

CASE REPORT

A Rare Case of Dextrocardia with Situs Solitus: Clinical Image

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ABSTRACT

Dextrocardia with Situs Solitus is a rare congenital heart condition. During the surgical fitness in pre-operative assessment, many patients undergo for routine radiological investigations like X-ray and USG. In some cases, congenital anomalies could be detected which are found symptomless. A case of Dextrocardia with Situs Solitus was diagnosed after X-ray of chest, USG-Abdomen and 2D ECHO admitted in the IPD of Shalya Tantra Department. The aim of this study is to present a very rare condition with the clinical images. The case was treated for hemorrhoid surgery successfully without any complications with the Dextrocardia with Situs Solitus condition.

KEYWORDS

• Dextrocardia with Situs Solitus • ECHO • USG • X-ray.

CASE DETAILS

Dextrocardia is a rare congenital heart disease, which can be either isolated or associated with other severe congenital abnormalities.¹ Dextrocardia may be classified as Dextroversion, Presumptive Dextroversion, Mirror image Dextrocardia,

Presumptive mirror image Dextrocardia, Mixed Dextrocardia and Dextrocardia, type undermined.

The term Dextrocardia signifies that the base-apex axis of the heart is directed to the right and caudally, due to an intrinsic developmental abnormality of this organ.²

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This is in contrast with the term Detroposition, in which the cardiac base-apex axis may be oriented similarly as in dextrocardia or still points toward the left, but in which the heart is shifted to the right due to extracardiac pathologic states involving the diaphragm, lung, pleura, or other adjoining tissues.

The term dextroversion refers to the type of dextrocardia in which the orientation of the chambers is such as would be obtained were the heart rotated or pivoted to the right along the horizontal plane with the atria as a fulcrum.

The term Mirror image Dextrocardia applies to the type of dextrocardia in which the orientation of the cardiac chambers is a mirror image of that of a normally situated heart or levocardia.

The term mixed dextrocardia applies to the type of dextrocardia in which the atria and ventricles do not correspond, that is, the atria are in pivotal position, which the ventricles are in "mirror image" or vice versa.

The term situs will be used to indicate right sidedness or left sidedness and will refer only to viscera outside the heart and to the atria. Thus, viscera and atria in Dextrocardia are either in Situs Solitus (normal position) vis-à-vis "left sidedness" and "right sidedness" or situs inversus. Organs of the chest and abdomen will be considered separately (situs thoracis and situs abdominalis).

Dextrocardia is a rare congenital abnormality in the general population, with an estimated incidence of 1 in 12,000 live births³ and may be associated with significant additional cardiac malformations. The male to female incidence is 1:1. Dextrocardia with a normal abdominal situs has a high incidence of associated congenital cardiac abnormalities; on the other hand, dextrocardia with situs inversus is associated with a lower incidence of congenital heart disease, 0-14%.⁴

From the clinical point of view, the anatomic data most useful in determining the identity and the position of chambers are,

- a. The site of entry of the inferior and of a solitary superior vena cava for the determination of atria;
- b. The course of the anterior descending coronary artery with or without transposition for the determination of ventricles;

- c. The course of the pulmonary trunk when there is no transposition, for the identification of ventricles;
- d. The position of the aortic and pulmonic annuli when there is transposition and both of these orifices are patent, for the identification of ventricles.

Patients with dextrocardia should undergo comprehensive diagnostic evaluation, including chest and abdominal radiography, electrocardiography (ECG), and echocardiography (ECHO). Dextrocardia with Situs Solitus is frequently accompanied by complex congenital cardiac anomalies, such as atrioventricular discordance, single ventricle, atrial or ventricular septal defects, anomalous pulmonary venous return, and transposition of the great arteries. Dextrocardia with Situs Inversus, though rarely associated with congenital heart disease, predisposes individuals to a heightened risk of pulmonary disorders.^{5,6}

In this case, the patient was diagnosed while preoperative assessment. The patient's medical reports, including Chest X-ray, ECG, USG-Abdomen, and 2D ECHO, are presented in Figures 1, 2, 3, and 4, respectively. He was operated for Hemorrhoids under spinal anesthesia and cured completely without any complications. The patient has no any history of any medical illness regarding cardiac condition.

Patient was also educated about his condition and also advised to regular follow up to physician for complaints related to cardiac disorder. This case study is aimed to present a very rare case condition of Dextrocardia with Situs Solitus with the clinical images.

