

## Situs Inversus Totalis in a Middle Aged Man

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### ABSTRACT

Situs inversus totalis is a rare anomaly in adult. This entity is important clinically because of the possibility of misdiagnosis that could ensue from the abnormally rotated viscera hence; diagnostic conundrum in some situations. A middle-aged man presented with features consistent with large bowel obstruction. Radiological investigations were in keeping with sigmoid volvulus. Patient had laparotomy with finding of mal-rotated abdominal viscera, and had volvulus treated accordingly. The occurrence of such a rare pathology should be borne in mind. Patient and relatives should also be well informed about this peculiarity.

**Keywords:** Large bowel obstruction, Laparotomy Middle-aged man, Situs inversus.

### INTRODUCTION

Situs inversus with dextrocardia (otherwise known as situs inversus totalis) is a rare congenital clinical entity in which there is complete inversion (mirror image) of the anatomical position of both the thoracic and abdominal viscera.<sup>1</sup> This means the heart with the apex beat is located on the right side in the chest while the abdominal viscera including the blood vessels are also positioned in a mirror image of the normal position. These presentations can occur in isolation of the other components whereas it is referred to as situs solinus and can also occur together as it was found in our index patient (situs inversus totalis).<sup>2</sup> This category of patients is predisposed to having associated cardiac anomalies with associated ciliary dyskinesia and splenic atrophy.<sup>3</sup> Ciliary dyskinesia may predispose them to recurrent lower respiratory tract infection.<sup>4,5</sup> Making a clinical diagnosis in this category of people is usually faulted with misdiagnosis in certain conditions because of the mal-positioning of the organs especially pathologies involving the alimentary system. This clinical condition may remain asymptomatic from infancy to adulthood only to be discovered incidentally while managing an unrelated ailment. In this report, we present a case of a middle aged man who presented with features of large bowel obstruction and intra-operative findings of situs inversus.

### CASE PRESENTATION

YK, a 47 year old man presented with right lower abdominal colicky pains, with associated abdominal distension and constipation which started about a week

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prior to hospital presentation. There was no associated fever or vomiting. No history of per recta bleed and no previous abdominal surgery. Clinical examination revealed a middle aged man who was calm, not pale, not dehydrated. Vital signs were essentially with normal values. There was mild abdominal distension, tympanitic percussion notes with hyperactive bowel sounds. Rectal examination revealed empty rectum and no masses were felt. He had plain abdominal radiograph done with features in keeping with sigmoid volvulus (Friman-

Dahl lines). He was prepared for exploratory laparotomy which he had with operative findings of complete visceral rotation (caecum, appendix and ascending colon on the right, descending and sigmoid colon on the left). Also, the liver, gallbladder were seen on the left hypochondrial region with complete absence of the spleen. He had sigmoidectomy with primary colo-colic anastomosis. He also had appendectomy carried out at same surgery. Post-operative period was satisfactory and he was discharged home on the 7DPO

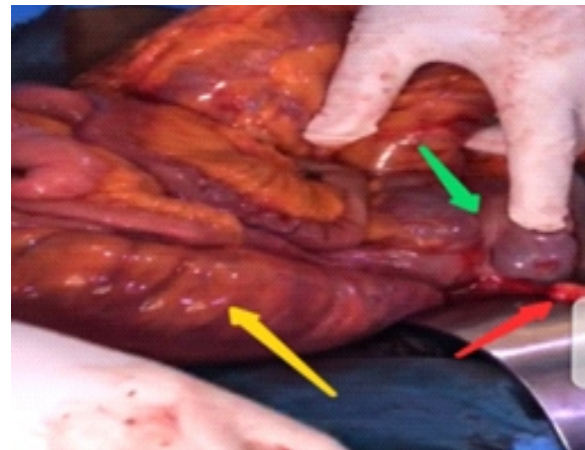
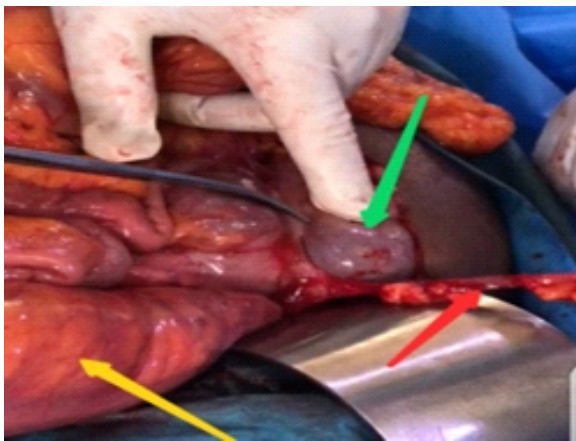


