HOLT - ORAM SYNDROME

Pages with reference to book, From 139 To 140

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Atrial septal defect mostly occurs as a sporadic disorder. In such cases, only about 3% of the first-degree relatives are affected[1]. However, it is important to recognise the occasional patient with an ostium secundum atrial defect associated with an upper limb deformity. This disorder was first described in 1960 by Mary Holt and Samuel Oram in four generations of a family[2]. Autosomal dominant inheritance was subsequently established. It needs to be emphasized that if a patient has got Holt-Oram syndrome, then 50% of the first-degree relatives would also be affected.

CASE REPORT

A 19 years old girl developed recurrent palpitation at the age of 16. Two years later, she developed progressively increasing breathlessness on exertion and recurrent productive cough. Her parents and four sisters were all asymptomatic. When first examined one year ago, she was thin but of normal development and intelligence, without clubbing, cyanosis or oedema. Blood pressure was 120/80 mm of Hg. Pulse 72/mm regular and of normal volume and character. JVP was normal. Apex beat was palpable in the fifth left intercostal space midway between the midclavicular and the anterior axillary lines. A left parasternal heave was present. There was wide fixed splitting of the second heart sound with an accenthated pulmonary component. There was no click. A II/ VI grade late systolic murmur was present at the apex radiating to the left axilla and a IH/Vl grade ejection systolic murmur at the pulmonary area. The left thumb lay in the same plane as the fingers. It had two phalanges but its shape was finger-like (Figure land 2).

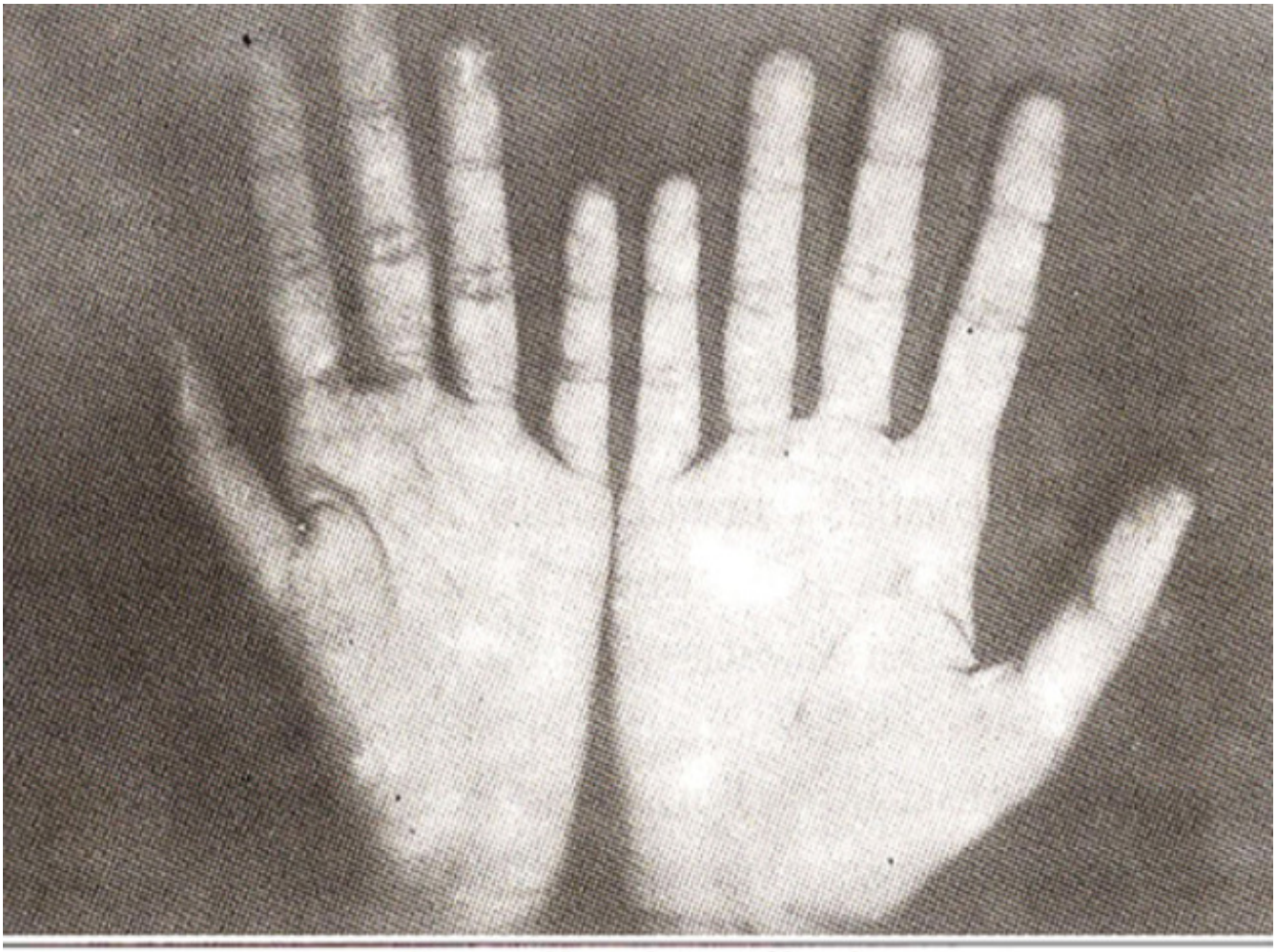

Figure 1. Ventral view of hands.

