INTRODUCTION
Meckel's diverticulum is a remnant of Vitelline duct. It is the most common congenital anomaly of gastrointestinal tract found in approximately 2% of population. It is located on the antimesenteric border of terminal ileum within 60 centimetres of ileocaecal junction. Meckel's diverticuli are symptomatic in only 4% of cases. The symptomatology of Meckel's diverticulum is due to complications which in the order of frequency are haemorrhage, intestinal obstruction, intussusception, Meckel's diverticulitis and chronic peptic ulceration leading to intestinal perforation. Ectopic mucosa is found in approximately 50% of Meckel's diverticuli out of which more than 60% consist of gastric mucosa and 15% contain pancreatic mucosa. Intussusception is the invagination of a portion of the gut (intussusceptum) within an immediately adjacent segment of the gut (intussuscipiens). The intussusception can cause partial or complete intestinal obstruction depending upon duration of symptoms and length of involved segment.

CASE REPORT
A 33 years old male patient, who was a chronic smoker, presented with complaints of upper abdominal pain, nausea, vomiting, anorexia and loose stools (2 – 3 per 24 hours) to United Nations Field Hospital, Sudan. The patient gave history of four episodes of similar symptoms of varying intensity during last one year. He had been previously managed conservatively in outdoor with proton pump inhibitors and antibiotics.

The patient was admitted and on initial physical examination, the patient had normal vital signs with mild epigastric tenderness. There was no palpable abdominal lump and digital rectal examination was normal. His TLC was 10.8 x 10^9/L; neutrophils were 68% and haemoglobin was 14.7 g/dL. Serum amylase, liver function tests, urea, electrolytes, stool examination, chest X-ray and ultrasound abdomen were all normal. Plain X-ray abdomen did not reveal dilated gut loops or air fluid levels. He was managed on the lines of acute gastroenteritis with intravenous antibiotics and proton pump inhibitor. After 3 days, the pain recurred in right iliac fossa with rebound tenderness and leukocytosis. Surgery was performed with provisional diagnoses of acute appendicitis and/or acute Meckel's diverticulitis. Per-operative findings revealed invaginated Meckel's diverticulum causing non-obstructing intussusception.

CASE REPORT
Invaginated Meckel's Diverticulum: A Rare Cause of Small Intestine Intussusception in Adults
Nauman Anwar Rana1, Muhammad Omar Rathore1 and Muhammad Usman Khan2

ABSTRACT
Intussusception is commonly seen in infants. It is occasionally found in adults usually due to carcinomas, colonic diverticuli, polyps and rarely Meckel's diverticulum. An adult male presented with upper abdominal pain, nausea, anorexia and loose stools. The initial investigative workup was unremarkable and patient responded to treatment given for acute gastroenteritis. After 3 days, the pain recurred in right iliac fossa with rebound tenderness and leukocytosis. Surgery was performed with provisional diagnoses of acute appendicitis and/or acute Meckel's diverticulitis. Per-operative findings revealed invaginated Meckel's diverticulum causing non-obstructing intussusception.


INTRODUCTION
Meckel's diverticulum is a remnant of Vitelline duct. It is the most common congenital anomaly of gastrointestinal tract found in approximately 2% of population. It is located on the antimesenteric border of terminal ileum within 60 centimetres of ileocaecal junction. Meckel's diverticuli are symptomatic in only 4% of cases. The symptomatology of Meckel's diverticulum is due to complications which in the order of frequency are haemorrhage, intestinal obstruction, intussusception, Meckel's diverticulitis and chronic peptic ulceration leading to intestinal perforation. Ectopic mucosa is found in approximately 50% of Meckel's diverticuli out of which more than 60% consist of gastric mucosa and 15% contain pancreatic mucosa. Intussusception is the invagination of a portion of the gut (intussusceptum) within an immediately adjacent segment of the gut (intussuscipiens). The intussusception can cause partial or complete intestinal obstruction depending upon duration of symptoms and length of involved segment.

CASE REPORT
A 33 years old male patient, who was a chronic smoker, presented with complaints of upper abdominal pain, nausea, vomiting, anorexia and loose stools (2 – 3 per 24 hours) to United Nations Field Hospital, Sudan. The patient gave history of four episodes of similar
reduced due to narrow base of invaginated Meckel's diverticulum. Resection of 7 centimetres of ileum containing the diverticulum was done with end-to-end anastomosis. Appendicectomy was also performed. The lumen of the resected gut was found to be partially obstructed by invaginated diverticulum. The tip of the diverticulum showed oedematous and swollen mucosa with a narrow base (Figure 3). The patient made an uneventful recovery. On follow-up, the long-standing dyspeptic symptoms were alleviated.

DISCUSSION

Meckel's diverticulum and intussusception are distinct entities in general surgical practice but their combination is quite uncommon.\(^5\) Meckel's diverticulum is a true diverticulum comprising of all the three layers of bowel wall.\(^1\) Intussusception, although infrequent in adults (5%) tends to occur in the 6\(^{th}\) decade of life due to increased incidence of malignancy.\(^6,7\) An invaginated Meckel's diverticulum causing intussusception is considered to be rare and is usually encountered in adults.\(^1\) It often follows a prolonged course with recurrent acute exacerbations. When chronic, it can be either persistent or intermittent.\(^1,7\) In mechanical small gut obstruction, 2.5% of the cases are attributable to intussusception secondary to Meckel's diverticulum.\(^8\)

This patient was a young adult male who had four distinct episodes of upper gastrointestinal symptoms of varying intensity during last one year. In retrospect, the initial episodes of upper gastrointestinal symptoms can be explained on the basis of ectopic gastric mucosa causing dyspeptic symptoms and intermittent intussusception contributing towards mild upper abdominal cramps and distension after food intake. This correlation can by aptly explained by the fact that the patient's appetite improved remarkably and he gained 3 kilograms of weight in 2 months after the surgery.

Inverted Meckel's diverticulum can be diagnosed preoperatively by ultrasound examination showing characteristic tetra-layered sign by an experienced radiologist.\(^9\) CT scan has shown to be the most sensitive radiological modality for preoperative diagnosis of this condition.\(^9\) In this case, the ultrasound did not give definitive evidence apart from focal gut wall thickening (probably due to invaginated Meckel's diverticulum) and CT scan was not available in the field setup. Colonoscopy has a limited use in diagnosing intussuscepted Meckel's diverticulum as its colonoscopic features can only be appreciated by a very experienced endoscopist.\(^10\)

REFERENCES


