

# AN UNUSUAL INJURY TO THE MEDIASTINUM – CASE REPORT

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## ABSTRACT

A six-year-old boy sustained an accidental penetrating missile injury to his chest. Imaging studies revealed a metallic foreign body lodged between the pulmonary infundibulum and the right atrium of the heart. No cardiovascular compromise was produced. Surgical exploration was not required. The foreign body remained stable and non-migratory over a 16-month follow-up period.

**Keywords:** Missile injury, mediastinum, imaging studies, non-surgical management.

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## CASE REPORT

A six-year-old boy sustained a penetrating injury to his chest from an exploding home-made fire-cracker stuffed with a steel ball-bearing. He was conscious and haemodynamically stable on admission. There was a small puncture wound in the third right intercostal space 1 cm lateral to the sternal border. Plain radiography and scanning tomography showed a metallic foreign body in the mediastinum with haziness in the right chest (Fig 1a and 1b). Contrast enhanced computerized tomographic slices revealed a spherical metallic object lodged between the pulmonary infundibulum and the right atrium 1-2 cm below the entry of the superior vena cava (Fig 2a and 2b). Echocardiography showed a small posterior pericardial effusion but good left ventricular function. Daily echocardiographic monitoring showed complete resolution of the effusion and the pulmonary shadowing by the twelfth day<sup>(1)</sup>. The child remained symptom-free during a 16-month follow-up period with the missile remaining unaltered in position on serial tomo-scans.

## DISCUSSION

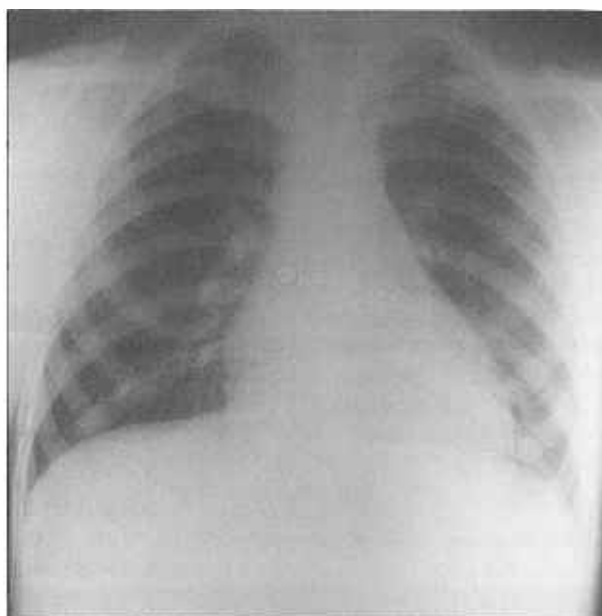
The freak injury described in the case report is similar to that caused by a bullet from a low-calibre hand-gun. The need for emergency surgery for missiles lodged in or near the heart is largely determined by complications of bleeding and tamponade<sup>(2)</sup>. In the absence of bleeding, tamponade and persisting symptoms referable to the injury, the patient may be observed<sup>(3,4)</sup>. The incidence of migration of such foreign bodies is small but they do migrate when they are in the form of an intra-vascular bullet embolus; in which case, the treatment would be similar to an endogenous vascular embolus and be removed as indicated<sup>(5)</sup>. The risk of erosion into adjacent structures is usually delayed and the position of the missile should be periodically assessed with imaging techniques during follow-up<sup>(6)</sup>.

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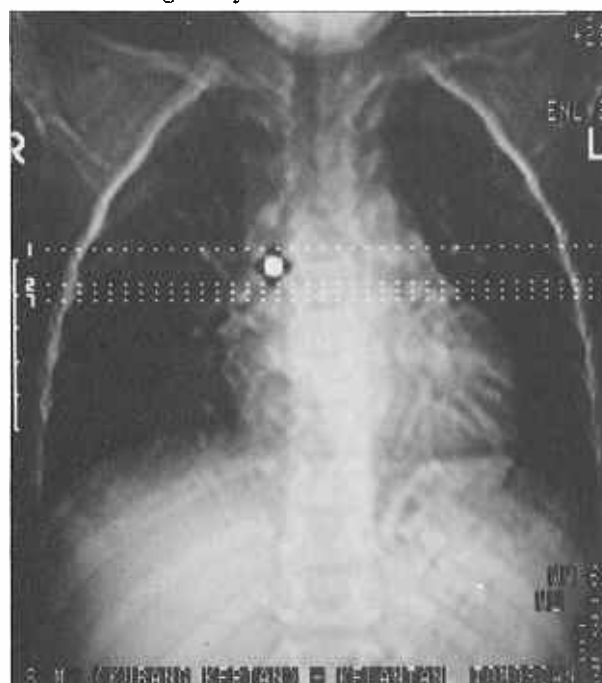
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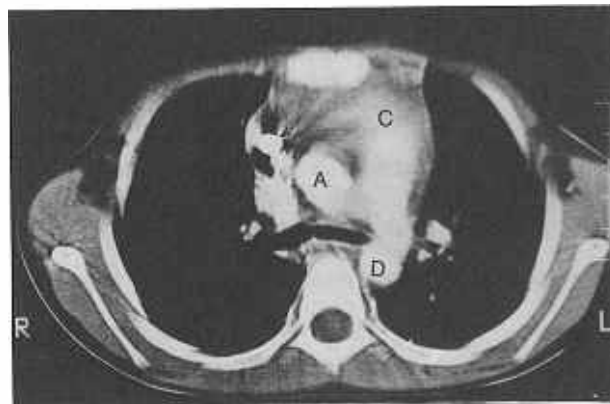
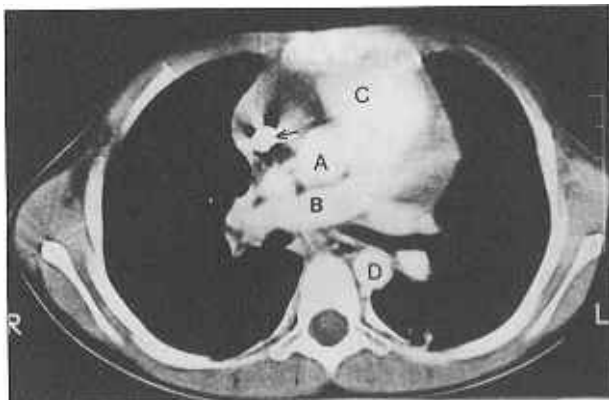
**Fig 1(a)- A plain chest radiograph taken on admission showing haziness of the right chest and a spherical foreign body barely visible within the cardiac shadow.**



**Fig 1(b) - A tomographic scan of the chest showing the metallic foreign body in relation to the cardiac shadow.**



**Fig 2(a) and 2(b) - Computerized tomographic slices (contrast enhanced) at the plane of the foreign body (arrowed) with the related structures labelled as follows: A - Right atrium; B - Pulmonary artery; C - Right ventricle; D - descending aorta**



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