CONGENITAL ISOLATED LEFT VENTRICULAR DIVERTICULUM WITH DIVARICATION OF THE RECTUS ABDOMINUS MUSCLE

Asjad Khan, Tariq A.Siddiqi, Rabih Kazoun, Ammar Asban, Wajdan Manah, Ikram ul Haq Chaudhry.

King Fahad Specilist Hospital, Dammam Kingdom of Saudi Arabia

ABSTRACT

Isolated congenital left ventricular diverticulum is rare entity. It should not be mixed with left ventricular aneurysm. Aneurysms are wide necked and diverticulums have a narrow neck connection with left ventricle. Left ventricular diverticulums are commonly associated with multiple cardiac abnormalities.

Key Words : *Congenital, left ventricular diverticulum, divarication of recti, surgery.*

Address for correspondence:
Ikramul Haq Chaudhry, FRCS (CTh), FETCS
Consultant Cardiothoracic Surgery
Section Head, Thoracic Surgery
King Fahad Specilist Hospital, Dammam
Kingdom of Saudi Arabia
Phone: +966 3 843 1111 ext 6930
e-mail: ikram.chaudhry@kfsh.med,sa

INTRODUCTION

Congenital Left ventricular diverticulum is a rare entity. The largest series of eight cases has been reported by the Texas Heart Institute between 1965-1984[1]. Diverticulums most commonly arise from left ventricle and uncommonly from right ventricle[2].

A Constellation of congenital abnormalities involving lower sternum, abdominal wall, diaphragm, heart and pericardium associated with left ventricular diverticulum have been described by Cantrell in 1985[3].

O Bryan first described the left ventricular diverticulum in 1838 with an estimated incidence of 0.013%[4].

We report a case of left ventricular diverticulum with associated divarication of the recti in a spontaneously delivered six weeks old, full term baby boy. The baby was neither cyanotic nor jaundice at birth. The parents noticed an abnormal pulsation in the epigastrium and baby was taken to hospital where it was admitted for investigations. Physical examination revealed separation of rectus abdominal muscles and a subcutaneous epigastric pulsatile mass. There was no sternal defect. Palpation revealed a divercation of recti and a palpable pulsatile mass correlating with the heart beat. There was a grade III/IV systolic murmur at the left sternal border. The lungs were normal to auscultation and percussion.

The rest of examination was normal. Laboratrory data including CBC, cardiac, liver and renal panel were within normal limits. EKG and Chest X Ray were normal.
Echocardiography (ECHO) and Magnetic Resonance Imaging (MRI) revealed a left ventricular diverticulum extending from the apex of the left ventricle to the epigastrium (fig-1 and fig-2). Surgical correction was performed using hypothermic cardiopulmonary bypass. The diverticulum was excised and the stump of the diverticulum closed with mattress Teflon buttress sutures. The abnormality of the rectus muscles was corrected using 2/0 polypropyline sutures. Pathology revealed presence of all three layers of the heart in the resected specimen. The post operative course was uneventful and the child was shifted to the ward in due course of time to be followed up in the out-patient's clinic.

