Spontaneous healing of an osteochondroma fracture

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Abstract
Osteochondroma is the most common benign tumor of bone, usually asymptomatic. Fracture of an osteochondroma is a rare complication and has been recognized as a cause of pain. Treatment of this fracture is controversial and some authors suggest fracture as an indication for surgical excision. We present a case of fractured osteochondroma that healed without complication.

Osteochondroma represents the most common tumor of bone with an incidence of approximately 3% of population [1]. Most lesions appear in children and adolescents as painless, slow-growing masses. However, they can be symptomatic as a result of complications such as fracture, mechanical joint problems and vascular or neurological compromise [2]. Treatment of this fracture is controversial and some authors suggest fracture as an indication for surgical excision [3]. This report presents a case of fractured osteochondroma that healed without complication. The purpose is to suggest that conservative treatment can be an option for the fractured osteochondroma, especially in the paediatric population.

Case report
An 11-year-old girl presented with a history of fractured osteochondroma of the right distal femur, occurred 3 years before (Fig. 1a, b). Because at the time of the injury, the patient...
was 8-years-old with the lesion close to the physis and the patient had only mild discomfort, the management was non-operative. One month after trauma, the pain disappeared and the radiological evaluation showed fracture healing (Fig. 2). At the time of our examination, the patient had a not painful swelling mass localized at the medial aspect of the lower end of the right distal femur. There was no limitation of all movements of the knee and no neurovascular deficit. The radiographs showed the growth of the well-known osteochondroma (Fig. 3). We decided to follow the patient until the skeletal maturity.

Discussion

The case of a young woman with a spontaneous healing of an osteochondroma fracture has been presented. Although

Figure 1. Anterior-posterior (a) and lateral (b) radiographs of the right knee show a fractured osteochondroma of the distal femur.

Figure 2. Anterior-posterior radiograph one month later shows the fracture healing of osteochondroma.

Figure 3. Anterior-posterior radiograph of the knee three years later showing the growth of the osteochondroma.
Osteochondromas are the most frequently occurring tumors in bone, fracture through their bases is very infrequent [1, 2]. Because most of osteochondromas are situated around the knee and this location is generally susceptible to injury, the fractured osteochondromas which have been reported have been mainly situated around the knee [4]. Fractures in osteochondroma usually occur through the stalk of a pedunculated lesion [5]. The symptoms of fractured osteochondromas are local pain and swelling [6]. These symptoms are usually milder than those of fractures at other sites may be due to the fact that the osteochondroma does not bear loads [6]. The cause of fracture has been reported as secondary to a direct blow or indirect violent muscle contraction [6].

Currently, there is insufficient data in the literature to predict which osteochondroma will fracture and to establish a treatment protocol [4]. Some authors recommend that all fractured osteochondromas be promptly excised [3, 5, 7], whereas others suggest a non-operative treatment [6]. However, because of the small number of patients reported in the literature, the best form of treatment for fractures of osteochondromas remain unclear [3, 6].

Carpintero et al. treated seven cases of osteochondroma fracture: five patients opted for surgery and two patients requested conservative treatment [6]. Physical activity was resumed earlier in patients undergoing surgical treatment than those receiving non-operative treatment. Authors concluded that excision of fractured osteochondroma is preferable in patients engaging in sports because it reduces the time of disability and precludes subsequent recurrence of the fracture.

In a study by Davids et al., three patients with fractured osteochondroma of the proximal tibia were treated with restriction of activities according to symptoms [8]. Two patients healed without complication within eight weeks of injury. The third patient required surgical excision one year after injury of persistent pain caused by nonunion. The authors’ suggestion was that the majority of fractures through the stalk of pedunculated osteochondroma will heal without complication.

Fracture through the base of pedunculated osteochondromas is a rare complication of the most common benign tumor of bone. Because only a few cases are reported in the literature, the management is still controversial. We report a case of spontaneous healing of an osteochondroma fracture. The author’s clinical experience suggests to avoid surgical excision of osteochondromas in pediatric population. In fact, disruption of normal long bone growth by surgical procedure can lead to angular and cosmetic deformity. Therefore, although the surgical excision of a fractured osteochondroma seems to provide faster recovery and return to normal activity, observation could be a second option especially in child. However, after a period of rest ranging from 4 to 8 weeks, if the patient’s symptoms persist, a surgical removal should be performed.

Disclosure of interest
The authors declare that they have no conflicts of interest concerning this article.

References


