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Post-traumatic Mesenteric Pseudocyst Due to Bicycle Handlebar Injury

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Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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Case Study

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ABSTRACT

Mesenteric Pseudocyst is a cystic mass in the abdomen. The aetiology is either due to trauma or infection. True mesenteric cysts are lined by epithelium while pseudocysts are not. Mesenteric pseudocysts are very rare. Only 29 case reports were retrieved via the Medline/PubMed search engine. Incidental diagnosis of mesenteric Pseudocyst is during abdominal imaging or laparotomy.
We report an extremely rare case of post-traumatic mesenteric Pseudocyst in a 10-year-old girl. There was a history of falling from the bicycle and causing a handlebar blunt abdominal injury to the abdomen. After 5-6 months, she was presented with acute intestinal obstruction, due to volvulus of small bowel. The patient was managed by open explorative laparotomy, and we did total segmental resection of the ileum along with post-traumatic mesenteric Pseudocyst and also ileo-ileal anastomosis.

Keywords: Blunt abdominal trauma; bicycle handlebar injury; traumatic mesenteric cyst.

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1. INTRODUCTION

Mesenteric pseudocysts are rare abdominal tumours that can arise from mesenteric tissue. The term mesenteric Pseudocyst was first used by Ros et al in 1987. They are typically benign, fluid-filled cysts that can cause abdominal pain, vomiting, and very rarely acute intestinal obstruction. The diagnosis of Mesenteric Pseudocyst can be challenging and usually diagnosed during abdominal imaging or laparotomy. The Pseudocyst by definition lacks of the true epithelial wall [1,2,3,4].

Mesenteric Pseudocyst are rare intra-abdominal lesions. Trauma and infection have been the possible cause, by means of blunt abdominal trauma, followed by Mesenteric haematoma getting absorbed and cystic degeneration and formation of a cystic mass in the mesentery. Surgical removal has been achieved by means of open surgery, laparoscopy, and robotic surgery. Total surgical excision of a traumatic mesenteric Pseudocyst along with a segmental ileal loop and ileo-ileal anastomosis is the gold standard treatment [1,2,5].

The aim of this case study was to report a rare case of post traumatic Mesenteric Pseudocyst following blunt abdominal trauma due to bicycle handlebar injury in a 10 years old girl.

2. CASE REPORTS

A 10 years girl was admitted to our centre in 1997, with complaints of severe abdominal, pain distension of the abdomen, and vomiting for 2 days' duration. After detailed counselling with parents, they have narrated the history of falling from the bicycle 5-6 months back. While going to school, the handlebar of the bicycle caused the blunt abdominal injury. After 5-6 months she presented with acute intestinal obstruction. On ultrasonography, the abdomen showed a cystic mass in the ileal mesentery with dilated bowel loops. A plain abdominal x-ray showed multiple air-fluid levels suggestive of acute intestinal obstruction. All laboratory investigation was normal. Open explorative laparotomy was performed, after exploration, she had a cystic Multilocular mass in the small bowel mesentery of size 15x12x10 centimetres and weight 2.5 kilograms.

The multilocular haemorrhagic cystic mass was causing torsion of the small bowel and volvulus followed by acute intestinal obstruction. This big Multilocular haemorrhagic cyst developed due to bicycle handlebar trauma to the mesentery and formed a big haematoma in between two peritoneal leaves of small bowel mesentery, due to laceration of mesenteric small vessels forming a post-traumatic mesenteric Pseudocyst. A big-size multilocular Mesenteric Pseudocyst created a torsion of the small bowel followed by acute intestinal obstruction. Such type of case we have noticed for the first time in my surgical carrier. We performed total segmental excision of the ileal segment along with Mesenteric Pseudocyst and ileo-ileal anastomosis.

Postoperative recovery was uneventful and the patient was discharged on the 8th postoperative day. The Pathological report revealed a Mesenteric Cyst-wall containing chronic inflammation, a large amount of haemorrhagic fluid with fibrous tissue, and an absence of epithelium, which was suggestive of a Pseudocyst (Figs. 1,2,3,4).

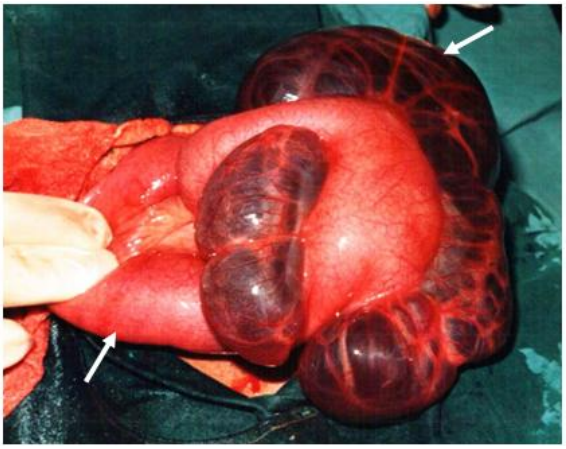

Fig. 1. Intraoperative photographs Showing volvulus of small bowel due to post traumatic Pseudocyst

