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Case Report

Situs inversus with levocardia in an 11 year old Nigerian school boy, an incidental finding: a case report and review of literature

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Abstract

An extremely rare case of situs inversus with levocardia in an 11 year old pupil discovered during a routine pre-school admission medical examination is presented.
The importance of routine medical examination and the prime place of chest x-ray leading to further radiological evaluation in diagnosis are discussed.

Keywords: Situs solitus, situs inversus, isomerism, dextrocardia, levocardia.

Introduction

The term situs is a Latin word which refers to the position, location or site of the heart specifically the atria (not the cardiac apex) and the abdominal viscera relative to the midline of the body[1, 2]. The abdominal viscera are namely: the liver, gallbladder, spleen and stomach.

In the normal anatomical arrangement of these body organs which is referred to as situssolitus; the systemic atrium, trilobed lung, liver, gallbladder and inferior vena cava (IVC) are on the right side while the pulmonary atrium, bilobed lung, stomach, single spleen and aorta are on the left side.

The situs solitus may be associated with a levocardia (left sided heart) which has 0.6 – 0.8 % chance for congenital heart disease (CHD) or a dextrocardia (right sided heart) which has 95% chance for CHD. [2]

However, there are various situs anomalies in the population namely: situs inversus and situs ambiguus which is sub classified into left isomerism and right isomerism. In cases of situs inversus, there is a mirror-image arrangement of situs solitus. The prevalence is 0.01% of the population. The arrangement in situs inversus is as follows: on the left side; there is, the systemic atrium, trilobed lung, liver, gall bladder and IVC, while on the right side are: the pulmonary atrium, bilobed lung, stomach, single spleen and aorta.[2]

When this is associated with a dextrocardia it is termed situs inversus totalis (usual variant) and has 3-5% chance for developing CHD, for example Kartagener syndrome (which has a combination of dextrocardia, sinusitis and bronchitis) and it is found in 20% of cases or with a levocardia which is extremely rare with a prevalence of 1 in 22,000 of the general population [3, 4] which is the type our case presented with. It has 95% chance for CHD, though no cardiac anomaly was detected in our case.

Another type of situs anomaly is situ ambiguus also referred to a heterotaxia. In situs ambiguus, there is malpositioning of the viscera plus dysmorphism associated with indeterminate atrial arrangement. Situs ambiguus is further subclassified into: right isomerism and left isomerism. Right isomerism is also described as double right – sidedness or asplenia or Ivemark syndrome. It is characterized by both lungs having three lobes and the main bronchus passes superior to the

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