

Meckel diverticulitis

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Section: Abdominal imaging

Area of Interest: Abdomen

Procedure: Imaging sequences

Procedure: Surgery

Imaging Technique: CT

Imaging Technique: Percutaneous

Special Focus: Acute Case Type: Clinical Cases

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Patient: 23 years, male

Clinical History:

23-year-old male presented to ER with severe on and off suprapubic abdominal pain associated with nausea and non-bilious vomiting.

The patient had a normal bowel movements with no urinary complaints.

No past surgical history.

The patient was referred for contrast-enhanced CT abdomen and pelvis.

Imaging Findings:

CT abdomen/pelvis with IV contrast was performed and the caecum was seen down in the pelvis. In the left lower quadrant of the abdomen, near to the midline a large rounded fluid collection with air and fluid level and faecal matter within it was seen. Minimal surrounding fat stranding was detected. No ascites. No free air.

Appendix was not clearly visualized.

No small or large bowel dilatation.

No significant lymphadenopathy could be appreciated.

Impression:

Contrast-enhanced CT features were highly suggestive of inflamed mucocoele of the appendix versus ruptured appendix with contained abscess formation, also possibility of inflamed Meckel diverticulum was considered.

Diagnostic laparoscopy was done and excision of strangulated Meckel Diverticulitis was performed.

Histopathology:

Small intestine Meckel diverticulum with haemorrhagic infarction and acute serositis; no malignancy was seen.

Discussion:

Meckel diverticulum is a common congenital anomaly in the gastrointestinal system. It is seen in 2% of the population with male predilection. It is a true diverticulum that results from incomplete atrophy of the omphalomesenteric duct and occurs in the antimesenteric boarder of the distal ileum. [1]

Meckel diverticulitis is an uncommon cause of acute abdomen resulting from an inflammation of Meckel diverticulum. It is seen in 20% of patients. [2]

Meckel diverticulitis has a similar pathogenesis as acute appendicitis; it may be caused by bacterial infection and

complicated in some cases to gangrene. [3]

2% of Meckel diverticulum cases have gastric mucosa which can be picked up by pertechnetate nuclear study; however, in acute cases this study usually is not done. [3]

On CT Meckel diverticulitis presented as tubular or rounded collection with air-fluid level in abdomen or pelvis communicating with small intestine surrounded by mesenteric inflammatory changes. Enterolith has been reported in rare cases. [4]

Most of the patients who presented with Meckel diverticulitis are suspected to have acute appendicitis clinically which can be differentiated radiologically by visualizing the normal appendix.

Most of the reported cases were located near the midline and not in the right lower quadrant. Ventricular attachment to the umbilicus may be present which may mimic infected urachal duct cyst; however, urachal duct cyst is always related to the dome of the urinary bladder. [5]

Conclusion:

In adult or paediatric patients presenting with acute lower abdominal pain, Meckel diverticulitis should be considered as part of the differential diagnosis. If fatty strands are noted on CT in the lower abdomen, particularly in mid-abdomen with normal appendix, the likelihood of Meckel diverticulitis increases. CT with oral contrast will help in identifying the diverticulum.

Differential Diagnosis List: Meckel diverticulitis, Infected urachal duct cyst, Ruptured appendix with contained abscess formation, Inflamed mucocoele of the appendix

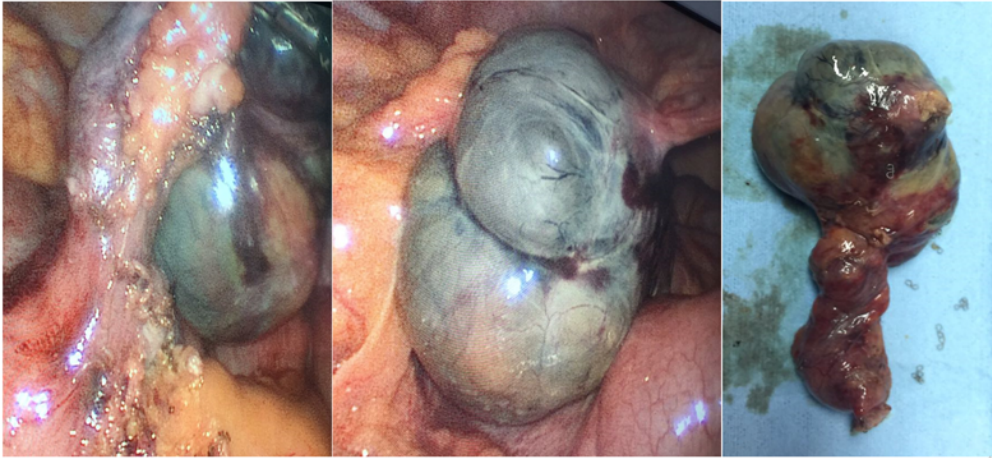
Final Diagnosis: Meckel diverticulitis

References:

