

Interosseous Osteochondroma of Distal Tibia - A Case Report

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Abstract: The osteochondromas form the largest group of benign bone tumours. They commonly arise from the metaphyseal area of long bones with a cartilaginous cap. Osteochondromas arising from the interosseous border of the distal tibia with pressure effect on distal fibula are uncommon. We present a 14 year old young girl with persistent pain in distal leg, impending fracture, erosion and thinning out of distal fibula with its mechanical deformation, secondary to an osteochondroma arising from the distal tibia from its interosseous border. Early excision of this deforming distal tibial osteochondroma avoided the future risk of pathological fracture of the distal fibula, ankle deformities and syndesmotic complications.

Keywords: Osteochondroma, tibia, syndesmosis, fibula.

Introduction

The largest group of benign bone tumours is comprised of osteochondromas which are composed of spongy bone covered by a cartilaginous cap [1, 2]. Majority of these lesions are asymptomatic exostosis arising from the metaphyseal areas of long bones and are an incidental finding detected on radiographs. Osteochondromas arising from the interosseous border, deforming distal tibia and fibula and occurring prior to physeal fusion have been reported in the literature. Mechanical deformation of tibia and fibula, obstruction of the joint motion, syndesmotic problems (synostosis or diastasis), coronal plane deformities of the ankle and of course subsequent degenerative changes in the ankle joint are some of the documented complications in the neglected cases [3, 4].

Before skeletal maturity, a pathological fracture usually occurs if the osteochondroma is pedunculated [5]. However, the progressively growing sessile lesion in the distal metaphyseal region of the tibia can lead to pressure erosion and scalloping of the fellow bone and a fracture of fellow bone probably may ensue [6,7]. The below mentioned case is presented to bring to light, the fact that if such a scenario is ever encountered it should be carefully dealt, with appropriate operative intervention to avert the aforementioned complications.

Case presentation

A 14 year old female of lean built presented to us with progressively increasing swelling on the lateral aspect of left ankle for last two years. Patient also gave history of pain which was off and on. There was no history of difficulty in walking or restriction of movements at ankle but for the last 3 weeks when she would have pain after long periods of walking or physical activity. On examination there was a globular swelling measuring 3cm × 4 cm over lateral aspect of ankle (Fig- 1).

It was bony hard in consistency, smooth with ill defined margins and non tender on palpation. There was no distal neurovascular deficit. Patient was subjected to anteroposterior and lateral radiography of leg with ankle. The plain radiographs revealed a well defined bony exostosis, arising from the interosseous border of distal tibial metaphysis with erosion and impending fracture of fibula (Fig- 2).



Fig-1: Clinical photograph showing the swelling above the lateral malleolus.



Fig-2: Plain radiograph showing the exostosis arising from distal tibia and indenting the fibula and causing plastic deformation of fibula.

The patient was initially put in an ankle foot orthosis. The nature and prognosis of the condition was discussed at length with the patient and his family and operative intervention was planned once an informed and written consent was obtained. The patient underwent excision of the osteochondroma through an anterior approach (Fig- 3a and 3b). Intra-operatively, the fibula was found to be quite thin and weak. However, its outer cortical shell was intact. The inferior tibio-fibular joint was stable. Histopathology of the excised specimen confirmed the clinical diagnosis of osteochondroma with no malignant transformation. The post operative radiograph showed a complete excision of the lesion (Fig- 4). Post-operatively, the patient was mobilized, non-weight bearing in a below knee plaster, for four weeks. Further mobilization was allowed with a gradual transition from partial to full weight bearing. At her last follow up the patient is freed of her previous complaints with painless return of ankle functions. There was no evidence of recurrence and she is still under follow up.



Fig- 3a



Fig- 3b

Fig-3a and 3b: Peroperative photograph showing the initial incision and after the excision of the exostosis



Fig- 4 : Post operative radiograph

Discussion

Osteochondromas are the most common benign bone tumours (40% of all benign, 10% of all primary skeletal tumours)[8,9,10]. They present most often in the second decade of life. The metaphyses of proximal tibia, distal femur, distal tibia, distal fibula, proximal femur and proximal humerus are the most commonly affected sites [3, 4]. They are usually asymptomatic but may present with symptoms due to pressure effects on neurovascular structures, bursitis, fracture of the osteochondroma following minor trauma or cosmetic concern. Osteochondromas that arise from the tibial interosseous border and cause fibular erosion with imminent fractures after skeletal maturity are rare. Osteochondromas usually follow a predictable course. The lesion slowly increases in size until physeal fusion. After skeletal maturity, the growth of this tumour slows down and eventually ceases in majority. The main symptom is painless mass or bony lump. Progressive enlargement of osteochondroma may cause nerve compression or skeletal deformity resulting in pressure symptoms. Malignant transformation to chondrosarcoma is rare (less than 1%) and should be suspected in the presence of increasing pain and sudden increase in the size of lesion in patients presenting after skeletal maturity [11]. The decision to treat distal tibial osteochondromas nonoperatively carries the risk of persistence of symptoms and ankle deformity. Mirra (1989) stressed on the importance of complete resection of the cartilaginous cap to prevent recurrence [12]. In some previously published studies, anterior [5], posterior [7] and trans-fibular approach with fibular reconstruction [13] have been described, but anterior approach without fibular osteotomy is found to be associated with the least postoperative morbidity and has been successfully used in this particular case.

Conclusion

This case of interosseous osteochondroma of distal tibia stresses the need for early excision of the osteochondromas deforming the distal aspect of tibia and fibula. This is necessary to prevent ankle deformities and syndesmotic complications, and thereby obviating the need for complex reconstructive surgery in future.

Consent

"Written informed consent was obtained from the patient for publication of this case report and accompanying images.

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