

## Perforation of Meckel's diverticulum with a foreign body mimicking acute appendicitis: A rare complication

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### Abstract

Meckel's diverticulum mimicking acute appendicitis is a very rare condition encountered in practice. MD is asymptomatic in most of cases and only about 4 to 16% of cases develop complications. Perforation of MD by a foreign body is even rarer being only reported in few cases in the literature. The surgical management might be wedge resection or segmental resection and primary anastomoses depending on the intra operative findings. We report a case with foreign body impaction in MD with perforation mimicking acute appendicitis.

**Keywords:** Appendicitis, Meckel's Diverticulum, Perforation, Foreign body.

### Introduction

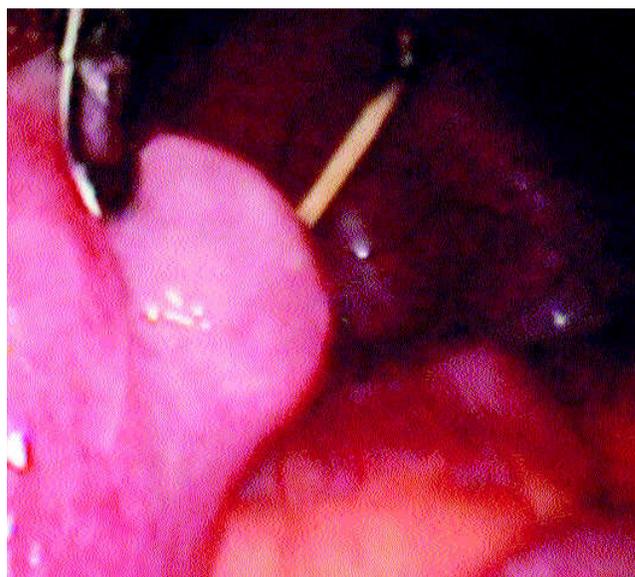
Acute appendicitis is considered as one of the commonest surgical emergencies encountered during practice and one of the common causes of acute abdomen. Yet, its presentation can overlap with many other conditions including medical emergencies. Despite the immense development in diagnostic modalities, accurate diagnosis of this condition might not be possible to obtain preoperatively in some cases.<sup>1</sup> Meckel's diverticulum mimicking acute appendicitis is a very rare condition encountered in practice. It is asymptomatic in most of cases, and only 4-16 % of patients develop complications. Perforation of Meckel's diverticulum is a very rare entity in literature. Unfortunately, most of cases reported were diagnosed intra operatively. The management of this condition might vary depending on the intra operative findings, and might include simple wedge resection or segmental resection. Here we present a case of foreign body impaction in Meckel's diverticulum with perforation which mimicked acute appendicitis.

### Case Report

A 22 years old previously healthy gentleman presented to

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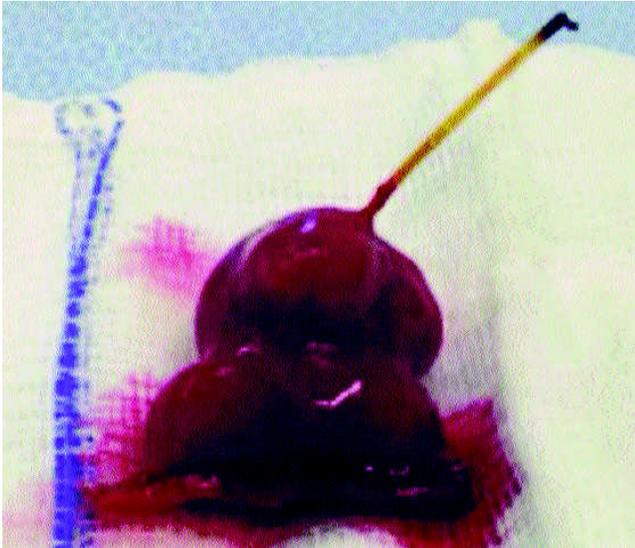
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**Figure-1:** Meckel Diverticulum perforated with Foreign Body (Tooth pick).

emergency room (ER) at Sultan Qaboos University Hospital on December 2014 with 2 days history of right lower abdominal pain. It was colicky in nature and was radiating to the right thigh. The patient reported having nausea but there was no vomiting. There was no history of fever, altered bowel habits or urinary symptoms. It was the first episode of such pain. There was no history of recent illness or contact with sick people. His past medical and surgical history was unremarkable. He was not taking any regular medications. He was not a smoker or ethanol consumer.