- Moore TC. (1996) Omphalomesenteric duct malformations. Semin Pediatr Surg 5:116-123. (PMID: [9138710](#))
- Bennett GL, Birnbaum BA, Balthazar EJ. (2004) CT of Meckel's diverticulitis in 11 patients. AJR Am J Roentgenol 182 (3): 625-9 (PMID: [14975960](#))
- Dr Praveen Jha et al (2017) Meckel diverticulitis. Radiopedia
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- Nigogosyan M, Dolinskas C (1990) CT demonstration of inflamed Meckel's diverticulum. J Comput Assist Tomogr 14:140 –142 (PMID: [2298981](#))

Figure 1

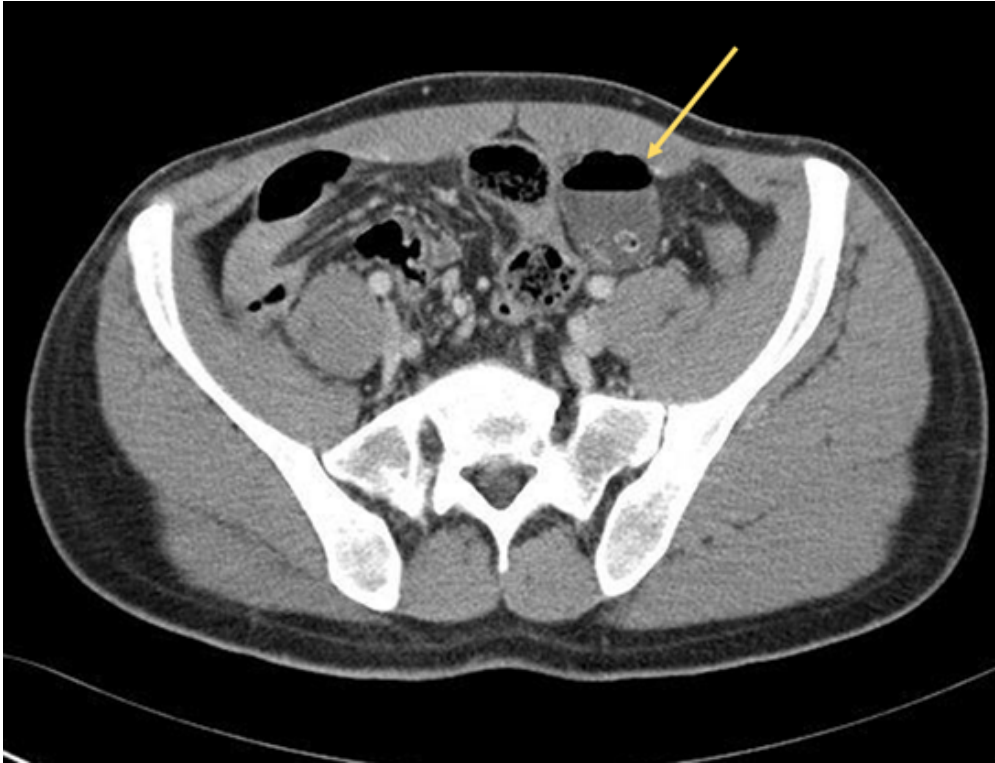
a



Description: Diagnostic laparoscopy was done and excision of strangulated Meckel's diverticulitis was performed. **Origin:** Sheikh Khalifa medical city. Abu Dhabi, UAE.

Figure 2

a



Description: Axial view shows a large rounded fluid collection with air and fluid level. Minimal perilesional fat stranding was detected. No perilesional free air foci could be detected. **Origin:** Sheikh Khalifa Medical City. Abu Dhabi, UAE.

b



Description: Sagittal view shows a large rounded fluid collection with air and fluid level.

Minimal perilesional fat stranding was detected.

No perilesional free air foci could be detected. **Origin:** Sheikh Khalifa Medical City. Abu Dhabi, UAE.