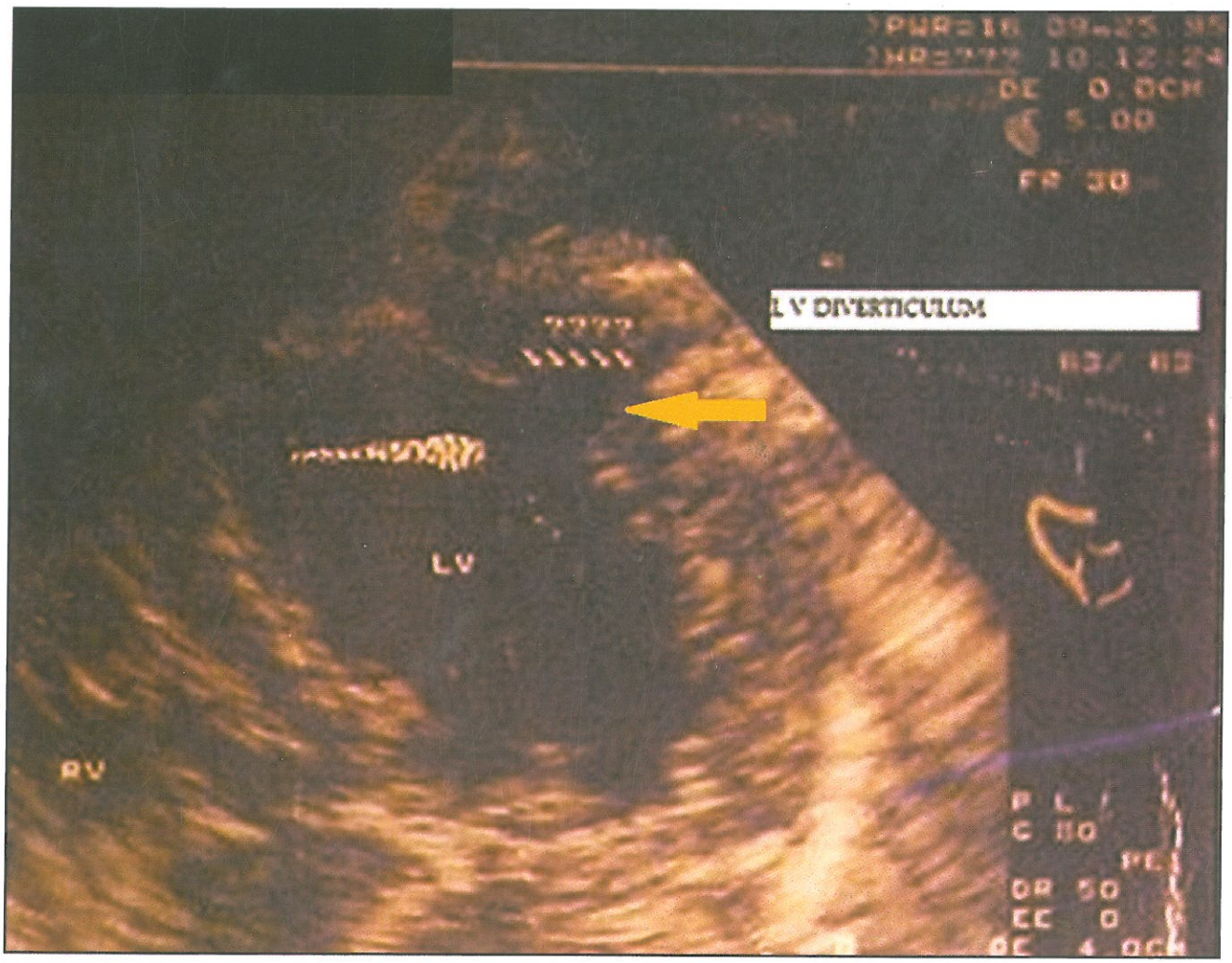

fig-1: Echocardiograph showing left ventricular diverticulum.

DISCUSSION

Isolated congenital left ventricular diverticulums are exceedingly rare and commonly associated with midline thoracoabdominal wall defects and intracardiac abnormalities. In 1944, Roessler performed the first successful surgical resection of a left ventricular diverticulum[5].
There is no known etiology of diverticulums of the left ventricle. According to Parsons, Cantrell and colleagues, a diverticulum may originate from an abnormal attachment of the heart tube

to the yolk sac which can lead to a portion of the ventricle to be drawn out as the yolk sac elements recede[6].

