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Case Report

Solitary Osteochondroma of the Distal Tibia

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Abstract: Osteochondroma or exostosis is one of the most common benign tumors of the bone;it occurs usually on the metaphysis of long bones, mainly the distal femur, proximal tibia and proximal humerus, and rarely observed around the ankle. We describe an unusual solitary osteochondroma of distal tibia affecting the lateral malleolus of a young man. Although the radiographic characteristics of the lesion were indicative of osteochondroma, a typically asymptomatic tumor that is usually identified as an incidental finding, the rare location and the symptoms described in this case make it rather unusual, in particular pain and impending fibula fracture necessitated surgical intervention.
Keywords: Ankle, Osteochondroma, Exostosis, Benign bone tumors.

INTRODUCTION

Osteochondromaaccounts for 12% of all bone tumors and about 45% of benign bone tumors [1]. Also known as exostosis, osteochondroma is a benign bone tumor consisting of a bony outgrowth covered by a cartilage cap that occurs commonly in the metaphysis of long bones and pelvis, they are mostly asymptomatic and can, therefore, be managed conservatively [2,3]. Osteochondromas are rarely localized in the foot and ankle, except in cases of Multiple Hereditary Exostoses. We describe anunusual case of a solitary distal tibia osteochondroma affecting the lateral malleolus of a young adult male.

CASE REPORT

A twenty-year-old male came to us for evaluation of his painful right ankle. He related a chief complaint of an approximately 4-year history of right ankle pain, and the pain had progressively worsened over the 6 months before his presentation.

On physical examination, right ankle tenderness was elicited upon direct palpation of the anterior aspect of the distal tibiofibular junction, and right ankle range of motion was limited secondary to antalgic guarding. There was no ankle instability or neurovascular impairment. An X-ray was performed showing a well-defined outgrowth arising from the distal aspect of the tibia, causing pressure erosion and impending fracture of the distal fibula (Fig. 1). The CT scan depicted the lesion and the erosion of the fibula (Figs. 2 and 3). The initial diagnosis was osteochondroma of the distal tibia and no other exostoses were found in the patient's limbs.

A surgical excision of the lesion, due to the risk of having a fibula fracture was recommendedand the patient underwent simple removal through an anterior approach. Intraoperative, we found a sessile exostosis with a broad base resembling a cauliflower, eroding the fibula, which was quite thin (Fig. 4), but we could preserve it during the removal of the tumor. Subsequent histopathology exam confirmed the osteochondroma with a 0.6 cm thick cap of benign hyaline cartilage. The patient was maintained non–weight bearing for the first 6 weeks following the operation, and used a walking cast from the sixth to eighth weeks, at which time the patient resumed normal activities and displayed pain-free and full ankle range of motion.

Fig-1: X-ray showing the lesion causing erosion of the fibula

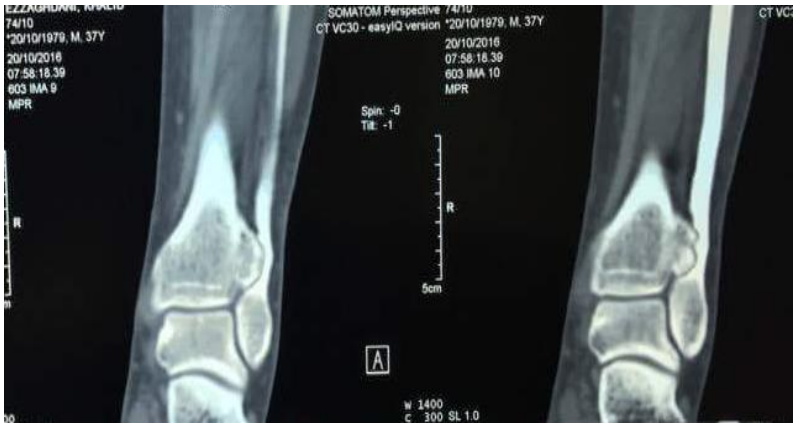

Fig-2: CT scan showing the exostosis producing erosion and impending fibula fracture

Fig-3: 3D image demonstrating the lesion

Fig-3: Intraoperative Image: anterior approach showing exostosis with erosion of the fibula

DISCUSSION

Considered to be the most common benign bone tumor, the osteochondroma or osteocartilagenous exostosis is a benign surface lesion of bone consisting of a bony outgrowth covered by a cartilage cap [1-3]. may occur at any location in any bone that develops from cartilage, but is usually found in an area of active metaphyseal growth in long tubular bones near the epiphyseal plate [1,4–6] and most typically occurs in the distal femur andproximal tibia [5,7]. Osteochondromas around the ankle are very uncommon except in cases of Multiple Hereditary Exostoses [8]. If they affect the ankle, they are mainly found arising from the interosseous border, deforming distal tibia and fibula and occurring prior to physeal fusion, as have been reported by Wani *et al* [9].

Although the most of osteochondromas are asymptomatic benign tumors and never identified, there is always a rare possibility of malignant change (<1%) and the lesions that are incidentally discovered in asymptomatic patients are managed with observation. Early signs of malignancy include pain, continued growth beyond skeletal maturation, and irregularity and thickening of the cartilaginous cap to a thickness greater than 2 cm [1,4,6].

The main symptoms of symptomatic osteochondroma are related to its size and location: irritation of nearby structures, bursitis due to chronic friction or stalk fracture secondary to traumatisms [3,10].

