ACUTE PYOGENIC OSTEITIS OF THE STERNUM WITH ANTERIOR MEDIASTINAL ABSCESS

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ACUTE mediastinitis is a rare condition and, due to the loose areolar tissue of the mediastinum, usually takes the form of a diffuse cellulitis which may be rapidly fatal. The formation of localised abscess is unusual.

Most cases follow perforation of the oesophagus either spontaneously or due to carcinoma, instrumentation, foreign bodies or after surgery. It may also follow infections in the neck by extension downwards in the pretracheal or retropharyngeal spaces. (Hindshaw & Garland 1963).

Other causes include spread of infection from the lungs, pleura, mediastinal lymph nodes, spine, ribs or sternum.

Acute osteomyelitis of the sternum or ribs receives scant attention in the literature. Aird (1958) mentions that the commonest cause of sternal osteitis is an intramedullary drip. Crofton and Douglas (1969) make no mention of sternal osteomyelitis and state that osteomyelitis of the ribs is uncommon, usually seen in children and is often post-traumatic. Holton (1970) has recently described a case of streptococcal osteomyelitis in a rib following a simple fracture.

Elson (1965) described two cases of sternal osteitis associated with extensive costal chondritis, one following medial sternotomy and the other associated with septic arthritis of a sternoclavicular joint.

Osteitis due to typhoid, tuberculosis and actinomycosis have been described among others by Murphy (1916) Moschowitz (1918) and Siler (1942) when these conditions were more common. Maier (1947) has stated that retrosternal abscess is more likely after haematogenous infection and is a dangerous complication which may spread widely in the mediastinum and involve the pleura. A case of acute osteomyelitis of the sternum with retrosternal abscess is described.

Case report

A soldier, aged 17, was admitted to the medical wards with an acute influenzal type illness of four days duration and pain in the chest which was worse on movement and coughing. The only significant findings at this stage were a temperature of 103°F, a diffuse erythematous rash and a leucocytosis of 11,000 with 95 per cent polymorphs. His chest X-ray seemed normal. There had been no recent history of injury or septic foci. Over the next three days his temperature remained elevated and he developed a non-fluctuant swelling and extreme localised tenderness over the sternum at the level of the manubriosternal joint. The rash had by this time disappeared. At this stage surgical advice was sought. A lateral X-ray of the sternum showed some porosis of the manubrio-sternal joint and a suspicion of increased density in the retrosternal tissues.

The sternal swelling was explored under general anaesthetic. A small bead of pus was seen to emerge through a tiny hole in the manubrio-sternal joint. This was enlarged

with nibblers to make a defect of 1 cm diameter. A retrosternal abscess cavity was displayed which contained 20 cc of pus. Evacuation of this was followed by brisk bleeding and the cavity required packing for 24 hours, the pack then being replaced by a tube drain for a further three days.

Bacteriologically the pus grew a coagulase positive staphylococcus which was resistant to penicillin but sensitive to Cloxacillin, tetracycline and streptomycin. He was given a two-week course of Cloxacillin followed by two weeks of tetracycline. A blood culture grew an identical organism after two weeks incubation (he had been started on penicillin the day after admission). Histologically the bone specimen showed a picture of acute infection which the pathologist considered to be acute primary osteitis. His temperature settled rapidly after operation and the wound healed after a month. At review three months later he was symptom free and the wound remained soundly healed. No abnormality could be seen on X-ray of the manubrio-sternal joint.

Discussion

That this was a case of primary pyogenic osteomyelitis of the sternum is supported by the clinical picture, the bacteriology, the radiological and histological findings. It seemed unlikely that infection started in the mediastinum in view of the absence of any other cause of mediastinitis such as neck infection, swallowed foreign body or focus within the chest. If it had started in the mediasternum it would seem more likely to point in an intercostal space or suprasternal notch rather than the middle of the sternum.

The case seems unusual in the absence of local trauma and near or distant septic focus as has been described with most other cases. A blood-born infection is suggested by the transient rash and positive blood culture. The satisfactory outcome of this potentially dangerous condition is ascribed to a dramatic clinical picture permitting reasonably early diagnosis, an adequate surgical procedure and an intense and prolonged course of appropriate antibiotics.

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