Swyer and colleagues suggested that isolated muscular diverticulums may arise from weakness in the ventricular wall with gradual out pouching from high ventricular pressures. Potts mentioned that the left ventricular diverticulums are primarily due to fusion of the epimyocardium septum transverse, as its descends a diverticulum involving all layers of ventricle is formed. The outcome of patients with left ventricular diverticulum depends on the severity of associated cardiac abnormalities. Many cases have been reported in the literature with sudden death due to rupture of left ventricular diverticulum[7,8]. Skapinker and Mady have reported a few cases. A left ventricular diverticulum may be a cause of a cerebral aneurysm, but more commonly patients die due to rupture of an undiagnosed left ventricular diverticulum. Echocardiography can be useful in the diagnosis of diverticulum of the left ventricle, but MRI provides better anatomical information. Rarely angiography is necessary to assess its relation with the mitral valve and coronary arteries.

CONCLUSION

Due to the high risk of complications and spontaneous rupture leading to death, surgical treatment of congenital left ventricular diverticulum is essential even when it is detected in infancy.

Our case is a rare case report of isolated left ventricular diverticulum with concomitant divarication of the rectus abdominal muscles which underwent successful surgical resection. A post operative echocardiogram revealed no cardiac wall motion abnormalities.

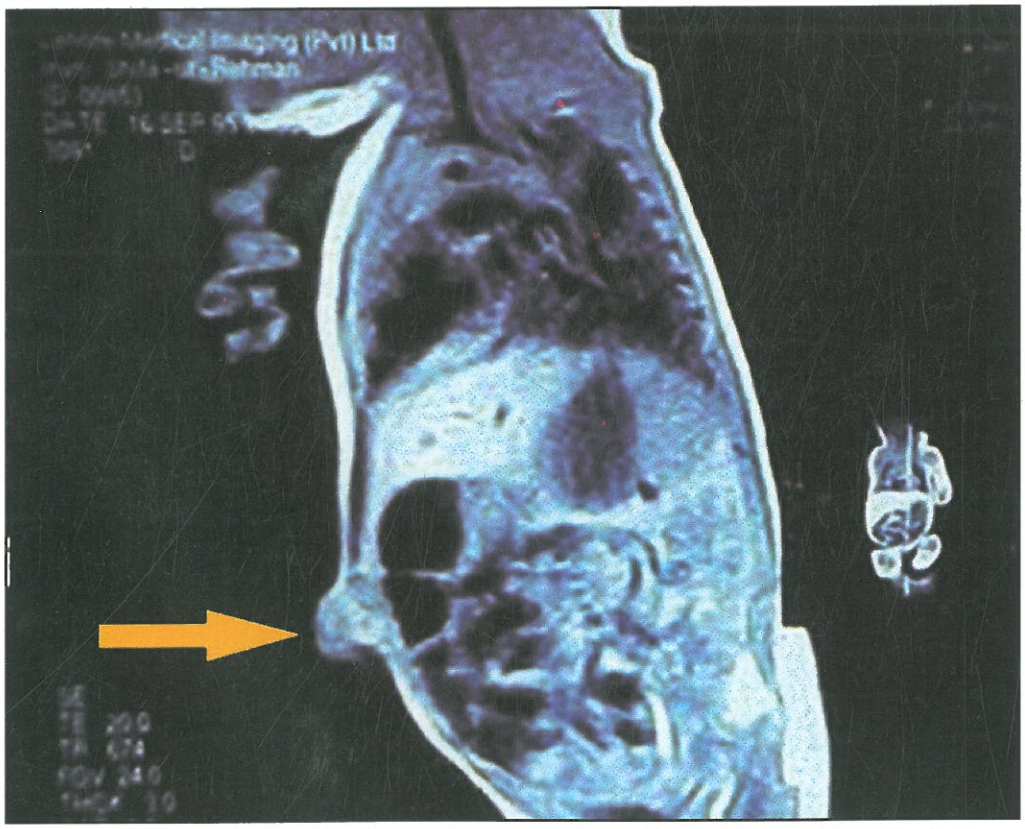

fig-2: Magnetic Resonance Image Scan, showing left ventricular diverticulum extending from apex of heart up to umbilicus.

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