Osteoid osteoma of calcar of femur in child: prophylactic fixation using PHILOS and excision

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Osteoid osteoma (OO) affects proximal femur in 20%–25% of cases.1,2 When they are intra-articular, they can mimic inflammatory synovitis and be difficult to diagnose.3,4 CT scan is the imaging modality of choice.5 Various treatment modalities have been described in literature but surgical excision remains gold standard.6,7 Here, we present two cases of OO of proximal femur-treated en bloc resection after prophylactic fixation with proximal humerus internal locking system (PHILOS) plate in child and adolescence. This type of fixation provides complete removal and the plate is found to be countered to the bone as illustrated.

Case 1
An 11-year-old girl weighing 20 kg was diagnosed as OO of calcar region after clinical and radiological examination. Plain X-ray and CT scan showed sclerosis in anteromedial aspect of inferior right femoral neck with nidus (figure 1A–C). In supine position, a prophylactic fixation was done using a PHILOS plate through a lateral incision and the lesion was exposed using a Smith-Peterson approach. After marking under C-arm, first some holes were drilled and then a block was excised using an oscillating saw (figure 1D,E). Postoperatively, the child got relieved of her pain and the wounds healed uneventfully. The patient was stated to mobilise full weight bearing after 6 weeks. Follow-up radiographs at 6 months showed a healing bone and no recurrence or implant-related complications (figure 1F).

Case 2
A similar case in a 5-year-old boy child who had been operated before elsewhere for OO presented with recurrence (figure 2A–C). There was a medial scar on his left thigh suggestive of a medial approach and no other records available. This time using a Watson-Jones approach the PHILOS plate was slided and fixed. The limb was then external rotated and the periosteum was incised longitudinally. Two Hohman’s retractor was placed superior and inferior to lesser trochanter and psoas tendon was displaced away from the working field. A cortical window was created and the lesion was curetted. The biopsy confirmed OO. The patient was kept non-weight bearing for a month after which he started to mobilise. At his last follow-up at 8 months, he could stand painless on operated limb, radiographs show bridging callous (hollow arrow) and CT scans show reduction in cavity’s size (solid arrow) were satisfactory (figure 2D–G).

OO are common in lower extremities but can be intra-articular in 0%–16%. These can behave...
Osteoid osteoma of calcar is rare and difficult to diagnose. Surgical excision can be associated with iatrogenic fracture requiring prophylactic fixation. Proximal humerus internal locking system plate best suits the contour with multiple screw options.

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REFERENCES