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OSTEOMYELITIS OF THE CLAVICLE

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Osteomyelitis of the clavicle is rare. It is important to study the clinical features, pattern of bone involvement, and radiological manifestations of this disease in the clavicle. Sometimes it can be confused with tuberculous disease of the clavicle or with tubercular sinuses secondary to supraclavicular tuberculous lymphadenitis.

D'Abreu (1933) and Gray (1944) each reported a single case of clavicular regeneration after excision for osteomyelitis in a 14 and a 12-year-old male patient, respectively. Echstein (1951) and De Belder (1955) separately each described a case of staphylococcal infection of the clavicle one during scarlet fever and the other due to direct spread from infective cervical glands. Wakatsuki et al. (1963) reported a case of the superior vena cava syndrome presumed to have resulted from postoperative disorder of bilateral clavicular osteomyelitis.

MATERIALS AND METHODS

Twelve cases of osteomyelitis of the clavicle who attended Willingdon Hospital, New Delhi, and the H. P. Medical College, Simla, between 1966 and 1972 were studied.

A detailed history was recorded and a detailed clinical examination of the patients was carried out and they were investigated roentgenographically. Culture and sensitivity testing of the discharge or aspirate was also performed. Serological tests were carried out to exclude syphilis which at one time was considered to be a common type of infection involving the clavicle. Histopathological examination was made of the material in operated cases.

Observations

The ages of the patients varied from 6 weeks to 22 years, with an average of 12.7 years. Eight patients were males and four were females. The left clavicle was involved in seven and the right clavicle in five patients.

Local presenting symptoms were discharging sinus in ten cases, hot red soft cystic tender swelling in one and painful thickened irregular clavicle in another.

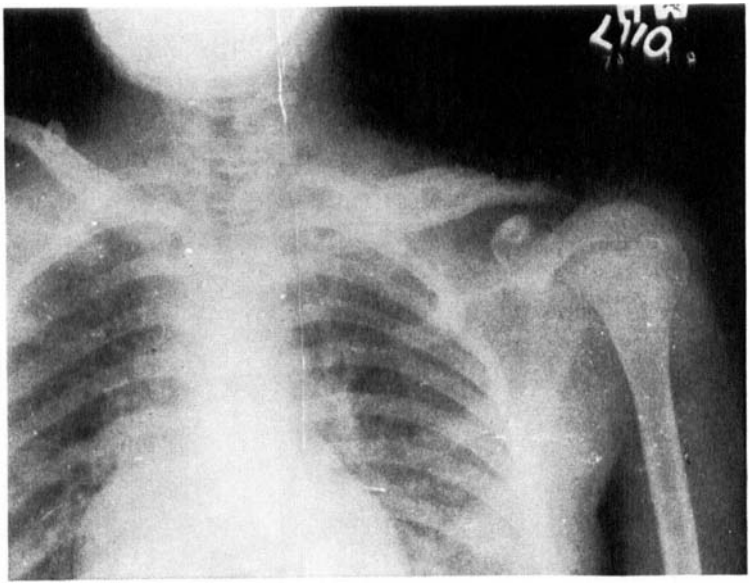

Figure 1 a. X-ray photograph showing expansion of the entire clavicle on the left side.

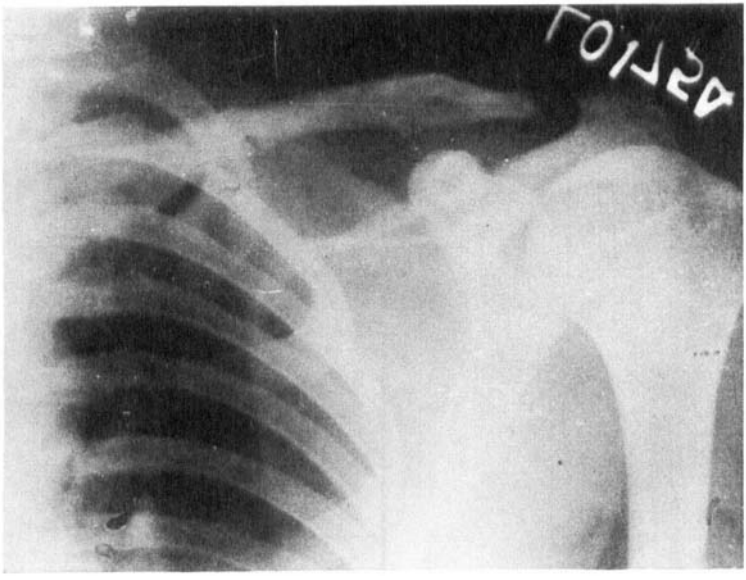

Figure 1 b. X-ray photograph of the same patient 5 years after excision of the entire clavicle showing complete regeneration of the clavicle.

