International Journal of Science and Research (IJSR)
ISSN: 2319-7064
SJIF (2022): 7.942

Ileo-Sigmoid Knotting: A Rare Case Report of Intestinal Obstruction

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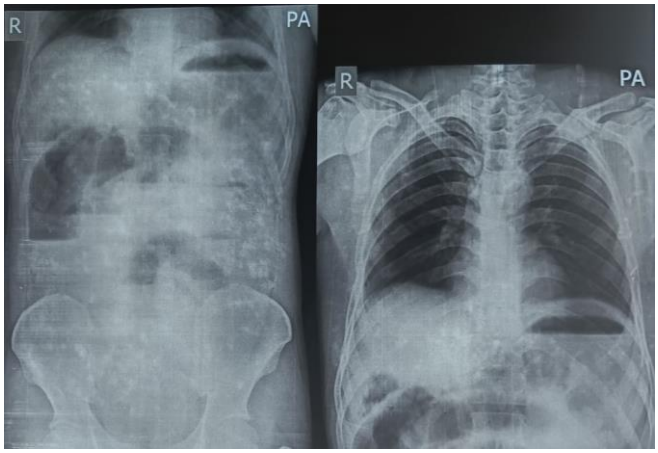
Abstract: ***Ileo - sigmoid knotting is considered a rare variant of sigmoid volvulus, also known as compound volvulus or double volvulus, which is a rare surgical emergency causing intestinal obstruction. Principally, it is a closed double loop intestinal obstruction that involves the sigmoid and ileum. The mortality rate is very high in this rare but potentially fatal condition which progresses rapidly and frequently to cause gangrene of both the ileum and sigmoid colon, which triggers general peritonitis and septic shock. The aim of reporting this case is to increase understanding of this condition to promote earlier diagnosis.***

Keywords: Ileo Sigmoid Knotting, Intestinal Obstruction

1. Introduction

In this condition of ileo - sigmoid knotting, the long pelvic mesocolon allows the ileum to twist around the sigmoid colon, resulting in a knot. The condition is serious, generally progressing rapidly to gangrene of either or both segments of ileum & sigmoid colon. The patient presents with acute intestinal obstruction, but distension is comparatively mild. The pre - operative diagnosis is often difficult due to its rarity, uncommon presentation, and non - specific radiological findings. The primary aim of surgery is to decompress, resect any gangrenous segment, and restore bowel continuity. The mortality rate of ileo - sigmoid knot may reach around 48%[1].

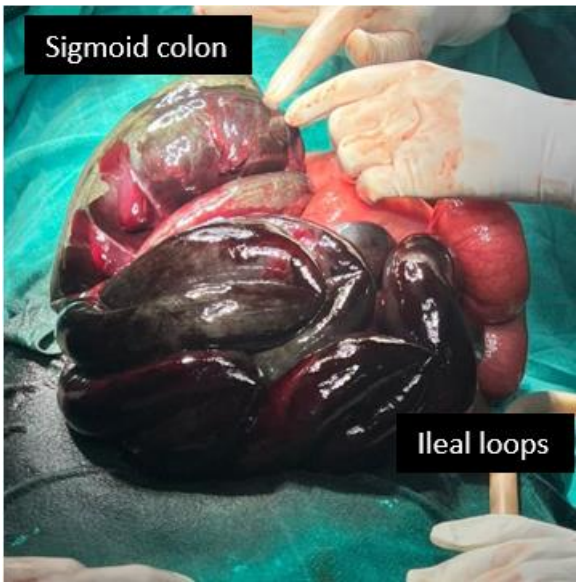
Hemoglobin	10.8 g/dL
TLC	17.17*10^9/L
Platelet	2.82 *10^9/L
Hematocrit	30.30%
Blood urea	56mg/dL
Serum creatinine	1.9mg/dL
Sr Na^+	139 mEq/L
Sr K^+	5.2 mEq/L

