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Case Report

Beyond The Norm: Investigating Situs Inversus Totalis

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I N F O

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A B S T R A C T

All internal organs are displaced from their natural anatomical positions in a condition known as Situs Inversus Totalis. In various species of animals, this uncommon congenital disease has been documented. Although the cause is unknown, it may be related to several cardiopulmonary problems. Patients who are diagnosed with this ailment need to be advised, reassured that they may live a normal life, and encouraged to be prepared to disclose any anatomical abnormality to medical professionals as needed. During the preoperative work-up for surgery, clinicians must be vigilant about this condition. The purpose of this study is to present our results and contribute to the gathering of information on these uncommon illnesses.
Keywords: Situs Inversus Totalis, Situs inversus, SIT, and Dextrocardia

Introduction

An uncommon congenital anomaly known as situs inversus totalis (SIT) is characterized by a transposition of the abdominal and thoracic organs in a mirror image. This is a general flaw in situs orientation since the inability to produce typical left-right asymmetry leads to a range of laterality issues.[1] The term "SIT" refers to the internal organ's natural position being reversed in a mirror image.[2] SIT affects 1 in every 8,000 to 25,000 newborns, and radiographic evaluation is the most common method used to diagnose the disorder.[3] This syndrome might make diagnostic and treatment operations more challenging.[4] We determine the clinical elements and methods of treatment for our diseases in this clinical report.

Clinical Reports

A 47-year-old female from Gujarat diagnosed with Situs inversus totalis (SIT) was admitted to the hospital with symptoms including orthopnea (sensation of breathlessness in the recumbent position), PND (paroxysmal nocturnal dyspnea–shortness of breath), flank pain, and chest pain. The patient had no history of any past medical conditions as well as no social history.

Diagnosis

Hematology Test:

During the examination of blood cells, there are very low numbers of platelets (25000 per cm3) with elevated WBC levels (18000 per cm3).

Biochemistry Test

There is elevated S. urea (167 mg/dL), elevated S. creatinine (2.70 mg/dL), and decreased S. potassium (3.20 mEq/L) levels.

Ultrasonography of Abdomen

Ultrasonography of the abdomen suggests a left hypochondrium in the liver with an enlarged liver size of 167 mg/dL, a distended gall bladder, a right kidney showing mild hydronephrosis with 19 mm calculi noted in the renal pelvis, a left kidney showing mild pelvicalyceal dilation, a hypochondrium in the spleen, and it suggests situs inversus totalis.

Chest X-ray PA

Chest radiography shows dextrocardia with bilateral prominent bronchovascular markings, which confirms situs inversus totalis.

2D Echo & Color Doppler Test:

Determines RA and RV are mildly dilated.

ECG:

The ECG determines extreme tachycardia, anterior infarction, and lateral infarction.

Treatment

During hospitalization, the patient received the following pharmacological treatments:
Immunoglobulin (IVIG) 0.4 g/kg body weight per day for 1 week, tablet ceftriaxone 2 gm per day for 1 week, tablet aspirin 75 mg twice a day for 1 week, tablet atorvastatin 40 mg per day for 1 week, intravenous furosemide 5 ampules per day at 10 ml/two hr, intravenous noradrenaline 2 ampules at 10 ml/hr, intravenous sodium bicarbonate 2 ampules at 8 hourly per day, and tablet metronidazole 500 mg per day.

Discussion

The unusual illness known as situs inversus totalis causes every visceral organ to be on the other side of the body from where they normally reside. Both situs inversus totalis (SIT) and situs inversus involving levocardia are common manifestations of situs inversus. The latter represents an SIT that has the heart in its usual place, whereas the former illustrates a situation where it has a situs solitus mirror image [5]. In between 2% and 5% of people with SIT, translocation in the large blood vessels is the most often seen congenital heart condition. Right-sided structures include the aorta, solitary liver, abdomen, jejunum, descending colon, and jejunum. Left-sided structures include the spleen, the gallbladder, the ileum, the ascending colon, & the inferior vena cava.[6] Additional congenital cardiac disorders associated with dextrocardia with situs inversus include dissonant AV interaction and dissonant ventriculo-atrial (VA) interaction and atrial situs soleus.[7] SIT having levocardia is an uncommon condition marked by the mirror-image positioning of the visceral organs, with the exception of levocardia, which is a left-sided heart apex. The prevalence of congenital cardiac disease is close to 95% [8]. As in the case of our patient, most people with this condition are incidentally diagnosed during investigation for another medical condition.
Clinically substantial cardiopulmonary symptoms were present in our patient. Additionally, in some instances, SIT and renal agenesis have been seen.[9] Bilateral renal agenesis, which is more common in men, is present in around 1 in 4000 live births compared to about 1 in 500 live births for unilateral renal agenesis.[10]

Thorough physical examinations, chest X-rays, ultrasonograms, CT scans, and MRIs are required to identify situs inversus. These imaging techniques aid in assessing the internal organ structures, such as the position of the heart›s apex, the aorta›s location in relation to the midline, the positions of the stomach, liver, and gallbladder, the location and appearance of the spleen, and the appearance of the kidneys and vascular structures.[11]

Dextrocardia Having SIT is an uncommon congenital deformity that has to be thoroughly examined if there is a suspicion of it since in some circumstances it might have fatal consequences. Imaging techniques should be employed in addition to thorough physical exams and medical histories to make the diagnosis. It is necessary to set up routine and consistent follow-ups for people with this illness [12]. Since SIT has no symptoms, identifying it requires a high index of suspicion from all doctors. Pediatricians must properly inspect the babies and treat any abnormalities right away. For the purpose of avoiding surgical and transplantation errors that may result from failing to recognize reversed anatomy or an unusual history, it is essential to recognize situs inversus.[12]

Conclusion

Situs Inversus Totalis's cause is yet unknown. However, untreated Situs Inversus Totalis is typically asymptomatic, according to the research. This case study serves as an excellent example of the value of physical assessment abilities in determining SIT. For the interpretation of upcoming complaints and other diagnostic procedures, accurate diagnosis is essential. It could have implications, particularly when it comes to reducing inadvertent operative problems during surgical operations.

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