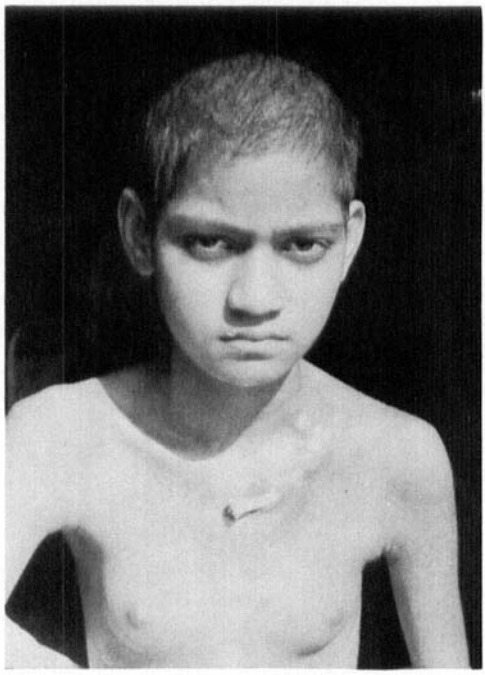

Figure 2 a. Clinical photograph showing the medial portion of the clavicle projecting out through a sinus.

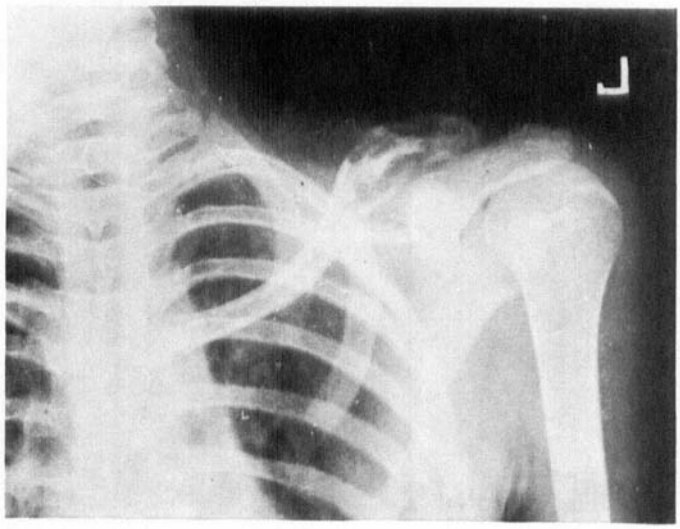

Figure 2 b. X-ray photograph of the same patient showing moth-eaten appearance in the lateral third.

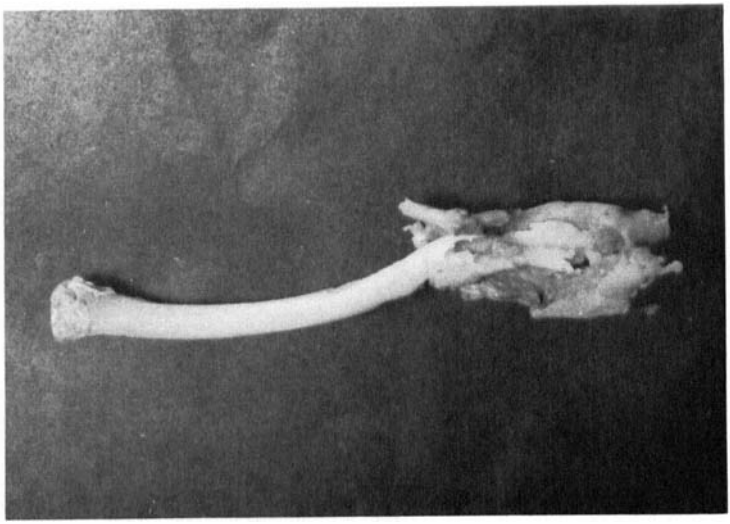

Figure 2 c. Resected specimen of the same clavicle.

