Chylothorax secondary to Obstruction of the Superior Vena Cava: A late Complication of the Atrial Septal Defect Repair

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Abstract:

A case of thorombosis of the superior vena cava (SVC) was complicated by unilateral chylothorax . Removal of the SVC clot and repairing its stenosis with geor-tex patch led to the prompt resolution of the chylothorax .

Chylothorax is an uncommon result of obstruction of the SVC. The most reported cause is the placement of the central venous catheters.(1-6)

We describe a case of chylothorax after atrial septal defect(ASD) repair with single pericardial patch.

Case Report: A 30-year-old man with exertional dyspnea and cyanosis was referred to this center. The diagnosis of ASD and partial anomalous pulmonary venous connection(PAPVC)was established by transesophageal echocardiography

The patient was treated with single pericardial patch repair and discharged without any complication, Postoperative echocardiography was normal. After two months the patient came back with dyspnea and swelling of the face and neck .

In physical examination the patient was afebrile and had respiratory distress. He was noted to have edema and plethora of the face and signs of the right sided pleural effusion.

Laboratory examination showed a hemoglobin level of 12gr/dl, white cell cunt of 4500/ml. platlets 440000/ml and normal arterial blood gas analysis.

Chest x-ray confirmed a massive right sided pleural effusion. Transesophageal echocardiography (TEE) showed no residual flow across the ASD repair patch and strong evidence of SVC obstruction syndrome due to large obstructing clot in SVC by 2D, color and contrast study. (FIG-1,2)

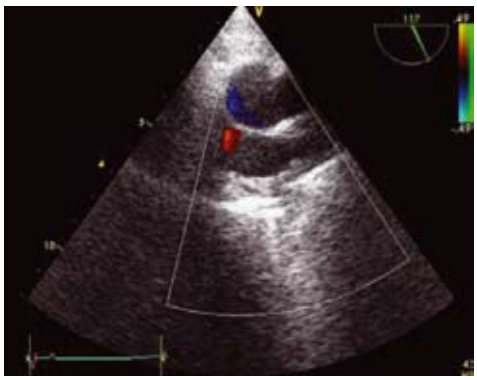

FIG-1: A-Large clot in high transesophagial long axis view of SVC

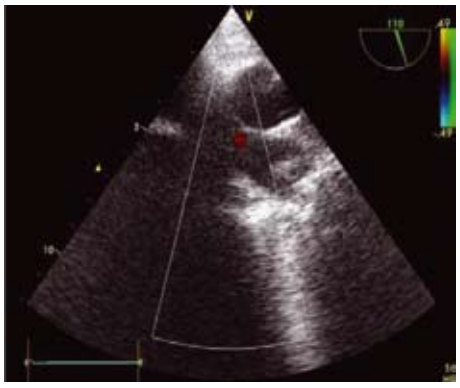

FIG-1: B-Large clot in high transesophagial short axis view of SVC

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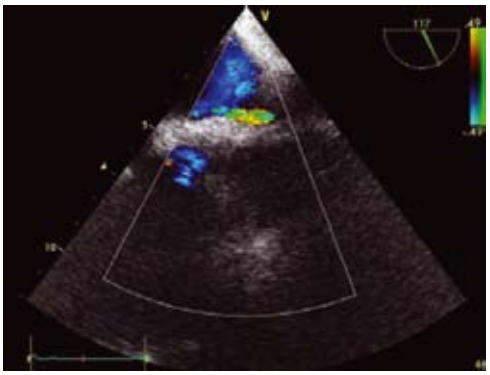

FIG-2:Significant turbulancy in color Doppler study of SVC flow

Right sided cardiac catheterism showed stenosis of SVC.
Thoracocentesis established that the right pleural fluid was chylous .
The patient was reoperated. SVC clot removed and SVC stenosis repaired with geor-tex patch. Chylothorax was resolved after reoperation.(FIG-3)

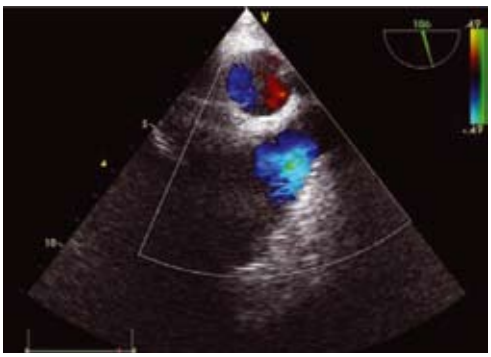

FIG-3:SVC flow by color Doppler study after clot removed

Discussion: The repair of sinus venous arterial septal defect with PAPVC entering the SVC has been a surgical challenge since the earliest reports. (7-8)
Numerous surgical modification have been made to repair the defect and redirect the pulmonary venous return . Although the early problems of persistent PAPVC and residual arterial septal defect have largely been eliminated, problems with SVC stenosis, pulmonary vein stenosis and sinoatrial node dysfunction have remained in many cases.
Chylothorax has been identified as a complication of thorombosis of the superior vena cava.
Blalock et al in 1943 showed that acute interruption of the SVC led to the development of a chylothorax in 60% of cats and dogs(1). Chylothorax has been reported in man as a complication of spontaneous thorombosis or obstruction of the SVC, innominate vein, or sub clavian vein (6). Other cases, occurring in new born infants, children and adults, have been attributed to the placement of centeral venous catheters (2-5).
Ligation of the SVC in animal, causes mediastinal tissues and lymph nodes to become considerably congested with chylous fluid (1).
According to the previous reports, the syndrome of obstructed SVC with chylothorax has a poor prognosis (3-4). Some have observed that, without relief of the venous obstruction, the lungs become lymphangiectatic themselves and this contributes to the long term morbidity(9).
We believe that early relief of the superior vena cava obstruction is important in the management of the chylothorax.

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