

## Case study

# Post-traumatic Mesenteric Pseudocyst Due to Bicycle Handlebar Injury

### **Abstract**

Mesenteric Pseudocyst is a cystic mass in the abdomen. They are caused either due to trauma or infection. True mesenteric cysts are lined by epithelium while Pseudocyst are not. Mesenteric Pseudocyst 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. The term mesenteric Pseudocyst was first used by Ros et-al in 1987.

We report an extremely rare case of post traumatic mesenteric Pseudocyst in a 10-year-old girl. There was history of fall from the bicycle and causing handlebar blunt abdominal injury to the abdomen. After 5-6 months, she was presented with acute intestinal obstruction, due to volvulus of small bowel. Patient was managed by open explorative laparotomy, and we did total segmental resection of the ileum along with post traumatic mesenteric Pseudocyst and ileo-ileal anastomosis.

### **Key words**

Blunt abdominal trauma, bicycle handlebar injury, Traumatic mesenteric cyst

### **Introduction**

Mesenteric Pseudocyst are rare abdominal tumours that can arise from mesenteric tissue. They are typically benign, fluid filled cyst 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 is lacks of true epithelial wall. [1,2,4,8]

Mesenteric Pseudocyst are rare intra-abdominal lesions. Trauma and infection have been possible cause, by means of blunt abdominal trauma, followed by Mesenteric haematoma gets 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 segmental ileal loop and ileo-ileal anastomosis is the gold standard treatment. [1,2,3]

The aim of this 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.

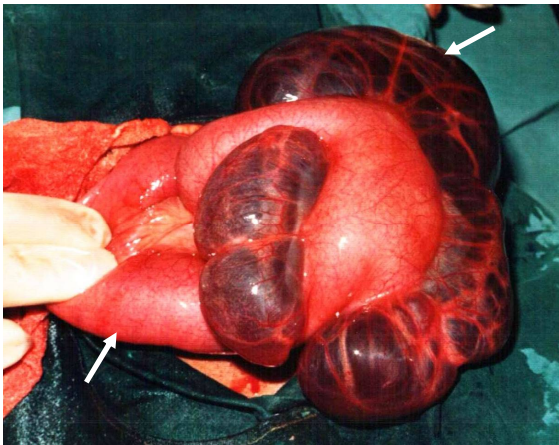
### **Case Reports**

A 10 years' girl was admitted to our centre in 1997, with complains of severe abdominal, pain distension of abdomen and vomiting of 2 days' duration. After detailed counselling with parents, they have narrated the history of fall from the bicycle 5-6 months back. While going to school, the handlebar of the bicycle causing blunt abdominal injury. After 5-6 months she presented with acute intestinal obstruction. On ultrasonography abdomen showed a cystic mass in ileal mesentery with dilated bowel loops. Plain abdominal x-ray showed multiple air-fluid levels suggestive of acute intestinal obstruction. Her all laboratory investigation was normal. Open explorative laparotomy performed, after exploration she had ac cystic Multilocular mass in the small bowel mesentery of size 15x12x10cm and weight 2.5 kg.

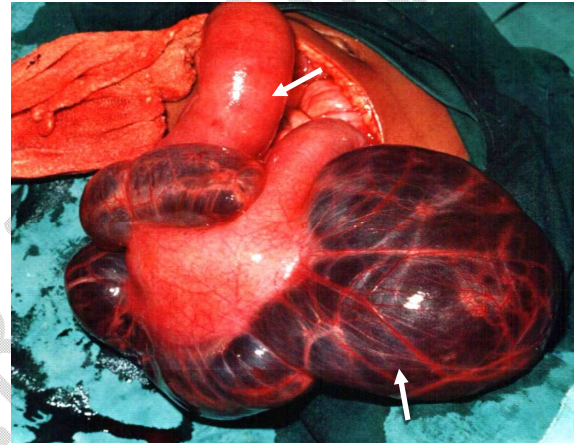
Multilocular haemorrhagic cystic mass was causing torsion of the small bowel and volvulus followed by acute intestinal obstruction. This big Multilocular haemorrhagic cyst developed due to bicycle handlebar trauma to mesentery and formed a big haematoma in between two peritoneal leaves of small bowel mesentery, due to laceration of mesenteric small vessels forming a post traumatic mesenteric Pseudocyst. A big size Multilocular Mesenteric Pseudocyst created a torsion of 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 ileal segment along with Mesenteric Pseudocyst and ileo-ileal anastomosis.

