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Giant para-articular osteochondroma of knee joint: A case report

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Abstract

We report one case of giant para-articular osteochondroma of knee in female who was 21 years old. X ray, CT scan examination with three-dimensional reconstruction and early biopsy in timely diagnosis. The mass was completely resected. However, there was tumour recurrence. After second's surgical intervention, the postoperative course was uneventful after two years follow-up. Pain disappeared, however there had a decreased range of motion of knee.

Keywords: Knee, para-articular osteochondroma, surgery

Introduction

Para-articular osteochondroma of knee is benign lesion located in the region infrapatellar fat pad ^[1, 2]. It can extend to the whole knee. Osteochondromas are composed of bone and cartilage. Its arise in the fibrous joint capsule or the soft tissue ^[2]. The etiology of this lesion is not well is not well known, but it probably results from repeated trauma which may result in extra-synovial metaplasia of extra-synovial mesenchymal cells ^[3]. This lesion in some cases can become quite large, causing pain and joint stiffness of knee, especially of flexion ^[2, 3]. Surgical treatment is indicated in these cases: it consists of complete excision with an open anterior approach ^[1, 3-5]. We report the case of a giant para-articular osteochondroma of knee which had a satisfactory clinical and functional outcome after treatment

Case Report

A 21-year-old female, who was student, consulted for the management of a giant mass on the anterior part of the right knee evolving for three years. She had no history of trauma or tumour pathology. The clinical examination revealed a patient in good general condition with good haemodynamic constancy. At clinical examination, there was a bulky mass in the right knee with a limp when walking. Mass was located on the anterior aspect of the proximal end of the tibia. It invaded the patella tendon. Knee bending was (25°). It was painful. Mass was firm, fixed in relation to the deep plane. It measured 21 cm longitudinally and 11cm transversally. There were no inflammatory signs (Fig. 1). X-rays and CT scan examination with three dimensional-reconstruction showed a large, calcified neoformation, lying between apex of the patella and anterior view of the proximal tibia. Mass too extended in Hoffa's fat pad region (Figs. 2 a, b). Using a medial parapatellar approach, exploration noted a poorly bounded extra synovial cartilage tumour within the Hoffa and adherent to the patellar tendon and anterior tibial tuberosity. We performed a marginal resection of this tumour while respecting the patellar tendon fibres. We also removed the infra-patellar calcifications. Anatomic pathology examination concluded that the tumour was on osteochondroma (Fig. 3). Evolution at 8 months post-operative was marked by a tumour recurrence (Figs. 4 a, b). We performed a resection of the tumour mass removing the anterior tibial tuberosity, with preservation of the patellar tendon fibres. We performed a bone stabilization with a locked tibial nail and filled the bone defect of the anterior tibial tuberosity with bone cement. We also performed a transosseous fixation of the patellar tendon (Figs. 5 a,b,c and d). Postoperative follow-up of after two years was satisfactory. There were no complications, such as recurrences or malignant transformation. However, there was knee stiffness at 45° (Fig. 6).



Fig 1: Clinical appearance of the right knee (anterior view), showing mass with tumour-like appearance.



Fig 2: a) X-rays of knee, with frontal and lateral view, showed homogeneous opacities on the anterior and posterior surface of the right proximal tibia. These opacities suggest soft tissue calcification. (b) CT scan with three-dimensional reconstruction showed a large calcified neoformation located on the anterior and posterior aspect of the proximal tibia. The calcified tissue was also located in the region of Hoffa's fat pad

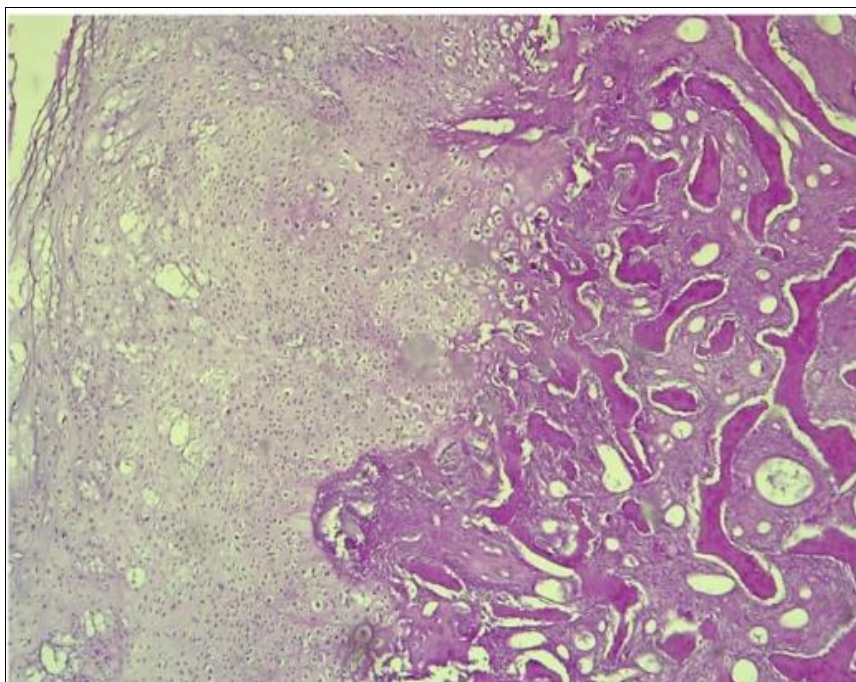


Fig 3: Histopathological slide (H/E stain x10) showing cartilage tissue with an endochondral ossification forming mature bone trabeculae.

