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# Sigmoid Volvulus - A Case Report

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A clinically challenging scenario, often the Radiologist plays a very major role in the diagnosis.

A middle-aged person presented in the emergency department with abdominal distension, pain and vomiting. Most of the times the specialists frequently considers the routine point to ponder the scenario and underwhelmingly never reaches to a point to clinch the outcome. Here the imaging modality retains the upper hand to tackle the situation, it is beneficial to the consultants and highly benevolent to the poor soul presented with the ailment.

It's the twist of the large bowel along it's mesentery [1,2]. Usually the presenting age of the patients are above 50. In North America and Australia, 5% of population who are being presented with intestinal obstruction are due to volvulus [3,4].

Clinical presentation has low specificity and diagnostic radiology will play a major role in clinching the diagnosis. Earlier scenario the mode of investigations include X-rays and Fluoroscopic studies, of course they had given numerous signs it would have helped to earn a diagnosis.

Later with advent of MDCT with or without contrast helped the scenario and contained in it very good limits.

**Pathophysiology**

Clinically it is a closed loop obstruction [5] and it requires three criteria to full fill the hazardous outcome. It requires a long segment freely mobile bowel loop, a redundant mesocolon and a narrow base which allowed the bowel to twist in mesenteric axial way, resulting a closed loop obstruction. Involved bowel segments are sigmoid colon, transverse colon and caecum. Previous study reports state that [6], 11-25% of all these bowel segments are mobile.

## Case Presentation

An elderly male patient presented with abdominal pain, vomiting and distension. He had comorbidities like diabetes and hypertension, no past history of surgery. His initial blood counts and other relevant investigations we're well within normal and his USG study was inconclusive due to excess bowel gas.

Patient was subjected to MDCT, and found variety of findings it would have naturally eased the pressure to the Radiologist, since a few findings are quite obvious to figure it out as a case of sigmoid volvulus (**Figures 1-3**).

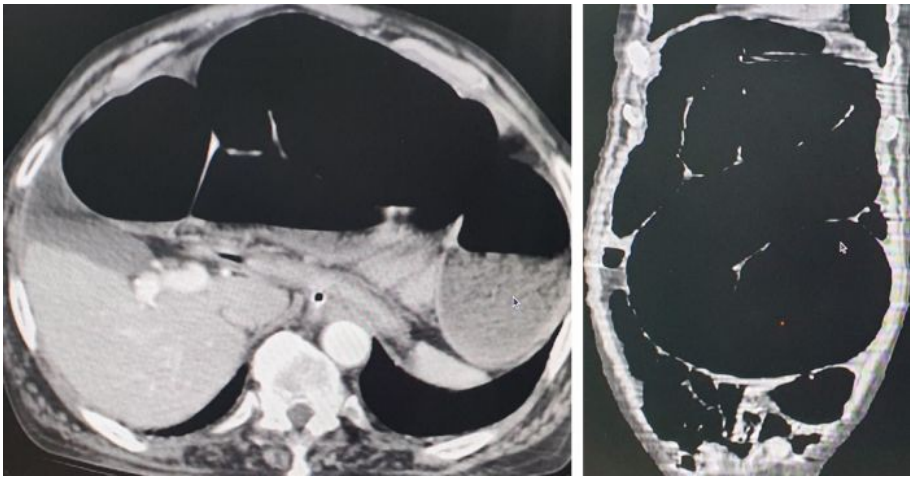

**Figure 1:** Appearance of dilated large bowel loops which lacks it's haustra, ahaustral pattern, evident in closed loop obstruction [6,7].

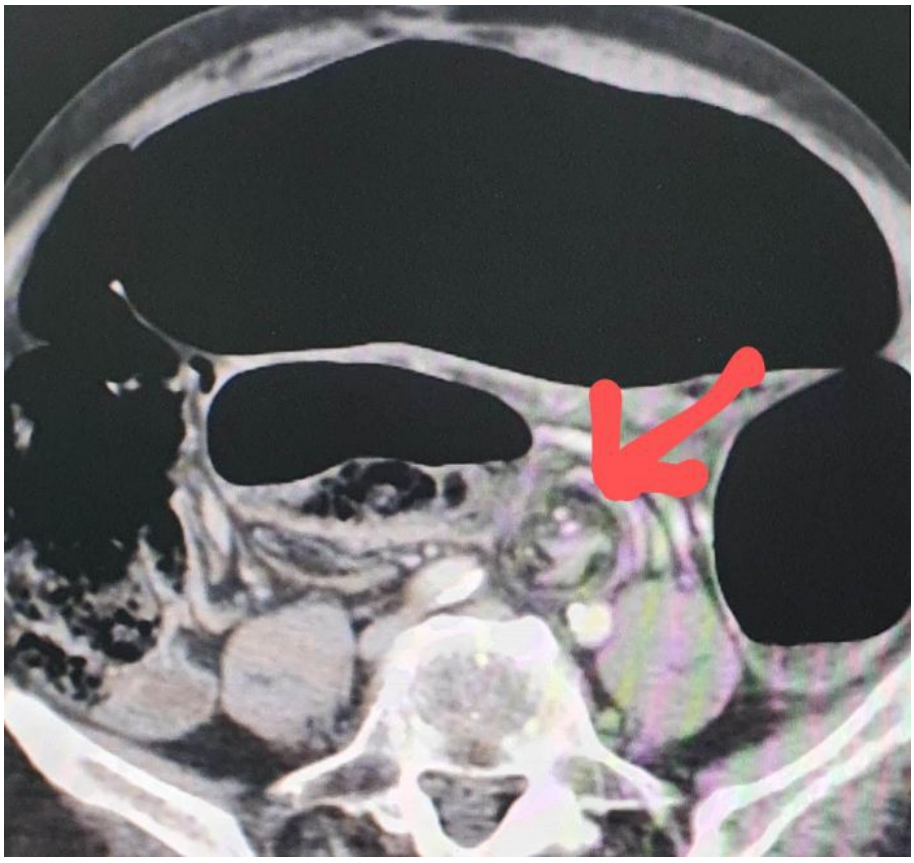

**Figure 2:** Whirl sign. It is otherwise termed as whirlpool sign first described by Fisher, where the bowel, mesentery, mesenteric vessels and fat pads twist in mesenteric axial way [7]. It is highly suggestive of a mechanical torsion system [2].

