Post Traumatic Metallic Foreign Body in Heart

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Citation

Abstract
The foreign body (FB) in heart can reach by travelling through venous rout to the heart or can pierce directly to heart due to trauma. This is a case report of a very uncommon entity, where we present a female child aged 4 years who had suffered a foreign body which punctured her calf muscle of right leg and migrated to right ventricle.

1. Introduction

Foreign body in heart is usually post traumatic and may pierce directly in to the heart or peripherally through calf muscle, which has a tendency to migrate through venous route to the heart. Foreign body can be retained in any part of the heart and can cause mild to severe pain. The foreign bodies in heart usually have a complication of cardiac tamponade. The most common site of FB is the chest wall and lung and is very rare in the posterior papillary muscle near the back wall of the left ventricle. If the foreign body is small and smooth the risk of contamination is minimal and if the symptoms are absent there is no indication to remove it1,2.

2. Patient History

In this case report, we present a young female child of four years, who complained of piercing a swing needle in her right. Calf muscle and was given some analgesics for pain and also had an x-ray from some local health centre in the remote area which has shown the FB in the Rt. calf muscle. The patient travelled to higher centre (capital city) for further treatment and took three days to reach higher centre. The x-ray was repeated and no needle was found locally in the calf muscle. In the meantime the patient complained of chest pain more on left side and the patient was advised for x-ray chest which shows linear foreign body in the middle mediastenum, the pain aggregated with time and the patient was suggested to have CT chest which shows foreign body in Rt. ventricle.
3. Discussion

Needles inserted into the body tissue has a tendency to migrate from distant part of the body via the venous route and eventually reaches in to the heart. Here we present a case of foreign body (swing needle) in heart that migrated from the calf muscle of the Rt. lower leg through venous route to right ventricle as under.

Rt. Calf muscle
Rt. Superficial femoral vein
Rt. Common femoral vein
Rt. Common iliac vein
Rt. Inferior vena cava
Rt. Atrium
Rt. Ventricle

4. Clinical Presentation & Management of FB in Heart

The patient often don’t have specific symptoms and the prognosis is extremely variable. Chest pain is the most common symptom. The patient can remain fully asymptomatic even after several years. However there could be complications like pericarditis, cardiac tamponade, endocarditis and death.

Removing an intra cardiac needle can be as difficult as a major cardiac surgery, due to difficulty of detecting and removing the FB. In case where the needle is completely embedded in heart. The use of extra corporeal circulation has been required.

Preoperative & Operative Diagnostic Approach:-

As the foreign body (swing needle) have tendency to migrate, the preoperative use of computed tomography scan, trans-thoracic and Trans-oesophageal echocardiography have been advised to locate the exact position of the needle. The intra operative use of epicardial ultrasound or fluoroscopy is also found very useful.
Fig. 4. Coronal section post processed images of chest shows a linear foreign body in the region of heart.

Fig. 5. Sagittal section, volume rendered image of chest shows a linear foreign body in the region of right ventricle.

Linear mobile foreign body within the right ventricle.
- No evidence of air / blood clot within the right ventricle.
- No evidence of attachment of foreign body to the right ventricle wall and interventricular septum.
- The foreign body just below the tricuspid valve.
- No evidence of pericardial effusion.
- Foreign body in right ventricle

5. Conclusion

The early surgical removal of FB in the heart is considered to be effective approach to prevent the complications but the asymptomatic FB without risk factor or the FB diagnosed latter after the injury may be treated conservatively especially if it is fully embedded in the myocardium or in the
pericardium. If the FB in heart is symptomatic, it should be removed earliest without any further delay to avoid the complications.

References


