FLOATING DEATH IN PERICARDIUM

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ABSTRACT

A 12-year-old boy referred from another facility after sustaining stray bullet injury to chest on left side with no exit wound. He remained stable through out although chest intubation was done in referring hospital. In our Emergency Room he remained well therefore shifted to surgical unit. Investigations revealed bullet in pericardial cavity. It was decided to remove the bullet on elective basis. Surgery was deferred at the request of parents. Six months later child was operated. Initially thoracoscopy was performed but it was converted to open thoracotomy as bullet could not be identified. It was then retrieved easily from paricardial cavity. Post operative recovery was uneventful.

Key words *Pericardium, Thoracoscopy, Thoracotomy, Firearm injury*

INTRODUCTION:

Foreign bodies of the pericardium are rare. They are associated most commonly with significant trauma. The diagnosis of a pericardial foreign body can be difficult. Patients with bullets in the pericardial sac without obvious myocardial injuries are rare, making it difficult to analyze the natural history and propose management protocol.[1]

CASE REPORT:

A 12 year old boy presented in emergency room after sustaining a stray bullet injury while standing at his door step. He was rushed to a nearby tertiary care hospital. He was found to be stable at initial examination.The entrance wound was at 6th intercostal space, one cm lateral to mid clavicular line on left side of the chest. There was no exit wound. X-ray chest showed haemopneumothorax and presence of bullet in the thoracic cavity (Fig-I). The chest tube was placed and case was referred our hospital. Patient was admitted to our surgical unit. Chest tube was removed after 3 days of admission. Plan was made to remove bullet but operation was deferred at the request of family.

After 6 months patient was brought again for proposed operation. Throughout this period patient remained well.

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Bullet removal was planned by video assisted thoracoscopy (VATS). During the procedure

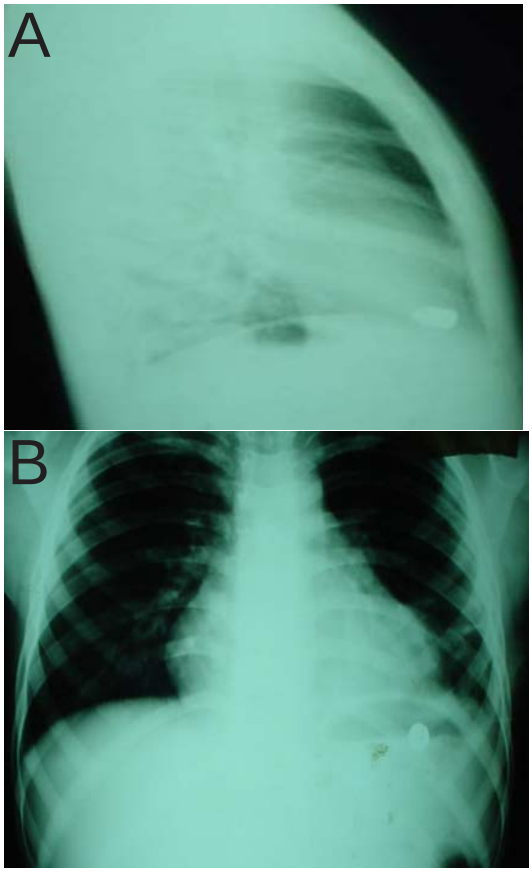

Fig1 (A&B): Bullet seen in lower part of left hemithorax

bullet could not be located. Only positive finding was presence of adhesions in the lower part of thoracic cavity between lung and diaphragm. Open thoracotomy was done through anterolateral approach. Adhesions were lysed. On palpation bullet was found in pericardial cavity. It was removed by pericardiotomy. Postoperatively patient recovered smoothly.

DISCUSSION

Most bullets which enter the body usually leave or remain within the soft tissues having traveled in a straight line.[2] Management of such cases generally consists of repairing the injuries occurred during the passage of the bullet. Stress must be placed on the initial resuscitation of the patient and management of critical injuries. Secondly, localization of the bullet should be done. Finally, determination about the removal of bullet should be based on the hazards of its staying in its location versus the hazards of attempt at removal. Because the bullets appear to be out of focus on radiology, one may think they are in the cardiac chambers though the images of bullets retained in the pericardial sac may be blurred due to the spinning effect of the heartbeat on the bullet.[3]

The metallic foreign body could be verified by its typical sonographic emergence of a strongly echogenic lesion with acoustic echo artefacts. Sonography proved superior to the other diagnostic modalities including computed tomography.[4] One must distinguish between foreign matter in the cardiac chamber or free-floating in the mediastinum. Chest x-rays and fluoroscopy were most helpful to us. Neither CT scan nor an echocardiogram are particularly helpful.[5] In one study specificity and sensitivity of different diagnostic modalities were observed. In the group of patients with cardiac and pericardial injuries, the sensitivity of the chest x-ray, echocardiography and VATS were 57.9%, 88.9% and 100% respectively. Further, specificity of the above was 26.3%, 88.9% and 100% respectively. However, in patients with non-cardiac injuries, the sensitivity of the chest x-ray was 100%, and both the specificity and sensitivity of VATS was 100%.[6]

Both penetrating and blunt cardiac injuries require urgent management. Delayed sequelae and complications have been reported to occur in 4 to 56% of survivors and frequently required secondary surgical corrections.[7] To prevent pericarditis, either sterile or non-sterile, with potential for other significant complications, removal of a pericardial foreign body is always indicated.[5]

In this case we did not perform CT scan or echocardiography and went for VATS. During VATS we found lot of adhesions at lower parts of left lung and diaphragm so we deferred VATS and did thoracotomy. An experienced surgeon may be successful in retrieving foreign body through VATS thus avoiding morbidity associated with open procedure.

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