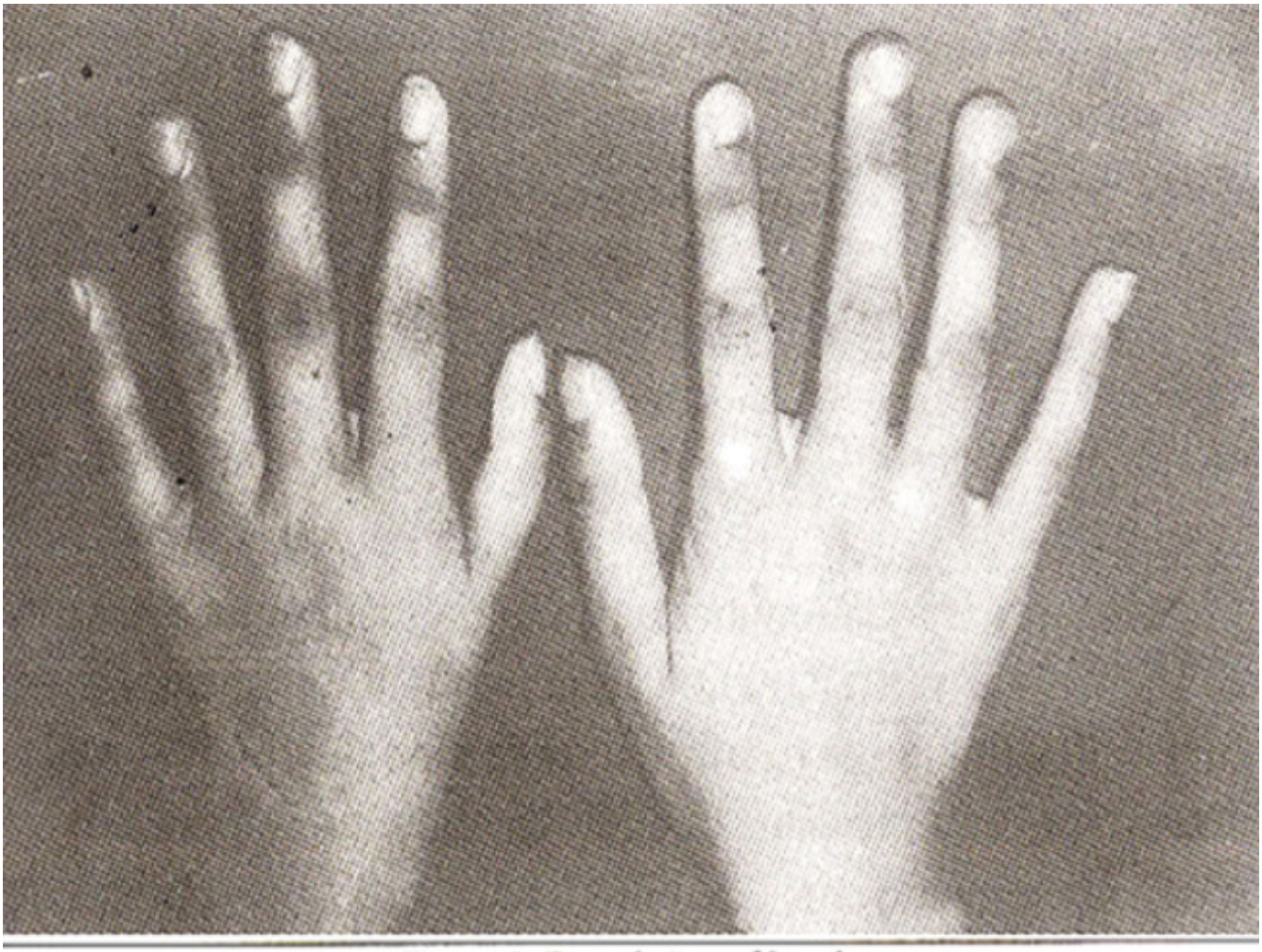

Figure 2. Dorsal view of hands.

Electrocardiogram showed sinus rhythm, right axis deviation, tall and peaked P waves in leads II and V2 to V6, and right ventricular hypertrophy. Chest x-ray showed plethoric lung fields, cardiomegaly, prominent pulmonary conus and enlarged central pulmonary arteries. Echocardiography revealed dilated right atrium and right ventricle, normal sized left ventricle paradoxical movement of the interventricular septum, a large sized atrial septal defect and anterior mitral leaflet prolapse with mild mitral regurgitation on Doppler. Cardiac catheterization data confirmed an atrial septal defect with pulmonary to systemic blood flow ratio of 4.5 to 1, mitral leaflet prolapse and grade II mitral regurgitation. The patient subsequently underwent surgical closure of the atrial sepial defect with a Dacron patch. Her first degree relatives, being asymptomatic, declined physical examination and investigations despite explanation of the situation and its implications.

DISCUSSION

The principal manifestation of Holt-Oram Syndrome is the presence of an upper limb skeletal abnormality in a patient with congenital heart disease. The commonest cardiac anomaly is Atrial Septal Defect (Secundum variety) followed by VSD, although all types of cardiac anomalies have been reported with this syndrome[1,4]. The reported patient besides ASD had also mitral leaflet prolapse as congenital cardiac abnormality[5]. However this anomaly is known to occur independently with ASD in 10-20% of patients. The population frequency of HoltOram Syndrome has not been determined. This

disorder appears to be underdiagnosed as most patients are merely considered as having “garden variety” atrial septal defect[1]. Females are affected more severely than males. In about 60% cases one of the parents is affected but the other 40% occur sporadically apparently due to gene mutation[3]. The skeletal abnormality in the offspring and relatives is more common than the cardiac anomaly. For the purpose of genetic counselling it is very important not to miss the diagnostic clue of an upper limb deformity. The first degree relatives should always be examined. An early diagnosis would then be possible in the affected but asymptomatic relatives.

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