Postoperative recovery was uneventful and patient was discharged on 8<sup>th</sup> postoperative day. The Pathological report revealed Mesenteric Cyst-wall containing chronic inflammation, large amount of haemorrhagic fluid with fibrous tissue and absence of epithelium, which suggestive of Pseudocyst.

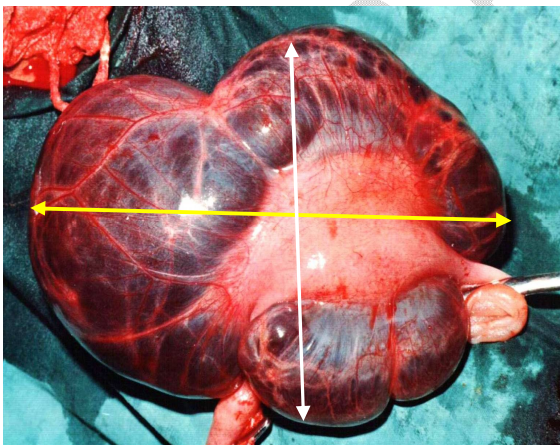
(Figure 1,2,3,4)



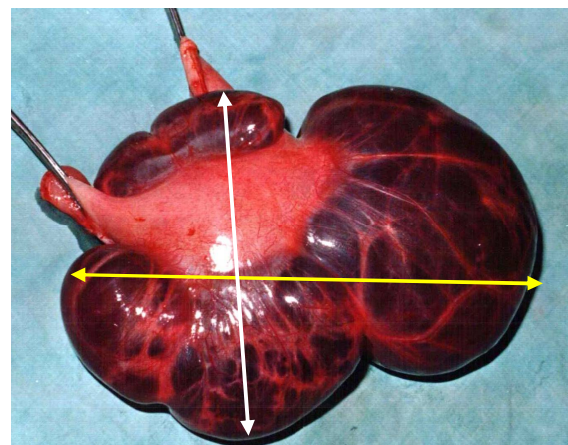
**Fig-1 Intraoperative photographs Showing volvulus of small bowel due to post traumatic Pseudocyst**



**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**

## Discussion

A mesenteric cyst is a rare type of abdominal cyst. These cysts can be classified as true cysts or Pseudocyst based on their histological features. True cysts are lined by epithelium while Pseudocyst

are not. The cyst size more than 10 cm is called giant Pseudocyst. Histopathological classification by De-Perrot and colleagues proposed in to six groups as follows. [1,2,3,8]

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 Pseudocyst are arise from trauma and inflammation. Mesenteric Pseudocyst are relatively rare condition. The diagnosis of Mesenteric Pseudocyst in challenging, as they are asymptomatic and reported incidentally and imaging study. Most of the Mesenteric Pseudocyst are asymptomatic and may be discovered incidentally during diagnosis 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 on imaging study. The symptoms are abdominal pain, vomiting and bowel obstruction. Complete surgical excision in the gold standard treatment for Pseudocyst however laparoscopic excision or robotic excision is the preferred surgical approach. [1,2,4,8]

In our cases, for the first time reported that, there was as history of bicycle handlebar injury due to fall, after 5-6 month of blunt abdominal trauma in a 10 years' girl developed the Mesenteric Pseudocyst. She developed a well-defined hematoma in the mesentery of small bowel, due to laceration of mesenteric vessel forming a mesenteric hematoma, which get absorbed and degenerated forming a cystic haemorrhagic fluid mass. Size of Pseudocyst was 15x12x10 cm and weight 2.5 kg in the mesentery and cyst was containing bloody or haemorrhage fluid. Their large size and weight can result in to 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.

## 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.

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