Figure 1: Yellow arrow: right-sided sigmoid colon; Green arrow: Left-sided caecum Orange arrow: Left-sided appendix



Figure 2: Orange arrow: Right-sided stomach; Yellow arrow: Left-sided liver; Purple arrow: Left-sided gall bladder

## DISCUSSION

Situs inversus totalis is a rare congenital anomaly that involves a mirror-image positioning of both thoracic and abdominal visceral across the left-right axis of the body. It is said to be present in about 1 in 25,000 patients with no racial or sex predilection.<sup>6</sup> Situs inversus totalis could be asymptomatic from childhood to adulthood as it is in our index patient only for the condition to be diagnosed while managing an unrelated disease entity hence; the abdominal surgeon should always bear it in mind that this anatomical variation may be encountered unexpectedly and the need to take rationale decision

at such surgeries. In this index patient, the caecum and appendix were located at the left iliac fossa, it became necessary therefore to carry out appendectomy. This step was taken to negate a future diagnostic dilemma that may arise in the event that the patient comes down with acute appendicitis. Though genetic factors have been implicated in the aetiology of this rare clinical entity, other factors have also been implicated such as maternal diabetes mellitus and maternal cocaine consumption.<sup>7</sup> Our index patient presented with clinical and radiological features in keeping with acute large bowel obstruction arising from sigmoid volvulus. He earned exploratory laparotomy for the operative management of such only for the surgeon to observe that the sigmoid colon was on the left while the caecum and appendix were on the right side of the abdomen. Other intra-abdominal viscera like the liver and gall bladder were also positioned in a mirror-image manner hence; the patient has been counseled on this and informed to always disclose this important information to his doctors anytime he presents to the hospital for any abdominal complaints. Primary ciliary dyskinesia which could predispose such an individual to recurrent lower respiratory tract infection and infertility have been documented in patients with situs inversus however, our index patient does not have any of such impairments. Dextroposition of the heart with the apex beat located on the right side was also observed in our index patient however, the ECG tracings were normal.

## CONCLUSION

Though a rare clinical entity, the physician or the surgeon should bear in mind the possibility of encountering it. The surgeon is expected to take rationale decision when he is confronted with such during operative procedures and the patient is followed up for life preferably by a team of doctors

that are familiar with the patient's peculiarities.

## REFERENCES

1. Ejeh BA, Ayoola YA, Okolie HI, DanBauchi SS. Dextrocardia with situs inversus in an adult Nigerian. *Nigerian Journal of Cardiology*. 2019; 16(2): 107-110. doi: 10.4103/njc\_2\_19.
2. Shogan PJ, Folio L. Situs inversus totalis. *Military medicine*. 2011; 176(7):840-843.
3. Kumar A, Singh MK, Yadav N. Dextrocardia and asplenia in situs inversus totalis in a baby: a case report. *J Med Case Reports* 8, 408 (2014). doi: <https://doi.org/10.1186/1752-1947-8-408>.
4. Ortega HA, Vega NA, Santos BQ, Maia GT. Primary ciliary dyskinesia: considerations regarding six cases of Kartagener syndrome. *J Bras Pneumol*. 2007; 33 (5): 602-608. doi: 10.1590/S1806-37132007000500017.
5. Bohun CM, Potts JE, Casey BM, Sandor GG. A population based study of cardiac malformations and outcomes associated with dextrocardia. *Am J Cardiol*. 2007; 100 (2): 305-309. doi: 10.1016/j.amjcard.2007.02.095
6. Kumar KM, Irineu BC, Chander S, Kumar A, Balchander J, Nachip[aan M. Complete AV canal defect with dextrocardia with CCTGA A case report. *IJTCVS*. 2003;19: 55
7. Isezuo SA, Ma'aji SM, Isah U, Makuisidi A. Dextrocardia with situs viscerum inversus totalis in a 65 year old man: A case report. *Nigerian Journal of Clinical Practice*. 2010; 13 (1): 98-100.