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## Giant Meckel's diverticulum torsion that mimics adnexal pathology

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## ABSTRACT

Meckel's diverticulum is a real diverticulum located at the antimesenteric portion of intestinal loops and including all layers of the intestinal wall. It is the most common congenital anomaly of the gastrointestinal tract, and its incidence is 1–3%. Many asymptomatic cases are diagnosed when complications occur. A 23-year-old female patient applied to gynaecology emergency clinic with pelvic pain complaint. Laparotomy was performed with the diagnosis of acute abdomen because the physical examination and imaging studies did not exclude tuboovary pathology. Giant Meckel's diverticulitis and ischemic bowel loops that had been torsion were observed. Obstruction is the most common complication and generally originates from inflammation, adhesions, intussusception and omphalo-mesenteric band. In this case, it was seen that mobilized diverticulitis can be complicated without any fibrous band or adhesion to adjacent organs. This case supports that there can be torsion of bowel in free Meckel's diverticulum. Meckel's diverticulum settled in the pelvic region can make a clinical manifestation that is difficult to distinguish from adnexal diseases. It should be kept in mind for cases that start with pelvic pain, form adnexal pathology suspicion and cause an acute abdomen.

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## 1. Introduction

Meckel's diverticulum is a real diverticulum located at the antimesenteric portion of intestinal loops and including all layers of the intestinal wall. It is the most common congenital anomaly of the gastrointestinal tract, and its incidence is 1–3% [1]. Many asymptomatic cases are diagnosed when complications occur and ileus, diverticulitis, gastrointestinal bleeding, perforation may occur. Complications are correlated with the size of diverticulum. When diverticulum is bigger than 5 cm, giant 'giant Meckel' definition is used [2]. Meckel's diverticulum is rarely seen with acute abdomen in which adnexal disease cannot be ruled out. We describe a young female patient in this different presentation.

## 2. Presentation of case

A 23-year-old female patient was admitted to obstetrics gynaecology emergency clinic with stomach ache. In her history, there was pelvic pain, nausea and loss of appetite for two days. Patient did not have previous abdominal surgery history. In examination,

there was right lower quadrant tenderness, defence and rebound. In laboratory, leucocytes were 25 thousand/mm<sup>3</sup>, haemoglobin was 12.4 gr/dl, c-reactive protein was 0.7 mg/dl and other values were normal. In the direct abdominal X-ray, there were partially dilated small intestine loops (Fig. 1). In ultrasonography, there was minimal free fluid in right over region and dilated tubal view adjacent to uterus. Computed Tomography and Magnetic Resonance were applied to the patient (Figs. 2 and 3). Adnexal torsion and tubal pathology were not clearly revealed with imaging methods. Possible gastrointestinal pathology could not be ruled out. Patient was consulted with general surgery, and the patient underwent laparotomy. In exploration, 8 cm long, 3 cm in diameter Meckel's diverticulum was detected at 60 cm distal to the ileocecal valve (Fig. 4). Diverticulum was attached to the right tubaovarian, and intestinal segment had undergone torsion. Small bowel loops were freed from the pelvic region. In about 10 cm of the proximal and distal intestinal segment, ischemic and necrotic areas with Meckel's diverticulum were observed, ileac segment with impaired circulation was resected, and end-to-end anastomosis was made. Oral feeding was started on the second day after surgery, and patient was discharged on the fourth day. Pathology report was compatible with Meckel's diverticulum. Extensive mucosal ulceration and full-thickness coagulative necrosis were detected.

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Fig. 1. Abdominal X-ray.

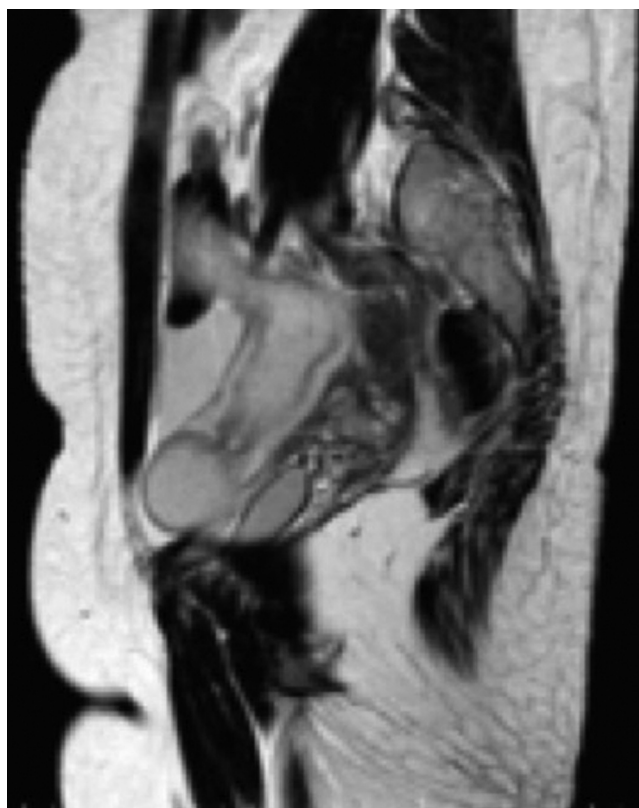


Fig. 3. Lateral abdominal magnetic resonance (MRI) image.

