ISSN: 0975-833X

Available online at http://www.journalcra.com

International Journal of Current Research

Vol. 16, Issue, 08, pp.29613-29615, August, 2024
DOI: https://doi.org/10.24941/ijcr.47608.08.2024

INTERNATIONAL JOURNAL OF CURRENT RESEARCH

REVIEW ARTICLE

INCOMPLETE SITUS INVERSUS AN INCIDENTAL COMPUTED AXIAL TOMOGRAPHY FINDING IN A PATIENT WHO PRESENTED WITH ABDOMINAL SWELLING AND CHRONIC COUGH: A CASE REPORT IN A SPECIALIST HOSPITAL IN PORT HARCOURT, RIVERS STATE NIGERIA

[1,]Chidinma Wekhe and [2*]Vivian Ndidi Akagbue

[1]Department of Radiology, Senior Lecturer RSU, Rivers State University Teaching Hospital
[2]Department of Radiology, Rivers State University Teaching Hospital

ARTICLE INFO

Article History:
Received 18th May, 2024
Received in revised form
19th June, 2024
Accepted 25th July, 2024
Published online 30th August, 2024

Key words:
Situs Inversus, Abdominal Swelling, Abdominal CT, Case Report.

***Corresponding author:**
Vivian Ndidi Akagbue

ABSTRACT

Incomplete situs inversus or situs inversus partialis is a rare congenital malformation usually diagnosed in childhood, in adults it can lead to misdiagnosis. It is a condition in which some organs of the thorax and / or abdomen are inverted and others are as they are. A 0.2% to 0.5% is estimated to be its prevalence. The diagnosis of situs inversus can also be made in adulthood as is the case in the present study. A 54-year-old male patient who was seen at the medical outpatient for acute abdominal swelling which had progressively increased for past two weeks and cough for one month with a medical history of Retroviral disease. A diagnosis of abdominal swelling of an unknown origin with possible pulmonary tuberculosis was made. An abdominopelvic and chest computed axial tomography (CT) scan revealed the liver, stomach and spleen to be on the right but with the heart in place suggesting an incomplete situs inversus alongside moderate ascites. The most feared complication is total volvulus of the small intestine which was absent in this patient. The chest shows hyperdense pulmonary lesions in keeping with pulmonary tuberculosis (PTB). **Conclusion:** The diagnosis of situs inversus is usually made when patient presents with a pathology that leads to a medical consultation as it is frequently asymptomatic. CT is one of the key paraclinical examinations that leads to its diagnosis as genetic tests are not readily available.

Citation: Chidinma Wekhe and Vivian Ndidi Akagbue. 2024. "Incomplete situs inversus an incidental computed axial tomography finding in a patient who presented with abdominal swelling and chronic cough: a case report in a specialist hospital in port harcourt, rivers state Nigeria.". *International Journal of Current Research*, 16, (08), 29613-29615.

INTRODUCTION

Situs inversus partialis is a rare congenital malformation with a prevalence of 0.2% to 0.5%[1], in which there is an incomplete abnormal placement of thoracic and or abdominal organs[2]. This is to say that organs are inverted right/left in relation to normal. Situs inversus was first discovered in humans by Fabricius in the year 1600 and he described the incidence as approximately 1 in 10,000 to 1 in 50,000 births per year[3].Vehsemeyer was the first to describe transposition by X-ray, which in addition to ultrasound has been the diagnostic method of choice[4] Situs inversus could be total; all organs normally on the right are on the left, or Partial(incomplete or ambigus) – a limited number of organs are inverted or a normally lateralized organ becomes median. A situs inversus is not problematic in itself but there is a risk of diagnostic error[5].
The etiology of situs inversus remains unclear but some authors have suggested an autosomal recessive gene inheritance, in which mutations have been identified in genes of patient with situs inversus.

Although this condition is rare it should be considered in the presence of any digestive symptomatology.

Aim and Objectives: To our knowledge no case of incomplete situs inversus as an incidental finding in adults has been reported in our environment. We therefore report this case study as a pilot study and to add to the existing knowledge in the global world.

CASE REPORT

A 54-year old male self-employed business man was seen in the medical outpatient department of a specialist hospital in Port Harcourt on account of chronic cough and abdominal swelling on a background of retroviral disease. On examination, general condition was fair and had moderate abdominal distension. An abdominopelvic and chest CT was recommended for which he presented to the Radiology department of the same specialist hospital. The chest CT revealed cystic and cavitary lesions on the left hemithorax as well as diffuse hyperdense lesion with air bronchogram on the

right. Right pleural collection is also noted**.** Cardiac apex is however seen on the left side. The abdominal CT revealed Ascites. In summary a diagnosis of Pulmonary and extra pulmonary tuberculosis was made on a background retroviral disease.

