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Spontaneous Sero-Muscular Colonic Lacerations as a Cause of Acute Abdomen: Case Report

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Abstract

Introduction: Acute abdomen is common surgical problem that usually needs surgical intervention. Wide range of etiologies that lead to acute abdomen. Bowel injury or perforation is one of these leading causes, that usually because of trauma (blunt, penetrating and iatrogenic) or perforation of diseased bowel.

Case presentation: A 27 years old male patient with no previous medical or surgical history, presented to emergency complaining of severe abdominal pain for one day. Examination revealed severe tenderness and rigidity all over the abdomen. CT abdomen revealed large amount of free fluid in abdomen. Diagnostic laparoscopy done showed large amount of hemo peritoneum with big hematoma over sigmoid colon associated with multiple serosal lacerations of sigmoid colon. Suction of blood done with drain insertion in the pelvis. Post-operative period was smooth patient discharged home 2 days after surgery without complain.

Discussion: Colonic injury that causes acute abdomen is usually complete injury that leads to fecal peritonitis. Here we presented a novel scenario of spontaneous serosal lacerations in healthy colon that led to massive hemo peritoneum and acute abdomen. potential etiologies are persistent constipation, low fiber dietary habits that cause increase of intra colonic pressure and presence of connective tissue disorders.

Conclusion: Spontaneous colonic serosal lacerations should be added to the differential diagnosis of acute abdomen. Laparoscopic exploration is of great value in acute abdomen.

Keywords: Trauma • Acute abdomen • Sigmoid colon • Serosal lacerations

Introduction

Acute abdomen can be defined as any acute abdominal condition that requires urgent intervention. However other extra abdominal clinical conditions like inferior wall myocardial infarction and basal pneumonia can cause symptoms and signs that mimic acute abdomen. Bowel injury is one of the commonest causes of acute abdomen, that's usually because of trauma (blunt, penetrating or iatrogenic), but spontaneous bowel injury without evidence of trauma, previous abdominal surgeries or gastrointestinal disease is scarce. Spontaneous sero-muscular lacerations in non-diseased colon is a new cause of acute abdomen [1].

Proper management of bowel injury is completely depending on the extent of injury, five main degrees of bowel injuries are present: 1) Serosal lacerations; 2) Intramural hematoma; 3) Mesenteric vessels injury; 4) Trans-mural perforation and 5) Transection of bowel. In this case we reported that spontaneous sero-muscular colonic lacerations may be clinically presented almost the same scenario as traumatic bowel perforation [2].

Case Presentation

27 years old Nepali patient presented to the emergency department complaining of sever generalized abdominal pain just one day back, started by an acute onset and progressive course, associated with nausea, vomiting, constipation and one attack of bleeding per rectum. No history of abdominal or anal trauma. Patient has no past medical or surgical history. Upon examination patient was looking in pain and irritable, he was vitally stable and a febrile. Abdominal examination revealed sever tenderness and rigidity all over the abdomen, no distension and audible bowel sounds [3].

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Digital rectal examination was unremarkable without any evidence of bleeding. Primary laboratory investigations done were normal except for significant leukocytosis (WBCs 19,000). Hb level was 13.5 gm. X- ray chest was normal with no free air under diaphragm. Patient was admitted to surgical ward as a case of acute abdomen, fluid therapy started with empirical antibiotics (3rd generations cephalosporins and metronidazol) [4].

CT abdomen with I.V and oral contrast was done and showed marked amount of free intra peritoneal fluid collection in hepato renal, lieno renal pouch and in pelvis with no evidence of pneumo peritoneum or contrast leak from the bowel (Figure 1) [5].

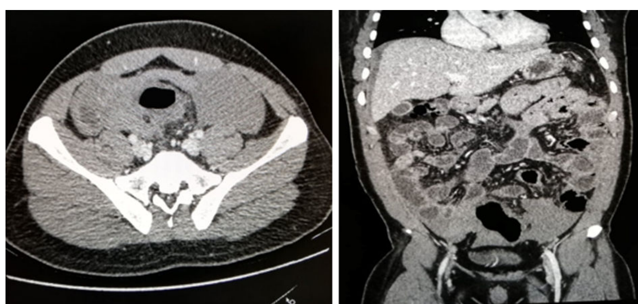

Figure 1. CT abdomen with I.V and oral contrast.