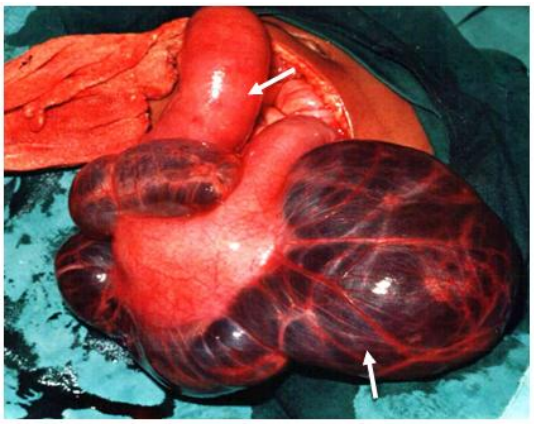

Fig. 2. Intraoperative photographs Showing volvulus of small bowel and acute intestinal obstruction

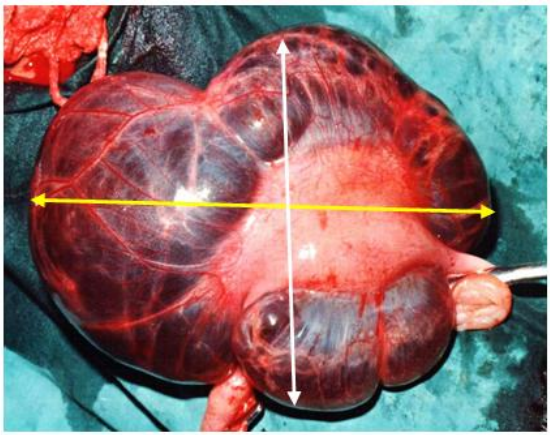

Fig. 3. Intraoperative photographs Showing Giant Multiloculated Post Traumatic Pseudocyst of size 15x12 cm

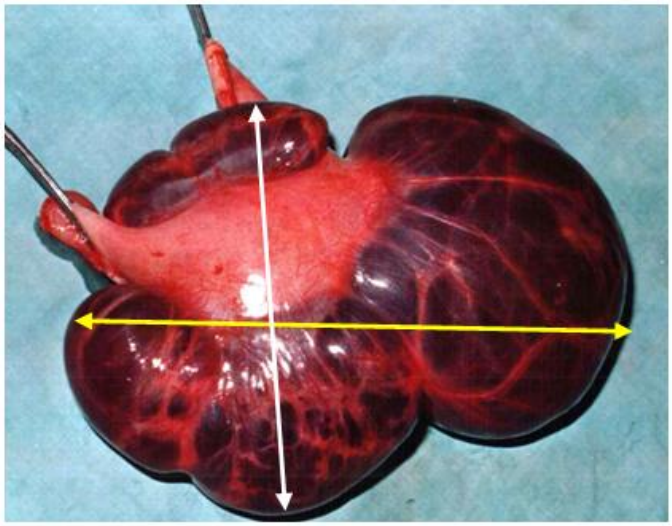

Fig. 4. Intraoperative photographs Showing total Excision of post traumatic Pseudocyst weight -2.5 kg

3. DISCUSSION

A mesenteric cyst is a rare type of abdominal cyst. These cysts can be classified as true cysts or pseudocysts based on their histological features. True cysts are lined by epithelium while Pseudocysts are not. A cyst size of more than 10 cm is called a giant Pseudocyst. Histopathological classification by De-Perrot and colleagues proposed into six groups as follows [1,2,5,4].

1. Cyst of lymphatic origin
2. Cyst of mesothelial origin
3. Cysts of enteric origin
4. Cysts of urogenital origin
5. Mature cystic Teratoma
6. Pseudocyst (Traumatic/Infective)

Mesenteric pseudocysts arise from trauma and inflammation. Mesenteric pseudocysts are a relatively rare condition. The diagnosis of Mesenteric Pseudocyst is difficult as they are asymptomatic and reported incidentally and imaging studies. Most Mesenteric Pseudocyst are asymptomatic and may be discovered incidentally during diagnostic imaging or surgery. Abdominal symptoms caused by cysts such as abdominal pain 55-82%, palpable abdominal lumps 44-61%, and abdominal distension 17-61% may be observed. Very rarely trauma, infection, perforation volvulus or bowel obstruction may have developed and present as an acute abdomen. The symptoms are reported incidentally in imaging studies. The symptoms are abdominal pain, vomiting, and bowel obstruction. Complete surgical excision is the gold standard treatment for Pseudocyst however laparoscopic excision or robotic excision is the preferred surgical approach [1,2,3,4,6-10].

In our case, for the first time reported that there was a history of bicycle handlebar injury due to a fall, after 5-6 months of blunt abdominal trauma in a 10 years girl who developed the Mesenteric Pseudocyst. She developed a well-defined hematoma in the mesentery of the small bowel, due to a laceration of the mesenteric vessel forming a mesenteric hematoma, which gets absorbed and degenerated forming a cystic haemorrhagic fluid mass. The size of the Pseudocyst was 15x12x10 centimetres and weight 2.5 kilograms in the mesentery and the cyst was containing bloody or haemorrhage fluid. Their large size and weight can result in axial torsion and volvulus causing acute intestinal obstruction.

We performed total surgical excision of the Mesenteric Pseudocyst with segmental bowel resection and ileo-ileal anastomosis.

4. CONCLUSION

The definitive treatment of Post Traumatic Mesenteric Pseudocyst is open explorative laparotomy, total surgical excision of the Mesenteric Pseudocyst with segmental bowel resection and anastomosis. The prognosis is good if the cyst is completely removed.

ETHICAL APPROVAL

As per international standard or university standard written ethical approval has been collected and preserved by the author(s).

CONSENT

As per international standard or university standard, patient(s) written consent has been collected and preserved by the author(s).

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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