Resection is indicated for patients with a symptomatic lesion secondary to irritation of the surrounding soft tissue, for a lesion in a location that is subjected to minor trauma, for a lesion causing a cosmetic deformity or potential damage to surrounding joints or neurovascular structures, and for a lesion that has characteristics of malignant transformation. [10,11–15]. If possible, resection of an osteochondroma in a child should be postponed until skeletal maturity because the cartilage cap will become smaller and will be farther from the growth Plate [11].

When neglected, osteochondroma arising from the distal aspect of either the tibia or the fibula can lead to plastic deformation, stress fracture, mechanical blocking of joint motion, syndesmotic problems (synostosis or diastasis), varus or valgus deformities of the ankle and subsequent degenerative changes in the ankle joint [10,15-17], so most of the authors prefer a surgical resection for osteochondromas in this location [9,15-17]. For our patient, due to the likelihood of an impending displaced fibular fracture, surgical treatment was decided.

Surgical treatment of osteochondromas consists of simple removal; Mirra reiterated the importance of complete resection of the cartilaginous cap to prevent recurrence [18]. Anterior, posterior and transfibular approach has been described in the literature [16]. The anterior approach used in this case is associated with the leastamount of postoperative morbidity, as have been used by Wani *et al* [9]. There is still little information of the natural evolution after treatment of osteochondromas arising from the distal aspectof either the tibia or the fibula [15,17].

CONCLUSION

Solitary osteochondromas of the ankle are very uncommon, those affecting thedistal tibia or fibula

should be treated with surgical excision in orderto prevent syndesmotic lesions or even fracturedue to the expanding nature of this benign tumor.

REFERENCES:

1. Derk FF, Nardozza AJ. Osteochondroma of the subtalar joint. The Journal of foot and ankle surgery: official publication of the American College of Foot and Ankle Surgeons. 1993 Dec;33(5):448-54.
2. Spatz DK, Guille JT, Kumar SJ. Distal tibiofibular diastasis secondary to osteochondroma in a child. Clinical orthopaedics and related research. 1997 Dec 1;345:195-7.
3. Davids JR, Glancy GL, Eilert RE. Fracture Through the Stalk of Pedunculated Osteochondromas: A Report of Three Cases. Clinical orthopaedics and related research. 1991 Oct 1;271:258-64.
4. Banks AS. Bone tumors of the foot and ankle. In McGlamry's ComprehensiveTextbook of Foot and Ankle Surgery, ed 3, pp 1392–1394,edited by AS Banks, MS Downey, D Martin, and SJ Miller, Lippincott, Williams, and Wilkins, Baltimore, MD, 2001.
5. Berquist TH. Bone and soft tissue tumors and tumor-like conditions. In Radiologyof the Foot and Ankle, ed 2, pp 328–330, edited by H Thomas, THBerquist, Lippincott, Williams, and Wilkins, Baltimore, MD, 2000.
6. Day FN, Ruggieri C, Britton C. Recurrent osteochondroma. J Foot Ankle Surg 37:162–164, 1998.
7. Erler K, Oguz E, Komurcu M, Atesalp S, Basbozkurt M. Ankle swellingin a 6-year-old boy with unusual presentation—report of a rare case. JFoot Ankle Surg 42:235–239, 2003.
8. Takikawa K, Haga N, Tanaka H, Okada K. Characteristic factors of ankle valgus with multiple cartilaginous exostoses. Journal of Pediatric Orthopaedics. 2008 Oct 1;28(7):761-5.
9. Wani IH, Sharma S, Malik FH, Singh M, Shiekh I, Salaria AQ. Distal tibial interosseous osteochondroma with impending fracture of fibula–a case report and review of literature. Cases journal. 2009 Feb 2;2(1):115.
10. Skyrme AD, Chana R, Selmon GP, Butler-Manuel A. Osteochondroma of the distal tibia leading to deformity and stress fracture of the fibula. Foot and ankle surgery. 2003 Dec 31;9(2):129-30.
11. Ismail BE, Kissel CG, Husain ZS, Entwistle T. Osteochondroma of the distal tibia in an adolescent: a case report. The Journal of Foot and Ankle Surgery. 2008 Dec 31;47(6):554-8.
12. Galasso O, Mariconda M, Milano C. An enlarging distal tibia osteochondroma in the adult patient. Journal of the American Podiatric Medical Association. 2009 Mar;99(2):157-61.
13. Matsumoto K, Sumi H, Shimizu K. Tibial osteochondroma causing foot pain mimicking tarsal tunnel syndrome: a case report. The Journal of foot and ankle surgery. 2005 Apr 30;44(2):159-62.
14. Chin KR, Kharrazi FD, Miller BS, Mankin HJ, Gebhardt MC. Osteochondromas of the distal aspect of the tibia or fibula: natural history and treatment. JBJS. 2000 Sep 1;82(9):1269–78.
15. Chin KR, Kharrazi FD, Miller BS, Mankin HJ, Gebhardt MC. Osteochondromas of the distal aspect of the tibia or fibula: natural history and treatment. JBJS. 2000 Sep 1;82(9):1269–78.
16. Gupte CM, DasGupta R, Beverly MC. The transfibular approach for distal tibial osteochondroma: an alternative technique for excision. The Journal of foot and ankle surgery. 2003 Apr 30;42(2):95-8.
17. Danielsson LG, Ei-Haddad I, Quadros O. Distal tibial osteochondroma deforming the fibula. Acta orthopaedica Scandinavica. 1990 Jan 1;61(5):469-70.
18. Mirra JM. Bone tumors clinical, radiological and pathologic correlation. Philadel-phia, Lea and Febiger 1989;2:1626–60.