Diagnostic laparoscopy of was done, upon induction of pneumo peritoneum *via* open Hasson technique 30 degree scope was inserted through umbilical 11 mm port and two other ports (5 mm and 11 mm) in right and left hypochondrium, there was large amount in blood inside the peritoneal cavity everywhere (hepato renal, lieno renal pouch, pelvis and in between the small bowel with big hematoma seen over the sigmoid colon [6].

Vigorous suction of blood was done and proper laparoscopic exploration of whole abdomen started by liver, spleen, whole small bowel and whole colon. The only operative finding was big hematoma over the distal part of sigmoid colon and after suction of it there were multiple transverse sero-muscular lacerations of sigmoid colon (Figure 2) [7].

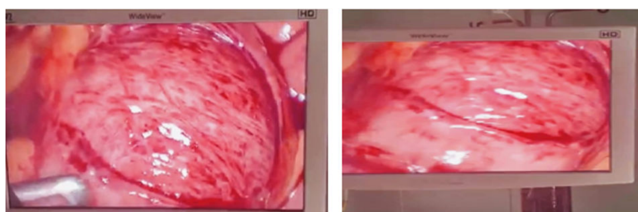

Figure 2. Multiple transverse sero-muscular lacerations of sigmoid colon.

Testing of the sigmoid colon for any perforation was done by methylene blue stained saline injected *via* rectal tube inserted through anal canal till complete distension of sigmoid and there was no evidence of any perforation. Intra-abdominal drain was inserted in the pelvis and then closure of ports and skin [8].

In the second post-operative day the patient was vitally stable in the ward with marked improvement of abdominal pain, the abdomen was soft and lax with mild tenderness over the sites of ports. Drain out was 50 ml bloody discharge. Blood works were sent for him, (Hg) level was 12.2 gm and (WBCs) count was 8.900 with normal liver and kidney functions. Feeding started for the patient then he was discharged home on the third post-operative day. Patient was seen in out-patient clinic after one week with no complain, skin clips were removed [9].

Results and Discussion

To have an acute abdomen due to bowel perforation either post traumatic or on top of diseased bowel this is the normal sequel but to have a patient with spontaneous serosal lacerations of previously healthy bowel that led to hemo peritoneum and acute abdomen this is scarce.

Few cases of spontaneous sero-muscular colonic lacerations were reported in literature and were diagnosed preoperatively as case of peritonitis due to acute appendicitis and explored, this phenomena was found. Another case was diagnosed as case of pelvic mass and laparotomy was performed and they were surprised by the same finding of spontaneous sero-muscular sigmoid lacerations [10].

Although many etiologies may be considered about spontaneous sero muscular lacerations of non-diseased colon, the actual cause is still unknown. It may be accepted to have such condition in old age patient with weak colonic structure due to immobility but presentation of such case in young healthy patient should change our way of thinking about it, so many contributing factors may be involved.

Long standing sustained constipation with bad dietary habits (low fiber high caloric fatty meals) may play an important role in increasing of intra-luminal colonic pressure that may lead to serosal lacerations. Some medical conditions like diabetes mellitus is associated with chronic ileus for years which may not diagnosed and predispose the patient to such injury.

Presence of a genetic element that may lead to weakness of the bowel wall or presence of connective tissue disorder affecting bowel should be considered seriously because there were many reported cases of spontaneous colonic perforations in patient with Ehlers-Danlos Syndrome (EDS) which is genetically determined connective tissue disease. However our patient has no any previous medical condition. Neglected trivial abdominal trauma or denial of any anal and rectal trauma for social issues may be hidden causes of such clinical condition.

Conclusion

Al though complete bowel perforation that leads to peritonitis is very common etiology of acute abdomen, partial colonic wall injuries like sero-muscular lacerations may be presented as the same clinical scenario. Spontaneous sero-muscular colonic laceration is rare condition but should be

added to differential diagnosis of acute abdomen. Long standing sustained constipation is the key hole of spontaneous sero-muscular colonic lacerations. Diagnostic laparoscopy instead of laparotomy is very helpful in management of acute abdomen especially in such condition.

Conflict of Interest

None of the contributing authors have any conflict of interest, including specific financial interests or relationships and affiliations relevant to the subject matter or materials discussed in this manuscript.

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