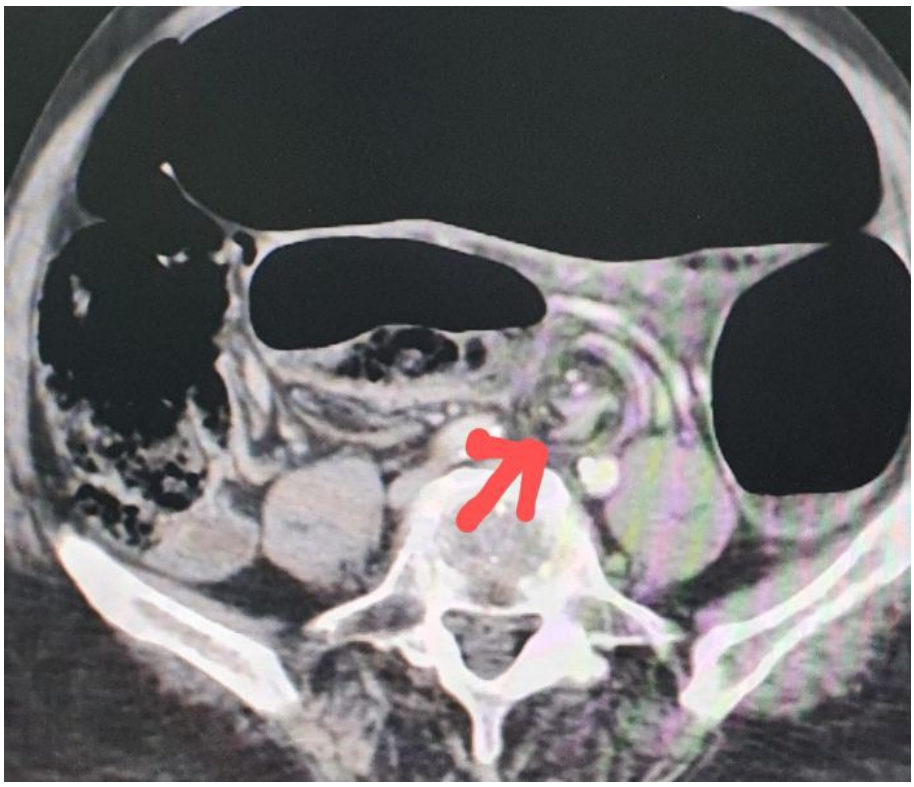

**Figure 3:** Bird beak sign. Where the abrupt cut off the contrast enema at the transition point resembles a bird beak, in our case even though we didn't subject the contrast categorically the sign can be marked since the transition point is obvious.

**Severity signs**

Since spontaneous mechanical torsion of the system leads to boost the pressure in the bowel wall, later leads to to transmural haemorrhage and bowel perforation.

**Other signs in MDCT**

X marks the spot sign: Here the bowel cross, at the level of transition point. Split wall sign: Here mesenteric fat invaginates or indents the bowel wall.

**X-ray Findings in Sigmoid volvulus:**

Coffee Bean Sign: Thick inner wall represents the multiple layers of the appossed bowel and thin outer wall represents the thin single layer of bowel wall. Another differentiating features with the caecal volvulus is the presence of multiple air fluid levels in sigmoid volvulus [8].

Frimann-Dahl Sign: Three dense lines representing the sigmoid walls are seen converging at the site of obstruction in sigmoid volvulus and absence of rectal gas [9].

Absent Rectal gas

**Discussion**

Before the advent of MDCT scan or prior to its specific utilisation as the diagnostic tool for evaluating cases presented with non specific abdominal pain and vomiting. At that time X-ray was the major imaging modality to tackle the menace, since this disease has a specific and higher predilection for age groups especially after 5th decade. Any how particular age group with other profound or detected illness presented with such sort of scenario, driving to

the diagnostic component is the most important one, lack of specificity of the illness and it's non fatalities are quite troublesome.

Role of Radiologist to aid towards the specificity of the illness or the cause of illness would help the clinician or the surgeon to tackle the situation with timely intervention. Dictum oriented investigation like the USG and X-rays may not be fruitful in most of the cases, especially the USG where the usual documentation would be gas filled distended abdomen hampers the acoustic view.

However X-rays have specific edge over USG like like multiple fluid fulfilled bowel loop, Coffee Bean Sign and Frimann Dahl sign, all would have helped to pinpoint the lesion.

The situation had dramatically changed once the MDCT had been presented into the scene with its fast precision oriented acquiring skills had helped many ailing patients. The major consequences of the disease are the intestinal obstruction leading to strangulation and frank gangrene.

In our case, since it was immediately diagnosed following CT scan, the segment of volvulus obstruction had been timely relieved with sigmoidoscopic decompression and detorsion of the pathological site done.

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