Examination revealed a young gentleman with an average body habitus. He looked in pain. He was afebrile and haemodynamically normal. Abdominal examination showed a non-distended abdomen. There was guarding and tenderness in the right iliac fossa with positive rebound tenderness and Rovsing sign. Based on this clinical picture, the patient was consented for laparoscopic/open appendectomy under general anaesthesia. Intra-operative findings were a perforated inflamed Meckel's diverticulum with a tooth pick (Figure-1). Meckel's



**Figure-2:** Meckel Diverticulum with foreign body resected (Diverticulectomy).

diverticulectomy done (Figure-2) and patient had a smooth post-operative recovery. Patient consented for case publication.

## Discussion

Meckel's Diverticulum (MD) is one of the rare causes of acute abdomen in surgical practice. It is defined in literature as an embryological remnant of the vitelline duct resulting from incomplete obliteration of the duct during the fifth week of foetal life. It is one of the most common congenital anomalies of the gastrointestinal tract.<sup>2</sup> It was named after Johann Friedrich Meckel who was the first to describe its anatomy and embryology. Meckel also described the different types of incomplete obliteration of the vitelline duct including enterocysts, intestinal-umbilical fistulas, and mesodiverticular bands.<sup>3</sup>

The classical teaching about MD that it occurs in about 2 % of people as discovered in autopsies, the male to female ratio is 3:1, commonly found at 2 feet from the ileocaecal valve and is 2 inches in length.<sup>4</sup>

MD is asymptomatic in most of cases and only about 4 to 16% of cases develop complications.<sup>5</sup> However, it can present with a picture of intestinal bleeding in younger age groups or intestinal obstruction, inflammation and perforation in adults.<sup>6</sup> Perforation of MD by a foreign body is even rarer being only reported in few cases in the literature.<sup>7</sup> It has been estimated to account for only 8% of cases of complicated MD.<sup>8</sup> In a study conducted in The Mayo clinic, they reported 238 cases with complications out of 1476 MD cases and only 2

patients presented with perforation of the MD by a foreign body.<sup>6</sup>

Most of cases of MD are diagnosed intra operatively either in patients with suspected acute appendicitis or in patients undergoing laparotomy or laparoscopic procedures for other indications. Ultrasonography and Abdominal Computed Tomography usually cannot make the diagnosis as it is difficult to differentiate between bowel loops and the MD. However, there were few case reports in the literature where a perforation in MD was diagnosed preoperatively on careful evaluation using Abdominal CT.<sup>8</sup>

Definite surgical management of symptomatic MD might vary from one case to another. This might include wedge or tangential resection and repair in a horizontal fashion to avoid stricture formation. In other cases, segmental resection with primary anastomosis using surgical staplers might seem appropriate especially in cases of perforation with foreign body. Careful evaluation of the adjacent bowel is advocated to exclude the presence of ulcers especially at the junctions of ectopic gastric mucosa and the normal bowel. Whether to resect asymptomatic MD encountered incidentally during laparotomy or laparoscopic procedures remains controversial. It is reported in the literature, however, that the complications from prophylactic resection of MD are less significant than the lifelong complication of unresected MD.<sup>9</sup> Prophylactic resection of MD are indicated, in patients younger than 40 years, diverticula longer than 2 cm, those with narrow necks or fibrous bands, diverticula which are suspected to contain ectopic gastric tissue, or Inflamed or thickened diverticula.<sup>10</sup>

## Conclusion

Although a rare entity, Meckel's diverticulum might mimic common surgical conditions presenting as an acute abdomen. Perforation of MD with a foreign body is very rare. Diagnosis is made intra operatively in most cases. The surgical management might be wedge resection or segmental resection and primary anastomoses depending on the intra operative findings.

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**Conflict of Interest:** None.

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