



SITUS INVERSUS TOTALIS IN AN ASYMPTOMATIC ADULT: A CASE REPORT

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ABSTRACT

Situs inversus with dextrocardia also referred as Situs Inversus Totalis(SIT) is the complete inversion of position of the thoracic and abdominal viscera.

It may be discovered in infancy because of associated anomalies but often remains asymptomatic and may be discovered incidentally in adult life when a radiographic assessment of a patient is undertaken for some reason.

Incidence of SIT is approximately 1 : 10,000–40,000.

We here report a case of Situs Inversus Totalis (SIT) in a 45-year-old Indian woman who presented at our hospital for surgical fitness prior to her surgery for umbilical hernia. There were no cardiac or respiratory symptoms.

There were no other significant history of acute or chronic symptoms. She had normal development of secondary sexual characteristics. Her general physical examination was also normal.

The systemic examination was also normal except for the cardiac apex beat which was palpated and auscultated in the right 4th intercostal space midclavicular line.

Chest radiography and Computerized Tomography of the abdomen were done prior to surgical fitness.

KEYWORDS : Situs Inversus Totalis, Dextrocardia, Situs Solitus, Situs Ambigus

INTRODUCTION

Situs solitus is the normal position(i.e) it refers to normal anatomy in which anatomical structures which are supposed to be on the right are on the right and those supposed to be on the left are on the left side.

Situs inversus is the mirror image of situs solitus and can be further divided into situs inversus with dextrocardia (situs inversus totalis [SIT]) and situs inversus with levocardia.

Situs inversus with dextrocardia is termed Situs Inversus Totalis(SIT) because the cardiac position, as well as abdominal viscera, is the mirror image of the normal anatomy.

Situs ambiguus or Heterotaxy syndrome is a condition in which the internal organs are abnormally arranged in the chest and abdomen. The term "heterotaxy" is derived from the Greek word "heteros," meaning "other than," and "taxis," meaning "arrangement." Individuals with this condition may have congenital defects affecting the heart, lungs, liver, spleen, intestines, and other organs.

DISCUSSION

Situs Inversus Totalis (SIT) is a rare congenital deformity which was first reported by Fabricius in 1600.

It is mostly related with genetic factors, changes in chromosome, and ciliary dyskinesia in the fetal life. However, individuals with SIT can be as high functioning as normal individual and does not affect the quality of life or lifespan.

However, the risk of heart, spleen, and hepatobiliary malformations increases in patients with SIT.

Most cases of SIT are detected incidentally later in life when the individual seeks medical attention for other reasons. However, some may present earlier as a result of an associated abnormality of the pulmonary cilia, splenic abnormality, congenital cardiac diseases, or noncardiac congenital malformations (e.g., Kartagener's syndrome), which though rare but may be seen

SIT shows no racial and sex predilection

In cases of appendicitis, acute cholecystitis, and diverticulitis pain may be localized opposite to the usual abdominal sites. The hepatic dullness to percussion would be elicited on the left – this has implications for the

performance of transcutaneous hepatic biopsy, and similarly, placement of gastrostomy tubes.

Difficulties may also be encountered and more planning is required for organ transplantation.

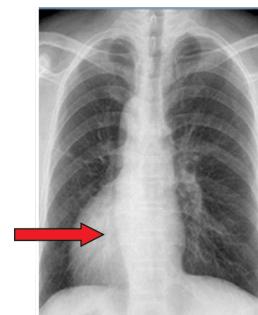
Special care is also needed in identifying the colons at colonoscopy because the splenic and flexures is transposed.

The left-sided appendix may have pain on the right side in about 50% of case. This is because the nervous component of the system is not reversed despite transposition of viscera.

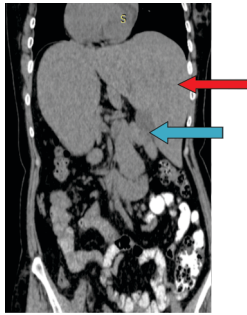
On radiology imaging , splenic flexure is on the right, while the hepatic flexure would be on the left on barium enema images; the location of the gastric shadow is reversed on barium meal; abdominal organs are transposed on sonography; there may be positioning challenges when performing procedures such as ERCP, catheter angiography, and percutaneous transhepatic cholangiography. In addition, positionally, anomalies are seen on chest radiography and cross-sectional imaging

In sports medicine, individuals with SIT need to be evaluated thoroughly before being cleared to take part in competitive sports.

SIT can pose a significant obstacle to the localization of patient symptoms and institution of prompt treatment for acute emergencies such as appendicitis and cholecystitis.



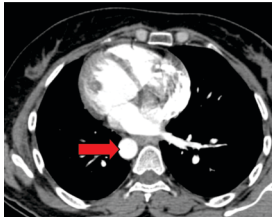
Chest X-ray (PA view) showing dextrocardia.



CT Abdomen (coronal image) showing liver (red arrow) and Gall bladder (blue arrow) on left side .



CT Abdomen (axial image) showing spleen (red arrow) on right side



CT Abdomen (axial image, arterial phase) showing aorta (red arrow) arising from right side

CONCLUSION

Patients with SIT are asymptomatic and usually have a normal life expectancy.

Surgeons and radiologists should look out for this anomaly during preoperative and surgical management of their patients. Doctors should encourage routine medical examination for their patients which could help identify this anomaly, thereby preventing wrong diagnosis and possibly death due to delay in management.

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