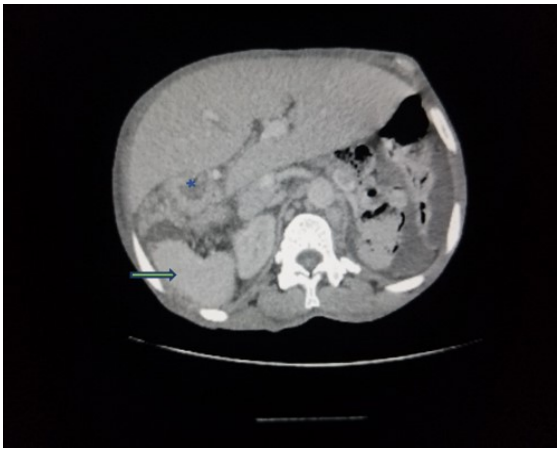


Figure 1, axial view of a contrast enhanced computed tomography image showing, the stomach(blue star), spleen on the right(slimmed green arrow) with empty splenic fossa/bed on the left

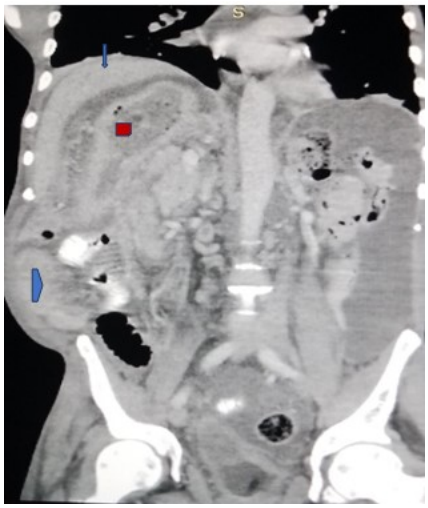


Figure 2. Is a coronal reformat contrast enhanced ct scan of the abdominopelvic region showing the stomach on the right(red box), the liver is rightly positioned(slimmed blue arrow), spleen(blue arrow head) and ascites

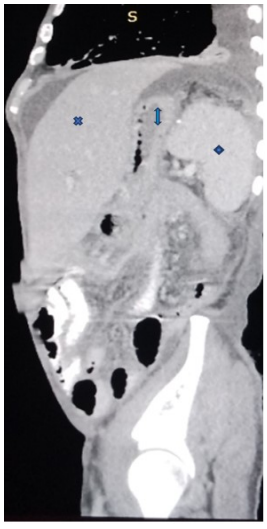


Figure 3 is a sagittal reformat showing the spleen on the right side(blue diamond), stomach is also seen on the right side(doubled edge arrow light blue colour), liver(x-shaped arrow), right sided pleural collection and ascites

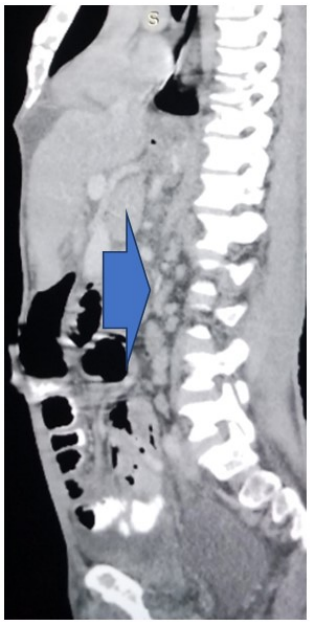
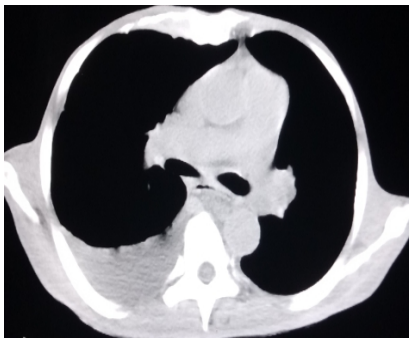
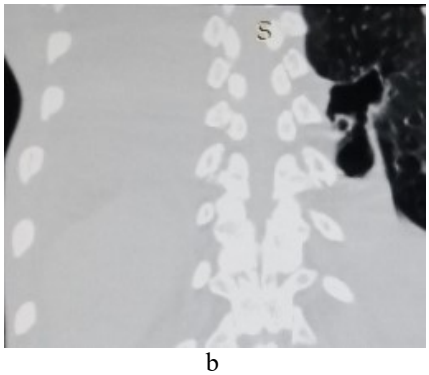


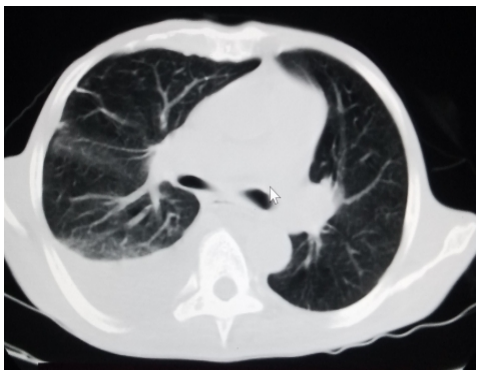
Figure 4. Sagittal reformat of a contrast enhanced ct scan showing multiple para-aortic lymphnodes (big blue arrow)



a



b



c

Figure 5. a-c are axial mediastinal window and coronal reformat and axial lung windows respectively, showing right sided pleural collection, cavity on the left, cardiac apex is on the left

