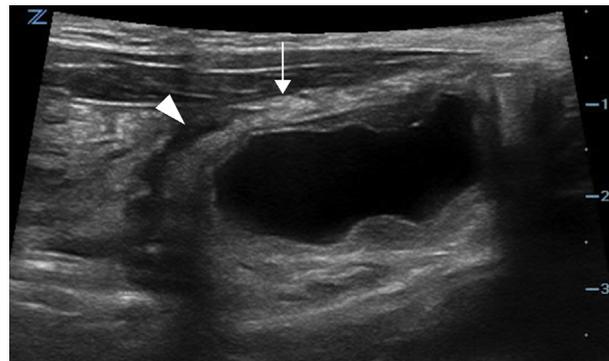


Figure 2. Point-of-care ultrasonographic image from the second ED visit, demonstrating thickened mesenteric fat tissue (arrow) with free fluid (arrowhead) around the Meckel's diverticulum, suggestive of diverticulitis.

[Ann Emerg Med. 2019;73:e7-e8.]

A 13-year-old boy presented to the emergency department (ED) after 4 days of abdominal pain without fever or bloody stool, although a year ago, he had had a similar episode and was medically treated for presumed appendicitis. He had normal vital signs but periumbilical and right lower quadrant tenderness; his WBC count and urinalysis results were normal. The emergency physician performed bedside ultrasonography, revealing the diagnosis (Figure 1).

*For the diagnosis and teaching points, see page e8.
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IMAGES IN EMERGENCY MEDICINE

*(continued from p. e7)***DIAGNOSIS:**

Meckel's diverticulum. After discussion, the patient was discharged home for an outpatient Meckel's scan, which confirmed the diagnosis; surgeons planned an elective resection. However, 3 weeks later the patient re-presented to the ED because of increasing pain, and the emergency physician again performed ultrasonography, this time with the results showing signs of Meckel's diverticulitis (Figure 2).

Meckel's diverticulum is the most common congenital anomaly of the gastrointestinal tract¹ and is caused by an incomplete obliteration of the omphalomesenteric duct. Approximately 2% to 5% of patients develop complications during their lifetime, usually before aged 4 years.² Making this diagnosis is often a clinical challenge, especially for patients at an older age and without gastrointestinal bleeding.³ The diagnosis should be suspected in cases of recurrent small bowel intussusception, bowel obstruction, and symptoms that mimic appendicitis.² Meckel's scan is the preferred diagnostic modality in stable patients⁴ but may be challenging to obtain. Ultrasonography can demonstrate a tubular blind-ended structure arising from the ileal loops.^{5,6}

The patient was admitted and successfully underwent an urgent Meckel's resection.

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REFERENCES

1. Sagar J, Kumar V, Shah DK. Meckel's diverticulum: a systematic review. *J R Soc Med.* 2006;99:501-505.
2. Ruscher KA, Fisher JN, Hughes CD, et al. National trends in the surgical management of Meckel's diverticulum. *J Pediatr Surg.* 2011;46:893-896.
3. Park JJ, Wolff BG, Tollefson MK. Meckel diverticulum: the Mayo Clinic experience with 1476 patients (1950-2002). *Ann Surg.* 2005;241:529-533.
4. Rerksupphaphol S, Hutson JM, Oliver MR. Ranitidine-enhanced 99mtechnetium pertechnetate imaging in children improves the sensitivity of identifying heterotopic gastric mucosa in Meckel's diverticulum. *Pediatr Surg Int.* 2004;20:323-325.
5. Kotha VK, Khandelwal A, Saboo SS, et al. Radiologist's perspective for the Meckel's diverticulum and its complications. *Br J Radiol.* 2014;87: 20130743.
6. Baldisserotto M, Maffazzoni DR, Dora MD. Sonographic findings of Meckel's diverticulitis in children. *AJR Am J Roentgenol.* 2003;180:425-428.