Needle in the heart

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SUMMARY A patient accidentally drove a darning needle through her chest wall into her left ventricle. After referral five weeks later as a possible case of infective endocarditis, the needle was detected and removed successfully by open heart surgery. It was localised precisely by echocardiography.

Case report

A 61-year-old female diabetic was admitted to hospital for depression. There was a past history of congestive cardiac failure, which had been satisfactorily controlled with digitalis and diuretics. Diabetic control had been poor with oral agents, so stabilisation on insulin was started in hospital. On returning from the bathroom after urine testing one morning she complained of a sharp central chest pain which lasted a few minutes. The pain had followed a stumble while carrying a bed pan and she had struck her chest with her hand while steadying herself. Examination of the chest was unremarkable. Chest x-ray film was reported as normal.

Fig. 1 Chest x-ray film showing needle (arrowed) in cardiac shadow.
Over the next four weeks she sustained two episodes of arterial embolism to her right leg and later to her right forearm, despite treatment with heparin.

The patient was transferred to the Prince Henry Hospital for further management because she had developed a systolic murmur at the left sternal edge and infective endocarditis was suspected.

On admission arterial pulsations in the right radial and right dorsalis pedis artery were absent.

At operation there was a small area of superficial inflammation just to the left of the left anterior descending artery. The left ventricle was opened longitudinally to the left of the left anterior descending artery. The needle (Fig. 3) was seen in the cavity of the ventricle protruding from the inferior portion of the interventricular septum. It was surrounded by a collar of thrombus and was easily removed.

Recovery was uneventful and she was discharged from hospital three weeks after the operation.

Comment

Needles embedded in the pericardium and myocardium have been described previously.\(^1\)\(^-\)\(^3\) Migration through the abdomen and lung tissues into the pericardium occurred in one case\(^2\); self-inflicted direct needle penetration of the pericardium caused profound shock in another.\(^4\) Other patients with intracardiac foreign bodies have developed endocarditis.\(^4\) There was no evidence of endocarditis in our case despite the needle being in situ for five weeks. Though a small area of pericarditis was

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Fig. 2 Preoperative echocardiograph showing abnormal echoes in the left ventricle (arrowed). IVS, interventricular septum; ALMV, anterior leaflet mitral valve; PE, small posterior pericardial effusion; AR, aortic root. An unconventional sweep from the aorta to the left ventricle since transducer angulation was changed to detect the abnormal echoes.

Fig. 3 Darning needle removed from interventricular septum at operation. Note area of corrosion (arrowed).
Needle in the heart

found at operation, this was not seen at any stage with the electrocardiograph.

In this case the needle was propelled directly into the interventricular septum after relatively mild trauma. Review of the immediate post-traumatic chest x-ray film showed the needle to be in the same position as it was in the chest x-ray film on referral five weeks later. Its presence was detected five weeks later by a combination of routine chest x-ray examination, a careful history, and echocardiography. The abnormal echoes probably reflect the thrombus, as the needle was completely embedded in, and adherent to it at operation.

Open heart surgery was deemed necessary as the preoperative echocardiogram had shown the foreign body well within the left ventricular cavity; its complete removal was essential to prevent further embolism.

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References


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Needle in the heart.

I J Potek and J S Wright

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