Case report

Multiple inflammatory polyps resulted from Meckel’s diverticulitis presenting with chronic abdominal pain: A case report

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ABSTRACT

Introduction and importance: In most diverticulitis of Meckel’s Diverticulum (MD), perforation, obstruction and hemorrhage causing acute abdomen are seen, however, multiple inflammatory polyps (IPs) are rare, which are seen in our case.

Case presentation: We present the case of a 28-year-old female, who was admitted in the clinic for intermittent abdominal pain for 5 years. Histopathology suggested MD chronic diverticulitis and multiple inflammatory polyps.

Clinical discussion: Our patient presented was diagnosed preoperatively with suspected MD, and an laparoscopy was indicated. Intraoperatively, a huge MD with multiple IPs was found and treated by surgical excision and the specimens were sent for histopathological analysis. Histopathology revealed MD’s diverticulitis with IPs containing ectopic gastric mucosa. The patient had successful recovery.

Conclusion: Meckel’s diverticulitis is a rare cause of multiple IPs. This case can remind physicians that IPs caused by Meckel’s diverticulum should be considered in differential diagnosis of adults presenting with the isolated symptom of chronic abdominal pain.

1. Introduction

Meckel’s Diverticulum is the most common congenital malformation of gastrointestinal tract. It is the embryonic remnant of the yolk duct which is rarely found in adults. MD is usually asymptomatic and the lifetime risk of related complications is estimated at 4%. Most cases of MD are tough to diagnose and are found incidentally intraoperatively. It can cause complications such as gastrointestinal hemorrhage (31%), inflammation (25%), intestine obstruction (16%), hernial involvement (11%), intussusception (11%), fistula or umbilical sinus (4%) and tumors (2%) occur as a result of the presence of heterotopic tissues. The second most widespread complication in adults is related to the inflammatory process, which results in perforation, obstruction and hemorrhage [1]. This case is rare because it documents multiple IPs caused by Meckel’s Diverticulum’s chronic diverticulitis in an adult female presenting with atypical abdominal pain.

The work has been reported in line with the SCARE criteria [2] and the revised 2020 SCARE guidelines [3].

2. Patient and observation

2.1. Patient information

A previously healthy 28-year-old female patient, without special medical history, surgical history of a small intestine resection surgery because of trauma. She has negative drug and allergic histories. The patient is not alcoholic and doesn’t smoke. The patient was admitted in the clinic for dull and consistent abdominal pain without obvious cause, localized mainly in the upper abdominal area with 3 times every month for 5 years. It was associated with vomiting and loose yellow stools. There was no history of bleeding per rectum or genitourinary symptoms. During this time, some analgesics (no details) from the local hospital can reduce her pain and gastrointestinal endoscope test was normal. Then she went to our hospital for definite diagnosis.

Abbreviations: MD, Meckel’s Diverticulum; IPs, inflammatory polyps.

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2.2. Clinical findings

Upon inspection, the abdomen was symmetric and flat. On palpation, there was generalized guarding and tenderness. No masses were felt. The laboratory investigations revealed leuko-cytosis at 12.9 × 109/L and increased lactate level at 2.4 mmol/L. The serum red blood cells was decreased, so was the hemoglobin, albumin and total protein. The liver and kidney functions were normal.

2.3. Diagnostic assessment

Abdominal Ultrasound revealed a small quantity of free fluid in the abdomen. CT scan revealed the stenosis of small bowel. Moreover, double balloon enteroscopy made suspected diagnosis of MD, which revealed the abnormal structure of lower ileum and as a result, laparoscopy was performed after a series of preoperative preparation.

2.4. Therapeutic intervention

Surgery was done at the First People’s hospital of YunNan Province by General Surgery consultant with more than 10 years of experience. The patient underwent general anesthesia and intraoperatively, significant abdominal adhesion was seen which was resulted from last surgery. After separating the adhesion, a massive Meckel Diverticulum was found from the ligament of Treitz to the ileocecal junction, measuring 4 cm × 25 cm (Fig. 1). Small intestine was obviously narrow in the root of the diverticulum. The procedure consisted in a segmental resection of the area of narrow and Meckel’s Diverticulum followed by a side-to-side anastomosis and peritoneal lavage. Histopathological examination of the specimens confirmed lower ileal multiple inflammatory adenoid polyps and Meckel Diverticulum’s diverticulitis with ectopic gastric tissue. She was given prophylactic antibiotics, analgesics, and was given instructions that aid in fast wound recovery such as a balanced diet, regular wound dressings, physical rehabilitation, and avoidance of heavy objects lifting. The patient was discharged to home on postoperative day 20 and had successful recovery with no complications nor adverse events took place. No wound complications were present. She has recovered and has no current symptoms.

