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ISCHEMIC MECKEL'S DIVERTICULUM AND ACUTE APPENDICITIS

A mesodiverticular band causing small-bowel obstruction and leading to ischemia of a Meckel's diverticulum is rare. We report the first incidental coexistence of this complication of Meckel's diverticulum with acute appendicitis.

A 28-year-old man presented with periumbilical abdominal pain, which shifted to the right lower quadrant. There were no aggravating or relieving factors. The pain was associated with nausea but no vomiting or bowel disturbance. On clinical examination, he was afebrile and his vital signs were normal. Abdominal examination revealed tenderness and guarding localized to the right lower quadrant with rebound. The leukocyte count was 17.2×10^9/L. Measurement of serum electrolytes, urea and creatinine and urinalysis gave normal results. An abdominal x-ray film was unremarkable.

A clinical diagnosis of acute appendicitis was made and appendectomy was performed through a McBurney's muscle-splitting incision. The appendix appeared normal and there was evidence of periappendicitis. The appendectomy incision was closed after palpation suggested the presence of an obstructed loop of small bowel, possibly through an adhesive band, and the abdomen was re-entered through a midline incision. A Meckel's diverticulum was noted with a mesodiverticular band densely adherent to the mesentery of the distal small bowel and associated with internal herniation of a loop of small bowel through the hiatus between the mesentery and the band. Proximally, there was significant dilatation and distally the bowel was completely collapsed. The Meckel's diverticulum itself was grossly ischemic. The dense band was divided and a segment of ileum, incorporating the Meckel's diverticulum, was removed.

Microscopically, sections through the appendix revealed pus within the lumen and a transmural neutrophilic infiltrate, consistent with acute appendicitis. Representative sections through the Meckel's diverticulum revealed partial-thickness hemorrhagic necrosis and extensive vascular congestion associated with intestinal hemorrhage. Much of the mucosa was completely infarcted. The histologic pattern suggested an ischemic cause secondary to obstruction of venous return. The patient's postoperative course was smooth, and he was discharged from hospital 4 days later.

Meckel's diverticulum is the most frequent congenital anomaly of the intestinal tract, the frequency ranging from 0.3% to 3%.[1] Although it commonly remains asymptomatic, complications include hemorrhage, intestinal obstruction, diverticulitis, intussusception and perforation causing peritonitis.[2] There are no specific physical signs or symptoms that can differentiate between Meckel's diverticulitis and acute appendicitis. Therefore, it is not surprising, as in this case, that the clinical diagnosis of acute appendicitis was made. The literature suggests that Meckel's diverticulum should be sought if the appendix is normal; however, if the appendix is overtly inflamed, search for Meckel's diverticulum is controversial. Mischinger and colleagues[3] suggested that search for a Meckel's diverticulum should be routine. Nordback and Matikainen[4] emphasized that neighbouring organs should be carefully explored, even though appendicitis has been diagnosed. In our case the pathologist reported that the appendix was acutely inflamed despite the appearance of periappendicitis. Further exploration revealed the coexistent disorder. Although one may speculate that the ileus from the appendicitis could aggravate the mechanical obstruction, the coexistent conditions are more likely to be coincidental.

The coexistence of acute appendicitis and a complication of Meckel's diverticulum is extremely rare. Moore and Johnston[5] reviewed 50 cases of complications of Meckel's diverticulum over 20 years and found only 1 case in which 2 conditions coexisted. However, they found 4 cases of Meckel's diverticulitis and 8 cases of intestinal obstruction associated with a mesodiverticular band. A mesodiverticular band was identified in our case, causing internal herniation of small bowel, presumably with subsequent venous compression and ischemia of the Meckel's diverticulum.

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