Perforated Meckel’s diverticulitis secondary to a corn kernel obstruction of lumen in an elderly patient

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Abstract

Meckel’s diverticulum (MD) is the most common congenital malformation of the gastrointestinal tract. The most frequent complications are bleeding, intestinal obstruction, intussusception and neoplasm. Perforation because of diverticulitis is very rare and usually associated to foreign bodies. We report a case of an elderly man who presented with right iliac fossa pain, raised inflammatory markers and a computer tomography (CT) scan suggestive of Meckel’s diverticulitis. He underwent a laparoscopic converted to open small bowel resection and primary anastomosis for perforated MD, which revealed a corn kernel at its base in the absence of ectopic gastric or pancreatic tissue. Symptomatic and perforated MD secondary to a phytobezoar is extremely rare in elderly patients, hence the importance of clinical suspicion in patients with abdominal pain, independent from their age, to avoid delay in diagnosis, which can lead to increased morbidity and mortality in this demographic.

INTRODUCTION

Meckel’s diverticulum (MD) is a relatively common abnormality of the gastrointestinal tract due to incomplete obliteration of the omphalomesenteric duct, which normally obliterates within the first 9 weeks of gestation. It is a true diverticulum, containing all three layers of the bowel wall and it arises from the antimesenteric border.

MD occurs in about 2% of the population, clinical presentation is usually before the age of 2 and is found twice more common in males than in females [1]. Symptomatic MD range from 4-16% [2], with the most common presentation being intestinal obstruction, gastrointestinal hemorrhage and inflammation [3]. Perforation of MD by foreign bodies is unusual as they tend to pass through the gastrointestinal tract without consequences [4].

The following case is an interesting and very rare presentation of perforated MD due to a corn kernel in an elderly patient.
DISCUSSION

MD is a true diverticulum that contains all three layers of the bowel wall. Less than 10% of cases are diagnosed prior to surgery [5], MD is often found incidentally during a surgical procedure. There are multiple risk factors that have been associated with an increased risk of developing symptomatic MD, including male sex, diverticulum >2 cm in length, presence of ectopic tissue and age <50 [6].

Meckel’s diverticulitis can be difficult to distinguish clinically from other more common causes of abdominal pain such as appendicitis, diverticulitis, inflammatory bowel disease or bowel obstruction.

CT has become a valuable resource for the investigation of abdominal pain and Meckel’s diverticulitis can be identified as a blind-ending tubular structure associated with inflammatory changes of the surrounding mesentery and bowel wall. These findings helped to obtain the patients diagnosis prior to surgery in our case.

Diverticulitis is seen in 12–31% of complicated cases of MD [7]. Perforation is very rare and is responsible for 0.5% of symptomatic MD [8, 9], mainly related to foreign bodies, inflammation and trauma. There are multiple foreign bodies that have been reported as a cause of perforation of MD with fish bones accounting for 55% of the cases in one of the studies. Surprisingly, objects like rolled tomato skin and cabbage stalks were also found as a cause of perforation [10]. After extensive literature review, this is the first case of MD perforation secondary to a corn kernel. The pathogenesis could be explained mainly by two reasons: firstly, by local inflammation due to irritation of the foreign body against the wall of the diverticulum and secondly, due to peristalsis in attempt to push the foreign body to the tip of the diverticulum. Both could lead to a decrease in blood supply, necrosis, perforation, localized peritonitis and abscess formation as seen during surgery and confirmed by histology [11]. The characteristics of the foreign body involved in our case, being a soft corn kernel, might explain the long duration of symptoms with 2 weeks of inflammation preceding necrosis and perforation 48 hours prior to presentation to the emergency department.

In several surgical series, the average mortality of MD has been reported at around 6%, with a large proportion of deaths occurring in elderly people [12]. This case is a rare finding as the incidence of symptomatic MD decreases with age, perforation is present in <1% of complicated MD, and food is a very uncommon cause for it. In addition, the fact that there was no presence of ectopic tissue reinforces the hypothesis that the perforation of the MD was secondary to a foreign body.

CONCLUSION

Although perforation of MD is rare, a missed diagnosis could lead to fatal consequences. Early suspicion and recognition are required for appropriate surgical management. The case report presented a rare complication in an elderly patient of MD perforated by a seed of corn, highlighting the importance of considering MD and their rare etiologies as a cause of acute abdomen even in the elder population.

CONFLICT OF INTEREST STATEMENT

None declared.

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