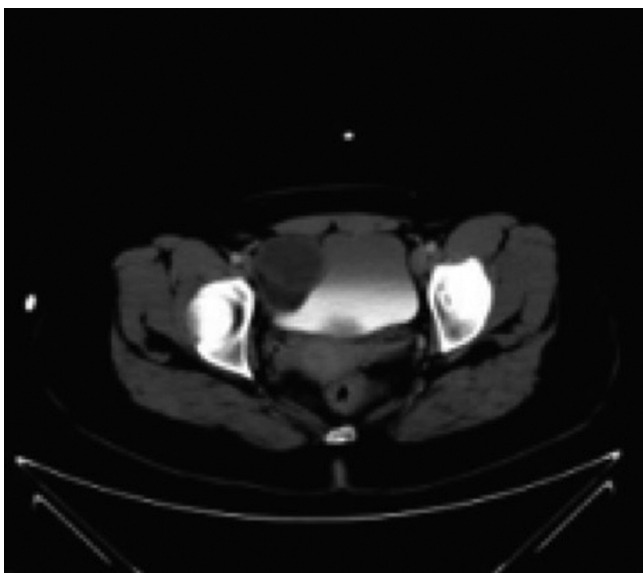


Fig. 2. Pelvic computed tomography (CT) image.

### 3. Discussion

Meckel's diverticulum is the most common congenital anomaly of the gastrointestinal tract, and it is seen at a rate of 1–3%. It is generally asymptomatic. It is a real diverticulum, and 90% of them can be found 90-cm distal ileum segment of the ileocecal valve. It can be seen with equal frequency in both sexes. But in male patients, it tends to be more complicated. In individuals with Meckel's diverticulum, risk of complications such as obstruction, diverticulitis, gastrointestinal bleeding and perforation in whole life-period is 6.4% [3]. It was shown that the size of diverticulum is compatible with the ratio of complication [4]. Obstruction is the most common complication and generally originates from inflammation,



Fig. 4. Necrotic Meckel's diverticulum and small intestine segment.

adhesion, intussusceptions and omphalo-mesenteric band. It was shown that mobilized diverticulum can be complicated without any fibrous band or adhesion to adjacent organs [5]. On the other hand, in our case, Meckel's diverticulum is settled in right tubo-ovarian field and made torsion in proximal and distal segments of ileum at diverticulum axis and formed sub-ileus. Torsion occurred in ileal segment, causing vascular obstruction and ischemia. In the literature, there are many cases such as axial torsion of diverticulum, entanglement of the intestines around a fibrous band. But in our case, a fibrous band or adhesion that can explain ileum torsion was not detected. This case supports that there can be torsion of bowel in free Meckel's diverticulum. Meckel's diverticulum complications may generate similar symptoms as many other gastrointestinal originated pathologies. At the beginning, gynaecological complaints may occur in a more dominant manner by causing severe pelvic pain. Such clinical entities in which adnexal pathology cannot be excluded are rare. As in our case, giant Meckel might include intestinal loops and mimic an adnexal disease. Meckel's diverticulum might create a clinical entity that is difficult to diagnose despite clinical and radiographic imaging. They are generally diagnosed after laparotomy, so clinical suspicion is very important.

#### 4. Conclusion

Meckel's diverticulum should be kept in mind as a differentiated diagnosis in cases that start with pelvic pain, form adnexal pathology suspicion and cause an acute abdomen.

#### Conflict of interest

Authors declare that there is no conflict of interest.

#### Funding

There is no source of support.

#### Ethical approval

There was no ethics approval required for this case report.

#### Consent

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 requests.

#### Author contribution

Serdar Kirmizi: Literature review, preparation of manuscript.  
Demet Aydogan Kirmizi: Reviewed paper.  
Reyhan Karagul: Data collection.  
Kerem Tolan: Reviewed and revised the paper.

#### Guarantor

None.

#### References

- [1] J.B. Peoples, E.J. Lichtenberger, M.M. Dunn, Incidental Meckel's diverticulectomy in adults, *Surgery* 118 (1995) 649–652.
- [2] C. Limas, K. Seretis, C. Soultanidis, S. Anagnostoulis, Axial torsion and gangrene of a giant Meckel's diverticulum, *J. Gastrointest. Liver Dis.* 15 (2006) 67–68.
- [3] W.C. Mackey, P. Dineen, A fifty-year experience with Meckel's diverticulum, *Surg. Gynecol. Obstet.* 156 (1983) 56–64.
- [4] K.E. Bani-Hani, N.J. Shatnawi, Meckel's diverticulum: comparison of incidental and symptomatic cases, *World J. Surg.* 28 (2004) 917–920.
- [5] E.C. Weinstein, J.C. Cain, W.H. Remine, Meckel's diverticulum: 55 years of clinical and surgical experience, *JAMA* 182 (1962) 251–253.

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