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TEST YOURSELF: ANSWER

Test Yourself Answer To Question: A 44-year-old Female Presented with a 12-month History of Elbow Pain

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Discussion

The initial radiograph (Fig. 1) demonstrates dome-shaped cortical thickening of the proximal radial diaphysis. MRI (Fig. 2) shows a lesion arising from the posteromedial radial cortex with irregular cortical thickening protruding into the adjacent soft tissues with peri-lesional oedema and mild intramedullary oedema. CT (Fig. 3) demonstrates irregular periosteal reaction from the medial radial diaphysis with minor medullary sclerosis and milder periostitis at the adjacent ulnar diaphysis. Follow-up CT at 6 months (Fig. 4) showed some maturation of the periosteal reaction in both bones, and a further MRI study (Fig. 5) 9 months from initial presentation showed complete resolution of the bone and soft tissue oedema, with an area of mature ossification extending into the interosseous membrane from the radial diaphysis. The appearances were consistent with florid reactive periostitis (FRP), which had undergone complete healing with the patient completely asymptomatic at final follow-up.

FRP is a rare periosteal lesion occurring in the 2nd–3rd decades, often associated with preceding trauma [1, 2]. It most commonly affects the tubular bones of the hands and feet, with ~5 case reports of long bone involvement [3]. The condition is in the spectrum of reactive juxta-cortical lesions, which includes bizarre parosteal osteochondromatous proliferation (BPOP) and turret exostosis [3]. Histological examination demonstrates a proliferation of fibroblast and osteoblasts which overlaps with BPOP and turret exostosis. However, cartilage is absent in FRP and periosteal reaction is absent in BPOP [3, 4]. Some authors postulate that all 3 entities represent different stages in the proliferative periosteal process with lesions maturing from FRP to BPOP to turret exostosis [5].

If the mentioned distinct imaging features are seen, FRP is managed conservatively regardless of location [6]. Biopsy is usually not required and imaging follow-up may confirm the diagnosis, although there are some reported cases of recurrence in the extremities requiring excision [1]. Spontaneous regression tends to happen over a 6-month period, typically leaving behind a residual exostosis, a radiological sign of complete healing [4].

Osteomyelitis can mimic FRP radiologically, but the latter lacks the typical osteolytic centre and surrounding sclerotic rim [7]. The peripheral ossification zoning pattern is also absent, excluding myositis ossificans, which is also centred over the muscle rather than periosteum. Some case reports have noted cortical erosion, which may mimic more aggressive lesions such as osteosarcoma. Parosteal osteosarcoma tends to show a firm, lobular 'cauliflower-like' area of ossification encircling the bone, with high-grade lesions possibly showing intramedullary extension not seen in FRP [8]. Turret exostosis is a parosteal bony proliferation on the dorsal aspect of the proximal/middle phalanx with a mature osteocartilaginous cap. Osteochondroma also shows medullary continuity, absent in both turret exostosis and FRP [6].

The radiological diagnosis of FRP is often challenging, but the absence of intramedullary extension and soft tissue mass can help exclude a malignant lesion. Once confidently diagnosed, treatment typically involves conservative management with follow-up imaging showing resolution to a

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Answer: Florid reactive periostitis.

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residual exostosis. However, if the lesion does not resolve or becomes more aggressive, then biopsy should be considered to exclude sinister causes.

Declarations

Conflict of interest The authors declare that they have no conflicts of interest.

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