CASE REPORT

Management of Distal Tibial Interosseous Osteochondroma: A Case Series and Review of Literature

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Abstract

The interosseous part of the distal tibia is one of the regions in which osteochondroma can occur. Osteochondroma typically occurs among growing children and causes gradual ankle deformity by its pressure effect on the fibula. We presented six patients (Five boys and one girl with median age of 13 years old) with distal tibial interosseous osteochondroma. They were treated by a 180° fibular osteotomy around its longitudinal axis just proximal and distal to the lesion. All patients were treated without any complication except for one who developed non-union of the site of the fibular osteotomy. In the last follow-up, all the patients were pain-free, and no recurrence was reported. Various methods have been described for resecting interosseous osteochondroma of the distal tibia, with or without fibular osteotomy and with or without acute correction of ankle deformity during resection surgery. Still, there is no consensus over the best method for resecting such lesions.

Level of evidence: VI

Keywords: Excision, Fibula, Osteochondroma, Osteotomy, Tibia

Introduction

Osteochondroma is a benign lesion of the bone that usually occurs during the second decades of life. Although most osteochondroma lesions are solitary, approximately 10% are associated with hereditary multiple exostoses (HME) syndrome.[1] Osteochondromas can develop in various upper or lower extremities regions, such as the elbow, knee, and ankle. The clinical significance of osteochondroma is its effect on its adjacent structures, gross deformity of the limb, and risk of transforming into a malignant lesion.[2] the interosseous part of the distal tibia is one of the regions where osteochondromas can grow. Such osteochondromas affect ambulation by causing pain and limitation of ankle motion. It can cause valgus deformity of the ankle by its pressure effect on the fibula during growth and even its stress fracture.[3,4] Additionally, it can compress the adjacent neurovascular structures.[5] Since interosseous osteochondroma of the distal tibia usually occurs in growing children, its delayed management can lead to more deformity of the ankle.[6] Several studies report the interosseous osteochondroma of the distal tibia and describe their technique for mass resection. Some surgeons prefer to resect the lesion from the tibia and fibula junction with an anterolateral[3,4,7-10] or posterolateral[6,11] approach by keeping the fibula intact. However, other surgeons perform the resection after fibular osteotomy to increase the exposure and reduce the risk of incomplete resection and, consequently, recurrence.[12-15] Some others have corrected the ankle deformity concomitantly during mass resection surgery.[16,17] In the present study, we aimed to present six patients with interosseous osteochondroma of the distal tibia treated by mass resection and ankle deformity correction. Furthermore, we reviewed and summarized the current literature on the surgical management of interosseous osteochondroma of the distal tibia.

Case Presentation

We retrospectively reviewed six consecutive patients with

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Conclusion

Various methods have been described for resecting interosseous osteochondroma of the distal tibia, with or without fibular osteotomy and with or without acute correction of ankle deformity during resection surgery. However, there is no consensus over the best method for resection of such lesions. More controlled investigations with larger sample sizes are required to identify the best surgical method.

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