CASE REPORT

Situs Inversus- A Case Report

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Abstract

This is a report of rare case of situs inversus totalis observed during a routine postmortem examination. There was a complete mirror image reversal of the thoracic and abdominal organs.The variation is discussed along with various signs and symptoms this abnormality can present with and its clinical and surgical implications thereof.

Key Words

Situs Inversus Totalis, Dextrocardia, Kartagener's Syndrome

Introduction

Marco Severino first recognized dextrocardia in 1643. More than a century later, Mathew Baillie described the complete mirror image reversal of the thoracic and abdominal organs in situs inversus. Situs describes the position of cardiac atria and viscera (1-8). Situs solitus is the normal position and situs inversus is the mirror image of situs solitus. In situs inversus , the morphologic right atrium is on the left side and the morphologic left atrium is on the right . The normal pulmonary anatomy is also reversed so that the left lung has 3 lobes and the right lung has 2 lobes. In addition, liver and gall bladder are located on the left , whereas spleen and stomach are located on the right. The remaining internal structures are also a mirror image of the normal.

Case Report

The material for this study comprised one adult human male cadaver in the Department of Anatomy, Govt. Medical College, Amritsar. The abdominal cavity was opened by a cruciform incision passing through the whole thickness of the anterior abdominal wall. Flaps were reflected. The abdominal viscera i.e. stomach, intestines liver, pancreas and spleen were systematically studied and removed. Similarily, thoracic cavity was opened and the position of viscera identified.

The following case presents rare findings of situs inversus totalis in an elderly 60 year old male. The thorax and abdomen were systematically opened and the position of the heart , other visceral organs and blood vessels were noted. Normally, the abdominal aorta is to the left of inferior vena cava but in this case , it was to the right

Fig. 1. "A Case of Situs Inversus with Liver (L) on the Left Side and Spleen on the Right Side

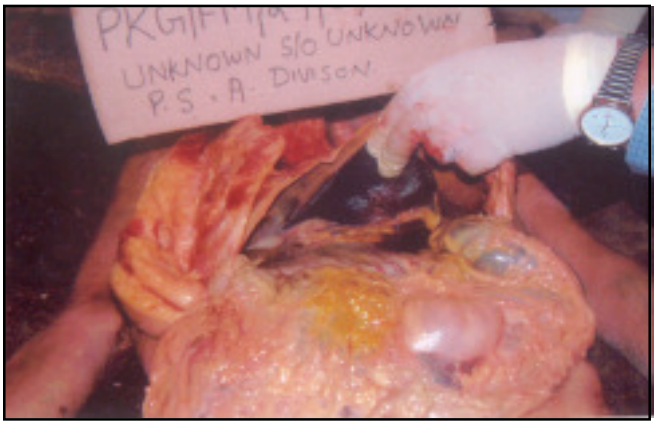

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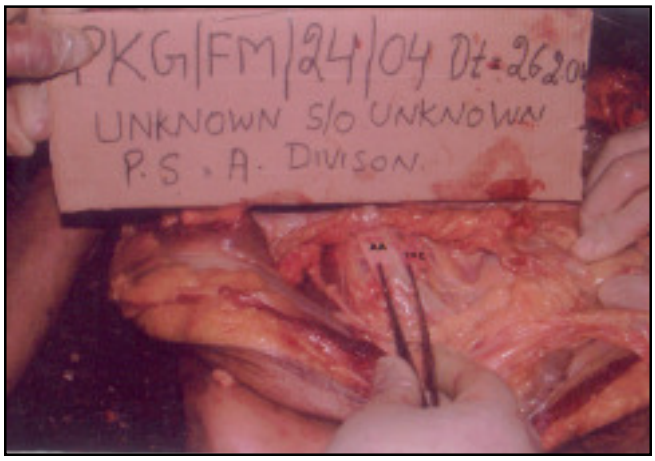
Fig 2. A Case of Situs Inversus Showing Reverse Relation of Abdominal Aorta (AA) and Inferior Vena Cava (IVC)



of inferior vena cava. Apart from this, the heart was on the right side and the normal pulmonary anatomy was reversed. In addition , the liver, gall bladder and appendix were located on the left side while the spleen and stomach were on the right side.

Discussion

Such cases are comparatively rare (0.01%) and pathological conditions of these transposed organs during life are apt to mislead the clinicians (9). Situs inversus occurs more commonly with dextrocardia (10). A 3-5% incidence of congenital heart disease is observed in situs inversus with dextrocardia , usually with transposition of great vessels. Of these patients, 80% have a right sided aortic arch. Situs inversus with levocardia is rare (11), this condition occurs in 1 case per 22000 (12). Kartagener syndrome affects 20% of patients with situs inversus. It is typified by bronchiectasis , sinusitis and situs inversus (13-16). The recognition of situs inversus is important for preventing surgical mishaps that result from failure to recognize reversed anatomy or an atypical history. A trauma patient with evidence of external trauma over 9th to 11th ribs on the right side is at risk for splenic injury. If surgery is planned on the basis of radiographic findings in a patient with situs inversus , the surgeon shoud pay careful attention to image labeling to avoid errors such as a right thoracotomy for a left lung nodule.

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