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"A rare case of perforated *meckel's diverticulum*"

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Abstract:

Meckel's diverticulum is the most common abnormality of the gastrointestinal tract. It is present in more than 2% of the global human population. Hemorrhage, obstruction and inflammation are the three main possible complications resulting from *Meckel's diverticulum*. Spontaneous perforation of *Meckel's diverticulum* is very rare and may mimic acute appendicitis. We are reporting the case of a 22 year-old female patient, who presented with a history of five days of acute abdominal pain including on-and-off fever, emesis and vertigo. On physical examination, her abdomen was distended with guarding all over it. A provisional diagnosis of perforated appendicitis with peritonitis or intestinal perforation was made. So CT abdomen with contrast was done. It was reported as sealed perforation with diverticulitis. A diagnostic laparoscopy followed by exploratory *laparotomy* and subsequent resection and *anastomosis* of the ileum was performed under general anesthesia. *Meckel's* diverticulitis was confirmed by *histopathological* findings. This case report is an interesting and unusual case of complications associated with inflamed *Meckel's diverticulum* and emphasizes the importance of considering *Meckel's diverticulitis* as a differential diagnosis in every patient presenting with acute abdomen.

Introduction

[3]*Meckel's diverticulum* was first described in 1808, resulting from failure of complete obliteration of the vitelline duct. [4]It is located on the anti-mesenteric border of the small intestine commonly 60 cm away from the *ileocaecal* valve and about 3 to 5 centimetres long. It is a common anomaly of the small intestine that occurs in approximately 2% of the population, often found incidentally at the time of abdominal exploration.

[5]*Meckel's diverticula* are designated true *diverticula* because their walls contain all of the layers found in the small intestine. Approximately 60% of *Meckel's diverticula* contain *heterotopic* mucosa of which over 60% consist of gastric mucosa. Pancreatic *acini* are the second most common finding. Others include Brunner's gland, pancreatic islets, chronic mucosa, and endometriosis and hepatobiliary tissue. A useful, yet crude mnemonic of describing Meckel's diverticula is the rule of "two": [6]2% prevalence, 2:1 male predominance, location 2 feet (corresponding to 60 cm) proximal to ileocaecal valve in adults and half of the patients symptomatic are below two years of age.

[7]*Meckel's diverticulum* usually remains symptomless throughout life and is usually found at necropsy. If silent *Meckel's diverticula* get encountered in the course of a abdominal operations, they can remain untouched, provided that they are wide-mouthed and that the wall layer does not feel enlarged. Where there is doubt about the presence of inflammation, *Meckel's diverticulum* can be resected without causing any additional risk.

Case Presentation:

A 22-year-old female patient presented with a history of acute abdominal pain associated with fever, one-time emesis and vertigo. A physical examination demonstrated a distended abdomen with guarding and rigidity present on the right iliac region. The patient had taken primary treatment at another clinic and come to visit our current hospital for further management.

The patient reported a previous history of acute abdominal pain four years ago. Previous CT scans of abdomen and pelvis revealed minimal *pneumoperitonium* predominant in the right side of lower abdomen and pelvis with minimal amount of free fluid. The possibility of distal *ileal* / *Meckel's diverticulum* perforation with local peritonitis arose. The patient had no history of conditions such as diabetes mellitus, arterial hypertension or asthma, furthermore no surgical history.

On admission, the patient's vital signs were within normal range. Her blood analysis revealed slightly elevated white blood cells (WBC) which amounted to 14,200/µl (normal values 4000 to 9000/µl), 90% of them being neutrophils (normal values 45% to 85%). The rest of the routine preoperative blood tests and her chest and abdominal X-ray images were unremarkable. A provisional diagnosis of perforated appendicitis, peritonitis and intestinal perforation was made whose initial management included intravenous fluid resuscitation, antibiotic coverage, Ryle's tube insertion and Foley's *catheterisation*.

The patient underwent *ultrasonography* that revealed a mild bowel *ileus* discovered in the right iliac *fossa* with a mild adjacent mesenteric fat inflammation. The appendix could not be traced due to distention of the *caecum* by gas. A Computer Tomography scan (Abdomen Pelvis) was suggested.

After *ultrasonography*, the patient underwent the suggested Computer

Tomography which revealed diffuse wall thickening involving ileal loops in the left periumbilical region, showing homogeneous enhancement with extensive adjacent mesenteric fat stranding and tiny extraluminal air pockets. Furthermore, the findings of enlarged mesenteric lymphnodes, minimal ascites, possible sealed perforation and a small blind-ended tubular structure arising from the distal ileal loops with enhancing walls, suggested diverticulitis of the small bowel.