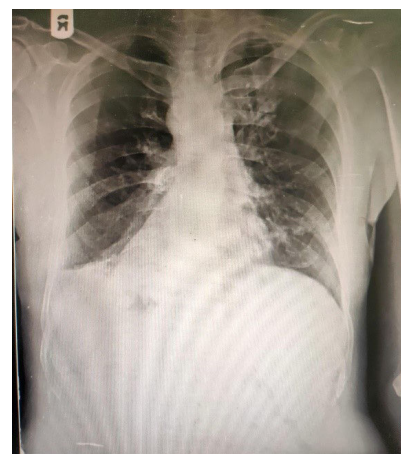


Figure 1: Chest X-ray PA view showing Dextrocardia with Situs Solitus

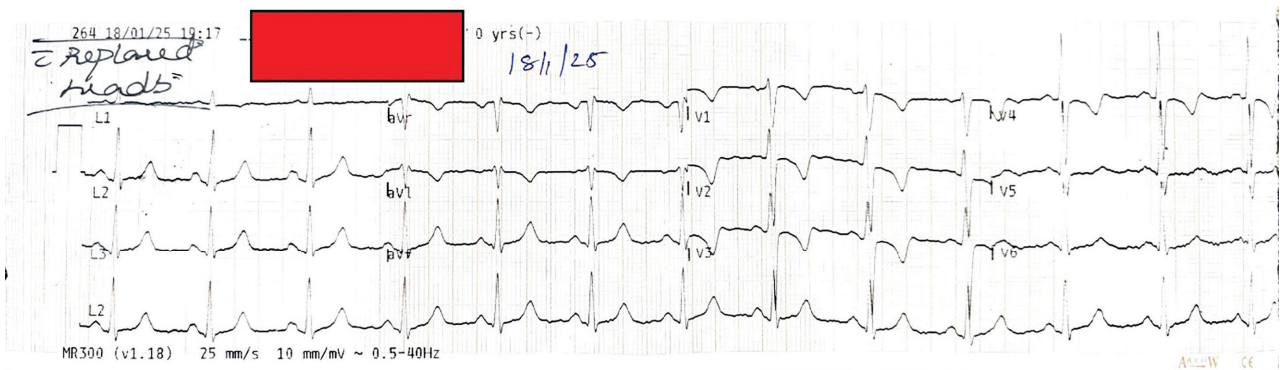


Figure 2: ECG

Please arrange for the following examination of the patient as per details given below:-

Name..... Age.....

Sex : Male / Female X-Ray / Sonography USG Abdomen

Short History..... Hemorrhoid

Physician..... Dr. Y.R. Meghani Deptt..... Shalva Sign..... T

Type of requisition: ☐ Thesis ☐ Paid ☐ Staff ☐ BPL ☐ Sr. Citizen ☐ Others.....

REPORT

दीर्घ } (2) seen in LHC - slo Abdominal
स्थिति } situs

चिन्तास्थ - Multiple gall stones

स्वाधुपिंड - (2)

करीय - (2)

पाउंड्री - (2)

वृद्धाशय - (2)

पित्तकाय - (2)

Figure 3: USG Abdomen

2D ECHO REPORT		
PATIENT NAME: [REDACTED]		AGE: [REDACTED]
OPD/IPD : OPD		DATE: 20/01/2025
MEASUREMENTS:		
AORTA : 24 mm	LVDD : 46 mm	PvP : 0.7 m/s
LA : 38 mm	LVDS : 30 mm	AoVp: 1.2 m/s
IVS : 11 mm	LVEF : 60 %	
PW : 10 mm	TAPSE : 18	RVSP: 20 mmHg
Situs solitus Dextrocardia Left Atrium and Left Ventricle are normal in size and thickness. No RWMA Normal LV systolic Function RA and RV are normal in Size Trivial Mitral Regurgitation / Trivial Aortic Regurgitation Trivial Tricuspid Regurgitation, RVSP: 20 mmHg Good RV systolic Function Intact IVS/IAS No Pericardial Effusion /No Obvious LA/LAA/LV clot/No vegetation Final Diagnosis: Situs Solitus Dextrocardia Normal LV size and Thickness Normal LV systolic Function No PAH LV diastolic Dysfunction Grade I		

Figure 4: 2D ECHO

Consent of the Patient: Consent was taken from the patient before starting the treatment protocol as well as prior to publication of the case details and pictures.

Conflict of interest: Authors declare that there is no conflict of interest.

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