3. Discussion

Meckel’s diverticulum is the embryonic remnant of the yolk duct. It is rarely found in adults and is more frequent in the male subject. Due to the rarity of cases in adults, it is still misdiagnosed preoperatively. IPs refer to the local mucosal eminence lesions formed by hyperplasia of mucosal epithelial cells and glands under chronic inflammation. And IPs are usually single and located in colon and frequently encountered in inflammatory bowel disease patients [4] and in the setting of polyposis syndromes [5]. Mutiple IPs is concluded to be a direct result of chronic inflammation of MD. However, the precise percentage of this pathology has not been reported. Furthermore, polyps are usually asymptomatic but can occasionally present with bleeding or abdominal pain [5].

In this case, we can see the ileum segment disclosed an increasing density of myriads of polyps. For diagnosis, multiple small-intestine polyps should consider the possibility of Peutz-Jeghers Syndrome, but histopathology and clinical symptoms don’t meet the diagnosis definition of Peutz-Jeghers [6]. IPs may be causally associated with a dysplastic environment and a sign of a more severe inflammatory insult. IPs especially large ones, may harbor dysplastic changes [7]. The pathogenesis of IPs in this case may involve two causes. Firstly, MD sits in 50 % of the cases between 10 cm and 100 cm from the Bauhin valve; its average dimensions are 2 cm in diameter and 5 cm in length [8]. But this MD measuring 4 cm in diameter and 25 cm in length is beneficial to remaining of food and bacteria. The long-term stimulation of these substances contribute to MD chronic inflammation. Secondly, ectopic gastric (most common), duodenal, colonic, pancreatic, Brunner’s glands, hepatobiliary tissue and endometrial mucosa may be found in MD, usually near the tip [9]. These ectopic tissues may cause inflammation by secreting digestive juices and damaging mucous membrane in the form of hemorrhage, ulceration and perforation. Usually, these complications are in emergency to be admitted in the hospital, which can often be differentiated from acute appendicitis until examinations are performed. But in this case, the patient presented chronic and atypical abdominal pain as the result of MD’s chronic diverticulitis. So MD should be considered in differential diagnosis when encountering the isolated symptom of chronic abdominal pain.

For treatment for the symptomatic MD, surgical resection remains to be the gold standard. This can be accomplished by diverticulectomy, segmental bowel resection and anastomosis and wedge resection. And the laparoscopic approach may be preferred due to its proven advantages such as faster recovery, less pain, and less mortality [10].

4. Conclusion

Meckel’s Diverticulum is rare and often asymptomatic in female, so the prognosis is generally difficult, even using enteroscopy and other plain radiology. The diagnosis is confirmed in the surgery with intestinal resection gesture. Treatment should be based on the surgeon’s judgment, clinical examination, hemodynamic status, and on the unique characteristics of each patient. The scarcity of data on MD with IPs in adults, especially adult females highlights the importance of this case, which provides reference for diagnosis in MD and IPs with chronic abdominal pain.

Availability of data and materials

The datasets generated during and/or analyzed during the current study are not publicly available because the Data were obtained from the hospital computer-based in-house system. Data are available from the corresponding author upon reasonable request.

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Ethical approval

N/A.
Written informed consent was obtained from the patient for publication of this case report and accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal on request.

Author contribution

Ruo-Lan Wang: who wrote, original drafted, edited, visualized, validated, literature reviewed the manuscript.
Zheng-Ji Song: supervision, project administration and who reviewed the manuscript.
Lin-Hai Li: the surgeon who performed the operation and reviewed the manuscript.

Research registration

N/A.

Guarantor

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Declaration of competing interest

The authors declare that they have no competing interests.

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