DISCUSSION

Is a rare congenital malformation in adults, with a prevalence of 0.2% to 0.5%1. This condition can be associated with cardiac, renal, biliary and midline anomalies. Asplenia and polysplenia are common. In asplenia, there is a lateralization defect with a small or absent spleen, with resultant duplication of the right side (right isomerism) on the left. The latter been polysplenia, refers to several small spleens with a laterization defect. This would be a left isomerism[6].In our patient none of these were found. Apart from associated anomalies, situsinversus is associated with significant and multiple diagnostic errors which could lead to therapeutic delay to the extent that most cases are diagnosed during post mortem[7]. Therefore, failure to make this diagnosis before patient presents with a symptomatology leads to diagnostic errors. In the case study, this condition has never been made known to the patient. Situs inversus is most often asymptomatic in adults, but its association with malrotation of common mesentery leads to small bowel volvulus which is a leading cause of acute abdomen in adults with situs inversus. The diagnosis of small bowel volvulus presents as shock, acute bowel obstruction or repeated abdominal pain which is the case in our patient. Is a dreaded complication of malrotation of commonmesentery, a rotational anomaly of the digestive tract though rare in adults[8] CT is the gold standard for the diagnosis of this condition and its complications. In an abdominal CT, the "swirl"sign is looked out for which is pathognomonic of malrotation/torsion of the common mesentry[9]. On injection of contrast, this demonstrates the verticality or inversion of the superior mesenteric vessels with the vein situated above and to the left of the artery[10]. The latter sign is however not consistent.

Our patient belongs to the group of asymptomatic patients, whose diagnosis was made incidentally and he was not aware of his condition and possible complications that may be associated with it. Proper education of the patient by a healthcare provider is very important as this will prevent diagnostic errors and therapeutic confusion as well as improve patient's management when they present with pathology at a healthcare facility.

CONCLUSION

The understanding and knowledge of this medical condition will help avert diagnostic error especially during trauma or emergency surgeries. Patient was informed, counselled and advised to relay the information when necessary to future healthcare providers that comes in contact with him as it could affect his medical care.

Consent and Approval: The patient was informed of this study and his information was treated with utmost confidentiality.

Authors contribution: CW- Manuscript conceptualization, reviewed the manuscript, assisted with interpretation the radiological studies, VNA- Manuscript conceptualization, reviewed and edited the manuscript, performed and interpreted the radiological studies.

REFRENCES

Gamblin T, Stephens R,. Johnson R., and Rothwell M. Adult malrotation: A case Report and Review of the Literature. Current surgery. 2023;60: 517-520. https:// doi.org/10 1016/S0 149-7944 (03) 000 30-8

Robot- assisted distal gastrectomy with lymph node dissection for gastric cancer in a patient with situs inversus partialis. A case report with video file.Aisu Y,Kadokawa Y, Kato S et al. Surg. case Rep. 2018; 4: 16. (PMC free article) (PUBMed) (Google Scholar).

Quedraogo N.L.M, Sanogo K., Traore M.S,, Simpore J and Traore S.S. A case report of management of Gastric Perforation in Situs Inversus Totalis in a 45year old adult. A Case Report International Journal of Surgery case reports. 2020; 74:69-72. https://doi.org/10 1016/J. IJSCR. 2020 07. 072.

Bleghen H.M. Surgery in Situs Inversus. Ann Surg. 1949; 129: 244-259 (PMC free article) (PubMed) (Google Scholar)

Huh JW, Kim HR, CHO SH, KMC Y, Kim HJ, joo J K. et al. Laparoscopic Total Mesorectal Excision in a rectal cancer patient with Situs Inversus Totalis. Journal of Korean Medical Science. 2010; 25: 790- 793. https://doi.org/10.3346/jkms.2010; 25: (5) 791-793.

Lee S.F., Kim H, Jung S.Park K, and Kim W. Situs Anomalies and GIT Abnormalities. Journal of Pediatric Surgery. 2006; 41: 1237-1242. https://doi.org/10 1016/ J.JPed.Surg. 2006.03.045

Callibaly M., Boukatta B., Derkaoui A., Sbai H., Ousadden A., and Kanyaa N. Incomplete small bowel volvulus on common mesentry. A severe and rare complication in Adults: Report of 1 case. The Pan African Medical Journal 20, article No 157.https:/doi.org/10.11604/Pamj.2015, 20: 157.4182

Alaoui A.,Alami B., Lamirani Y.A., Boubou M., and Maaraoufi M. Small bowel volvulus complicating incomplete mesentery in an Adult: A case report . The Pan African Medical Journal 37 Article No 287. https://doi.org/10 11604/pmj. 2020; 37: 287.17538

Geoghegan J G. ,Maher M., Mcnally O.M., and Kirwan W.O. Acute midgut volvulus following Laparoscopic Cholecystectomy. Surgical Endoscopy. 1994; 8: 903.https://doi.org/10 1007/BF 00843467.

Lay P.S., Tsang T.K., Caprini J., Gardener A., Pollack J and Norman E. Volvulus of the small bowel: An uncommon complication after laparoscopic cholecystectomy. Journal of Laparoendoscopic and Advanced Surgical Techniques. 1997; 7:59-62

****