As mention investigation plan for diagnostic laparoscopy and if there is no sealed intestinal perforation then plan for exploratory *laparotomy*. No other examinations were performed and, after the patient had given her written consent, she was taken to the operating theatre and diagnostic laparoscopy got executed under general *anaesthesia*. Pus could be found on pelvic region. Hence, the decision was taken for exploratory *laparotomy*.

A midline incision was taken and pus observed. The pus got sent for culture and sensitivity. A total of three *diverticula* were to be seen in the ileum, approximately 50 cm from the *ileocaecal* junction. All blood clots were removed. Local resection of ten cm of the ileum and *anastomosis* were done with the help of suturing material “silk 3-0”. *Haemostasis* achieved. Abundant peritoneal toilet was done with warm normal saline solution and the tube drain kept in pelvic region. An inflamed Meckel’s diverticulitis was confirmed by histopathology. Pus sent for culture and sensitivity did not signalize growth.

The patient recovered postoperatively after having been adjusted to antibiosis. Patient was kept nil-by-mouth for two days due to lack of proper bowel peristaltic. To increase intestinal motility, IV potassium was given. Afterwards normal oral food intake. Tube drain was removed on post-operative 5th day. Follow up was taken.

DISCUSSION

Meckel's diverticulum is a congenital anomaly found in approximately 2% of the general population. Complications develop in only 4% of patients with this malformation, with most cases presenting in childhood. Complications of Meckel's diverticulum include haemorrhage, bowel obstruction, inflammation, perforation, *intussusception*, *volvulus* and malignant transformation. The pre-operative diagnosis of a patient with *Meckel's diverticulum* often presents a challenge to the clinician in both children and adults, because presenting symptoms can be non-specific and the differential diagnosis broad. We report a complicated and unusual case of a patient with a spontaneous perforated *Meckel's diverticulum* who presented with acute abdomen. The patient required an open laparotomy for definitive diagnosis and management. Complications in patients with Meckel's *diverticulumare* rare; most patients remain asymptomatic for life. The perforation of a *Meckel's diverticulum* may mimic acute appendicitis and present as an acute abdomen. The perforation of a *Meckel’s diverticulum* is either caused by; foreign body due to irritation of foreign body and pressure necrosis of the *diverticulum* wall, or spontaneous perforation due to progressive inflammation of *Meckel’s diverticulum* wall as our case which produced peritonitis. Rarely, cases of perforation following blunt abdominal trauma have been reported, the first being by Park and Lucas in 1970. Four such cases have been reported in the medical literature. A preoperative diagnosis of a complicated MD may be challenging because of the overlapping clinical and imaging features of other acute surgical and

inflammatory conditions of the abdomen. A more specific diagnosis, however, will lead to greater recourse to a laparoscopic approach in its treatment**.**

Conclusion

Meckel's diverticulum complications are uncommon and challenge to diagnose. Early diagnosis and timely operative intervention must occur in order to provide the best outcome for these patients. Spontaneous perforated MD often presents as acute abdomen and its preoperative diagnosis is difficult. To patients with sudden abdominal pain mimic acute appendicitis accompanied by a past medical history of bloody stools and/or chronic recurrent abdominal pain, perforated MD should be kept in mind as a differential diagnosis.

Reference:

1. Schwartz's Principle of Surgery, Ninth Edition 2010, Mc Graw Hill Medical Pg. number 1002.
2. Baily and love's SHORT PRACTICE OF SURGERY, 25th edition 2008, Edward Arnold (Publishers) Ltd, Pg. number 1158.
3. Ding Y, Zhou Y, Ji Zh , Zhang J , Wang Q. Laparoscopic Management of Perforated Meckel's Diverticulum in Adults. Int J Med Sci. 2012; 9(3):243-7. PubMed | Google Scholar
4. Baily and love's SHORT PRACTICE OF SURGERY, 25th edition 2008, Edward Arnold (Publishers) Ltd, Pg. number 1158.
5. Schwartz's Principle of Surgery, Ninth Edition 2010, Mc Graw Hill Medical Pg. number 1003.
6. Baily and love's SHORT PRACTICE OF SURGERY, 25th edition 2008, Edward Arnold (Publishers) Ltd, Pg. number 1159.
7. Schwartz's Principle of Surgery, Ninth Edition 2010, Mc Graw Hill Medical Pg. number 1003.

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