The patients presented for treatment after a period of 3 to 52 weeks, an average of 14.8 weeks, from the onset of the first symptom. Multifocal osteomyelitic lesions were seen in five cases presenting as osteomyelitis ulna in one case, bilateral osteomyelitis femur with septic arthritis in the left hip (one case), osteomyelitis femur in two cases and in one case osteomyelitis femur with septic arthritis of the hip and knee joints.

Roentgenograms showed irregular expansion, destruction and periosteal reaction in eight cases (Figure 1 a, b), moth-eaten appearance in the lateral third of the clavicle and dislocation of the sternoclavicular joint in one case (Figure 2 a, b), periosteal reaction with soft tissue swelling in two cases and double fracture with sequestration of the middle segment in another case (Figure 2 c).

Staphylococcus aureus was the causative organism in eleven cases, and was sensitive to one or other of the antibiotics. The antibiotics subjected to the sensitivity test were penicillin, streptomycine, Chloramphenicol, tetracycline, erythromycine and Rovamycine. Culture was not performed in one case.

Excision of the clavicle under cover of appropriate antibiotics was carried out in eight cases. In another case the sinuses healed after extrusion of the sequestrum itself. Two patients would not agree to operation.

Histopathological examination confirmed the clinical diagnosis in all the eight operated cases.

DISCUSSION

Early diagnosis of osteomyelitis of the clavicle is usually not made, because local symptoms and signs are often considered due to trauma and general symptoms and signs of toxaemia are considered due to

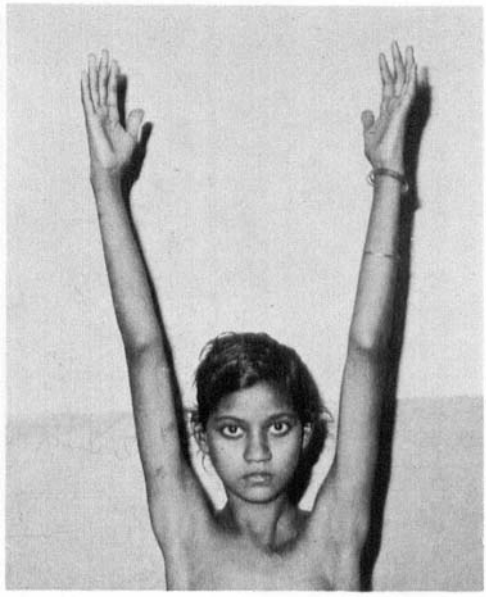

Figure 2 d. Post-operative clinical photograph of the same patient.

associated sore throat or to skin infection, which are the primary source of infection of the bones. Multifocal osteomyelitis is considered to be commonly caused by streptococcus haemolyticus because of its spreading character; in all cases of our series it was due to staphylococcus aureus.

Simple sequestrectomy and saucerization may be inadequate for osteomyelitis clavicle because of its diffused involvement. Complete removal of the clavicle is said to lead to drooping of the shoulder and functional disability of the shoulder girdle. However, in our series there was no drooping of the shoulder and all patients could do overhead abduction a few days after the operation for excision of the clavicle (Figure 2 d). There was partial to complete regeneration of the clavicle from the periosteal tube in all the eight cases, depending upon the period since excision. An immediate post-operative complaint was loss of sensation in the distribution of the supraclavicular nerves, but this disappeared in the course of time.

SUMMARY AND CONCLUSIONS

A detailed study of ten cases of osteomyelitis of the clavicle was carried out. Two cases would not agree to operation and were lost to follow-up. The following points emerged from this study:

1. Osteomyelitis of the clavicle was seen mostly in males at the growing age (except in one case).
2. The lesion was diffuse and diaphyseal, involving the whole or an appreciable part of the clavicle.
3. Roentgenograms showed extensive bone destruction, diffuse bony thickening and occasional sequestrum formation.
4. In chronic lesions with diffuse thickening of the clavicle, the choice of treatment was total claviclectomy.

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