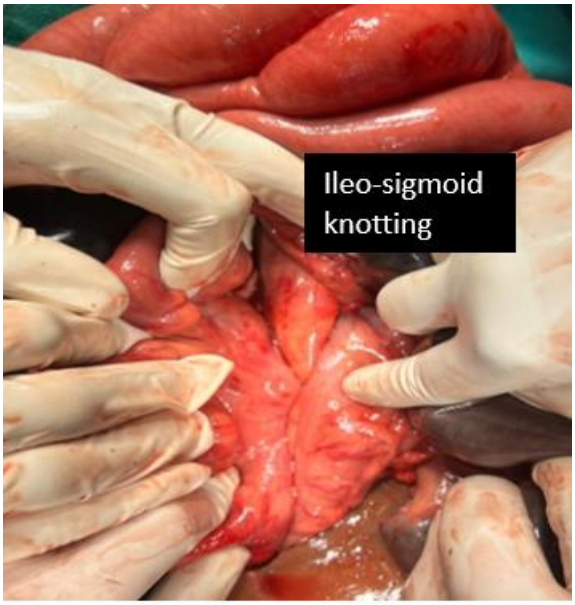


2. Case Report

We are hereby reporting a case of a 28 - year gentleman who presented to the emergency department on 05.07.23, with complain of severe abdominal pain since the same day with a single episode of vomiting. On abdominal examination, moderate distension was present along with generalized tenderness. Signs of peritonism was also present & bowel sounds were audible.

Radiological examination in supine & erect x - rays revealed large bowel dilatation with 4 - 5 air fluid levels. The patient was immediately





taken up for exploratory laparotomy. In intraoperative finding, approximately 500 ml of gangrenous fluid was found along with ileo - sigmoid knot was found with gangrenous ileum and sigmoid colon. A gangrenous loop of ileum encircling the base of gangrenous sigmoid volvulus was found. Unknotting of ileo - sigmoid knot was successfully achieved by decompression. Redundant gangrenous sigmoid colon and gangrenous distal segment of ileum {50cm) approximately 20 cm proximal to ileo - cecal junction was resected. Colo colic anastomosis was done along with ileo - ileal anastomosis.

Patient was allowed enteral nutrition on post operative day 5th. The patient had an uneventful recovery and was discharged within 10 days of post operative period.

3. Discussion

Compound volvulus is a rare variant of sigmoid volvulus, which can be more rapidly life threatening than a sigmoid volvulus. It was first reported by Parker in 1845. It is more common in Africa, Asia and Middle East than in the Western countries[2].

Compound volvulus occurs predominantly in men and has a mean age of diagnosis around 40 years[3].

The aetiology is not well understood but however, a long mesentery with a narrow base & ingestion of high bulky diet after fasting are major predisposing factors. This form of volvulus is associated with more profound & early malperfusion of the bowel. Importantly, endoscopic detorsion is futile in the setting of ileo - sigmoid knotting, and thus it is crucial to differentiate this condition from isolated sigmoid volvulus[6].

Compound volvulus is classified in two ways[7, 8]

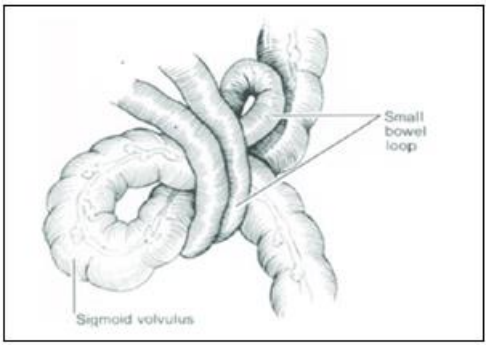
Type and Description

Type 1	Ileum around the sigmoid
Type 2	Sigmoid around the ileum
Type 3	Ileocecal around the sigmoid
Type 4	Undetermined
Type A	Clockwise
Type B	Anticlockwise

Class and Description

1	No risk factor (such as advanced age, co - morbidity), non - gangrenous bowel.
2	Risk factor, non - gangrenous bowel.
3	Shock, non - gangrenous bowel
4	Gangrene of ileum or sigmoid, no shock.
5	Gangrene of ileum or sigmoid and shock.
6	Gangrene of both ileum and sigmoid.

Newer classification which correlates with mortality
Our patient had type 1 class 4.



Schematic diagram (copied from Johnson CD 1986) [10]

Clinical presentation is commonly of sudden onset with abdomen pain as a constant symptom[4]. Other symptoms include vomiting, abdominal distension, constipation, anorexia and/or diarrhea. There can also be hematemesis and rectal bleeding[5], fever may indicate bowel ischemia or gangrene. On examination, patient appears toxic, dehydrated, febrile. The abdomen may be distended, tense, rigid, tender with signs of peritonitis. Bowel sounds may be hyper resonant, hypo resonant or absent and rectum may be empty with mucoid staining. The presenting features depend upon the duration of onset of symptom and time of presentation.

X - rays are nonspecific but may show features of intestinal obstruction. CT scan is useful in diagnosing.[7, 8].

4. Conclusion

Preoperative diagnosis requires high degree of suspicion. Prognosis depends upon timely intervention and extent of gangrene of bowel.

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