

CASE REPORT

OSTEOMYELITIS IN CHILDHOOD – THE NATURAL HISTORY DOCUMENTED BY RADIOGRAPHS

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Abstract

It is very rare indeed in the practice of children's orthopaedics today in Malaysia that the natural history of long bone osteomyelitis is seen. A case is presented where a shoulder abscess in a 3-year-old child developed into septic arthritis of the shoulder and subsequently chronic osteomyelitis of the adjacent humerus. The parents refused active surgical debridement and sequestrectomies. Three years later the child had regenerated a new humerus over the sequestra. Radiographs are presented illustrating the entire natural history of osteomyelitis with the regeneration of a new humerus.

Key words: *Natural history; osteomyelitis; radiographs*

Introduction

Osteomyelitis in childhood usually begins in the metaphysis of the bones, and is usually contained by the growth plates. If not treated promptly by drainage and antibiotics, it would spread along the metaphysis and also penetrate the cortex to produce subperiosteal abscesses. This can further penetrate through the periosteum producing soft tissue abscess. During healing, new bone (involucrum) forms around the dead cortical bone (sequestra).¹⁻⁴ A case is presented where the natural history of osteomyelitis and regeneration of new bone is illustrated by radiographs.

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Case report

A 3-year-old boy presented in February 1990 with an abscess on the right shoulder. Intravenous antibiotics were given and an incision and drainage was performed. The child subsequently defaulted treatment, and he presented seven times later (March 1990, April 1990, December 1990, January 1991, January 1992, December 1993 and January 1994) with several discharging sinuses over the right humerus. At each visit radiographs were taken of the right humerus. The parents refused debridement and sequestrectomies, but consented to intravenous antibiotics only. At the visit in January 1994, the sequestra of the humerus was noted to be protruding from the largest sinus on the lateral side of the right arm. The parents agreed that this could be removed.



Fig. 1. Initial presentation with soft tissue swelling over right shoulder. This is the acute stage when there is no radiographic change indicating infection of bone.



Fig. 2. One month later with osteomyelitis of the proximal humerus.



Fig. 3. Shaft of humerus is dead and has become sequestra. There is new bone formation around the periosteum (involucrum).



Fig. 4. Further formation of involucrum.



Fig. 5. Dead shaft of humerus has being sequestered out of arm via ulcer. Note the organisation of the involucrum which is becoming a new shaft.



Fig. 6A & 6B. Anterior-posterior view and lateral view showing dead shaft has been detached from the new shaft; however, it still remains embedded in the soft tissue.

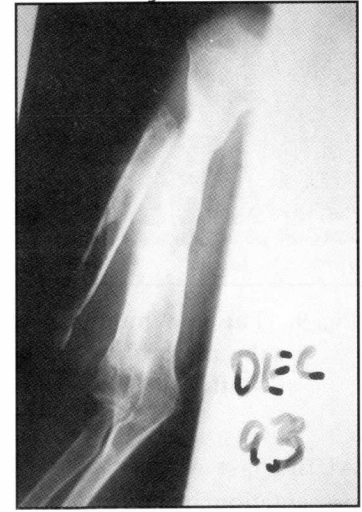




Fig. 7. Clinical picture of the dead shaft protruding through ulcer in arm.

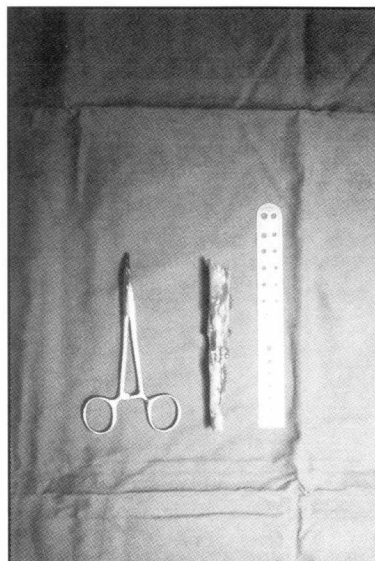


Fig. 8. The dead shaft after removal.



Fig. 9. The new humerus after the removal of the dead shaft.

At the last review 10 years after his first presentation, he has full range of movements of his right shoulder and right elbow and also has normal usage of his right upper limb.

Discussion

This is a rare case that was fully documented radiologically since the onset of symptoms 10 years before. In the pre-antibiotic era, most of these patients would have died because of severe

sepsis.² At the present time, aggressive treatment with debridement and sequestrectomies are performed,³ thereby preventing the florid process of new bone formation on the sequestra. The radiographs in this case are a good example illustrating the process of bone regeneration in osteomyelitis.

References

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