Meckels diverticulum’s injury after penetrating abdominal trauma

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Abstract
In 1595, for the first time, Hildanus described an ileal diverticulum, which was thoroughly scrutinized and defined by Johann Meckel in 1809. In most cases, Meckel’s diverticulum does not cause any problems. In a small number of patients however, these diverticula can become infected (diverticulitis) cause an obstruction of the intestine, or cause bleeding from the intestine. We present a case of simultaneous rupture of Meckel’s diverticulum and small bowel without abdominal pain following a penetrate trauma to the abdomen, sustained during a stab wound to the abdomen. (TCM-GMJ January 2016; 1:18-P19)

Keywords: Meckel’s diverticulum, abdominal trauma

Introduction

In 1595, for the first time, Hildanus described an ileal diverticulum, which was thoroughly scrutinized and defined by Johann Meckel in 1809.1 Meckel’s diverticulum is one of the most common congenital abnormalities. It occurs when the connection between the intestine and the umbilical cord doesn’t completely close off during fetal development. This results in a small out pouching of the small intestine, know as a Meckel’s diverticulum. In most cases, Meckel’s diverticulitis does not cause any problems. In a small number of patients however, these diverticulitis can become infected (diverticulitis) cause an obstruction of the intestine, or cause bleeding from the intestine. Diverticulitis or infection, of a Meckel's diverticulum (fig.1) is often mistaken for appendicitis. Meckel’s diverticulum is generally seen as an incidental finding at laparotomy. The symptomatic cases usually present with gastrointestinal bleeding, inflammation or intestinal obstruction which is the most common presentation in adults.2

Objectives

To present a case of simultaneous rupture of Meckel’s diverticulum and small bowel without abdominal pain following a penetrate trauma to the abdomen, sustained during a stab wound to the abdomen.

Clinical Presentation

We present a case of a 37-year-old man presented at the emergency department (ED) immediately after a stab wound in right side (fig.2) of abdomen with hemodynamic stability. The abdominal quadrants were not tender on palpation. On rectal examination no blood. Initial management of the patient involved intravenous fluid, routine blood tests and abdominal x-rays was normal. US of the abdomen didn’t show free fluid in the peritoneal cavity and the patient was admitted in observation.

Six hours later the abdominal pain was increasing, and abdominal tenderness. An abdominal x-rays showed free air in abdominal cavity (fig. 3). In this situation an emergent laparotomy was decided. At the exploration, the peritoneal cavity was filled with 600 cc of blood-stained intestinal fluid, while numerous dilated loops of small bowel were present (fig. 4,6.). At approximately 90 cm from the ileo-cecal junction, there was an Injury of Meckel's diverticulum and jejunal injury 1.5m from Treitz.

Intervention

The ileum was repaired in two layers: a segmental bowel resection including Meckel’s diverticulum and the gastrointestinal tube anastomosed without any tension. The patient has a normal postoperative course. The postoperative recovery was uncomplicated, and the patient was discharged on the fifth day postoperatively.

Discussion

The first case of ruptured Meckel’s diverticulum was reported by Blanc in 1899.3 However, traumatic rupture of Meckel’s diverticulum has been reported previously in few instances,4,5,6,7 Injury of Meckel’s diverticulum after penetrate abdominal trauma is a rare cause in the adult and has been reported previously only in few cases. Meckel’s diverticulum may also present with rupture secondary to blunt trauma1,8, or as iron deficiency anemia with or without episodes of overt hemorrhage.
Conclusion

This case shows that a Penetrate abdominal trauma can tear the mesodiverticulum and rupture the Meckel’s diverticulum base simultaneously, resulting in hemoperitoneum and chemical peritonitis.

Fig.1 Anatomy of Meckel’s diverticulum

Fig.2 Stab wound in right side of abdomen

Fig.3 Abdominal x-rays

Fig.4 The injury of Meckel’s diverticulum

Fig.5 The injury of Meckel’s diverticulum

References