

# Traumatic Perforation of Meckel's Diverticulum Following a Bull Gore Injury

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## ABSTRACT

In abdominal trauma following a penetrating and blunt injury, diagnostic laparoscopy can improve the accuracy of the diagnosis and the management. A case has been reported here, of a 55 year old man admitted following a penetrating injury in the abdomen by bull goring, over the left groin. Following diagnostic laparoscopy, a perforation in the Meckel's diverticulum was found

incidentally and it was resected following an open procedure, due to peritoneal contamination and the late presentation of the patient to the hospital. Feeding jejunostomy was done following resection of the Meckel's diverticulum for proximal drainage and later, for feeding purposes. Diagnostic laparoscopy plays a major role in the diagnosis and the further management of any abdominal injury.

**Key Words:** Meckel's diverticulum, Perforated Meckel's diverticulum, Diagnostic laparoscopy

## INTRODUCTION

Meckel's diverticulum (MD) is a congenital disorder that results from an incomplete obliteration of the vitelline duct. MD may give rise to bleeding, intestinal obstruction and inflammation. However, its perforation by a foreign body is an extremely rare and is a life-threatening complication [1]. In adults, the manifestations include a broad spectrum of symptoms ranging from an incidental finding during surgery, iron deficiency anaemia of unknown aetiology, and an acute abdomen due to the mechanical complications of the diverticulum [2]. The use of diagnostic laparoscopy in acute abdominal pain, especially when the patients have been admitted for acute pain in the lower abdominal quadrants, improves the accuracy of the diagnosis and it leads to improvements in the treatment procedures [3]. Perforation of a Meckel's diverticulum by a foreign body is a rare occurrence and as a rule, is not mentioned in the list of complications which arise from the presence of this remnant of the vitello-intestinal duct. The first reported case was in 1899, where Blanc Meckel's diverticulum was found in 2.0 to 3.0 per cent of all the cases which came for autopsy. It is said to be more common in males than in females, the ratio being about 3:1 [4]. The persistence of a part of the vitello-intestinal duct as a solitary diverticulum of the ileum was described by Ruysch in 1701, but it has been eponymously linked with the name of Johann Frederick Meckel, who in 1812, first described it accurately.

## CASE REPORT

A 55 years old male patient presented with a bull goring injury over the left groin and was hospitalized after three days of injury, with peritoneal contamination. The X-ray of the erect abdomen was done and gas was found below the diaphragm [Table/Fig-1], which showed a hollow viscous perforation. Diagnostic laparoscopy was done and a traumatic perforation in the Meckel's diverticulum was found. The procedure was converted because of peritoneal soiling due to the intestinal contents [Table/Fig-2]. The resection of the diverticulum and end-to-end anastomosis was done. The patient had a burst abdomen on the 7th postoperative day. Tension

suturing was done and the patient improved following a good nutritional support.



[Table/Fig-1]: X-Ray erect abdomen showed gas under diaphragm



[Table/Fig-2]: Traumatic perforated Meckel's diverticulae with fecal soilage

## DISCUSSION

Diagnostic laparoscopy plays a major role in the diagnosis and management of any type of abdominal injury. The importance of diagnostic laparoscopy in abdominal injury and the incidence of Meckel's diverticulum which underwent a perforation following a penetrating injury (bull goring) is a rare event. In the literature, it has been found that the Meckel's diverticulum injury commonly occurs because of swallowed sharp objects. Diagnostic laparoscopy should be performed routinely in cases of acute abdominal pain, in the lower quadrants of suspected appendiceal origin to avoid the overlooking of other causes of the symptoms. Meckel's diverticulum is a pathology which is not rarely found everyday in clinical medicine especially when it presents with one of its complications. The specific diagnosis is a bit difficult to make, because of the low sensibility and specificity of the symptoms and because of the diagnostic and the instrumental techniques used [5]. Many complications of surgical importance due to the presence of a Meckel's diverticulum, have received comparatively little attention, perhaps owing to their rarity and many of them are perforations which are caused by foreign bodies [6]. The variety of foreign bodies which cause perforation is at first sight extensive but considering the wide range of the foreign bodies swallowed, it is perhaps surprising that most of them do not cause perforation. Fish bones caused the

perforation in 55% of the reported cases [6]. Here, in our case, what was more surprising was that bull goring which hit a Meckel's diverticulum directly was found to be a rare variety. A penetrating injury of the bowel usually affects the fixed part of the bowel, as Meckel's diverticulum arises from the antimesenteric border of the ileum and its perforation following a penetrating injury is not commonly encountered. Here, in our case, we want to report that Meckel's diverticulum is an incidental finding and that it is a rare event following a penetrating injury.

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