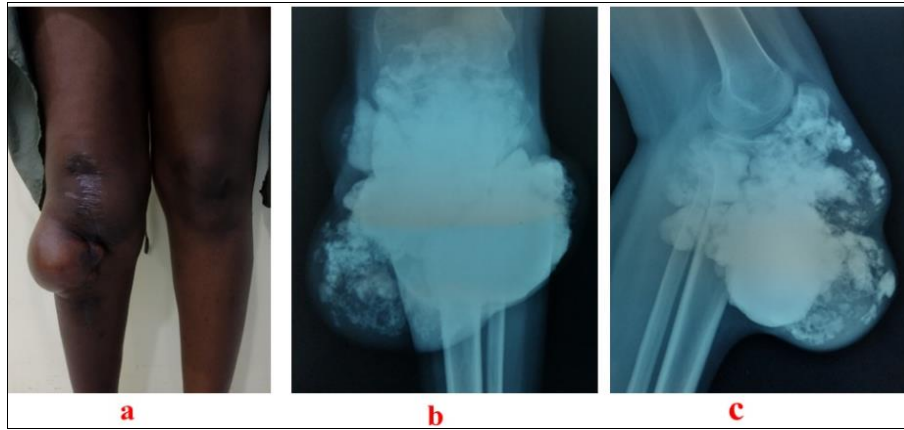


Fig 4: (a) Clinical appearance and (b) X- rays of knee showing the tumour recurrence

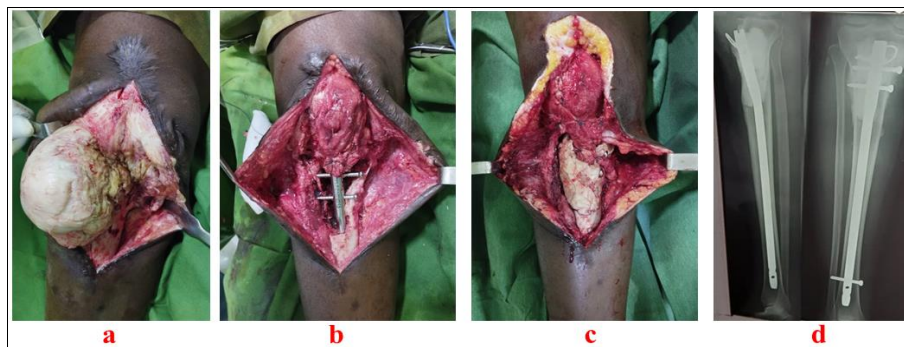


Fig 5: (a) Intraoperative aspect of tumour resection. (b) Resection of the tumour involving the anterior tibial tuberosity, with osteosynthesis using a tibial lock. (c) Filing of the bone defect with biological cement. (d) Postoperative control X-ray showing complete resection of the tumour, biologic cement and locked tibia nail.



Fig 6: At follow-up 2 years after second operation, the clinical appearance (a) and radiographic (b) examination showed no sign of recurrence

Discussion

Para-articular osteochondromas are benign lesions consist of bone and cartilage [2]. There is no sex predilection. The joint knee mass, pain and decreased range of motion of the knee are major symptoms. These symptoms have been evolving for years, with a progressive increase in tumour mass [1, 2]. The mean duration of presenting symptoms was 63.9 months [2]. The patient in our report had the mass evolving for 36 months. However, a delay in onset of 5 months has been reported in the literature, following a minor injury [6]. Pain was presenting in 73% of cases and mass occurred in

91% of cases [2].

The cause remains unknown [2]. Several reports have associated it with minor injuries [7-9]. Evaniew *et al.* [10] reported that only 16% of cases involved antecedent trauma. Our patient had no history of minor or major injuries. Some authors have also suggested that ossification of the infrapatellar fat pad represents the end stage of Hoffa’s disease [2, 11]. Synovial chondromatosis and low-grade chondrosarcoma are pathologies of differential diagnosis. Osteosarcoma must be associated with these conditions. So in some cases, a biopsy must be performed before

excising the tumour ^[1]. In our case, the clinical history, clinical examination and medical imaging examinations findings of the tumor pointed to a benign osteochondroma; therefore, we did not perform a biopsy. However, biopsy is absolutely indicated when a significant diagnostic doubt exists.

Histological findings distinguish para-articular osteochondroma from a various similar osteochondral lesion. Para-articular osteochondromas mainly consist of bony tissue with a cartilaginous tissue ^[12]. In our case, the mass was composed of cartilage and bone tissue on histological examination of the operative specimen. Treatment of tumour is surgical. Excision with arthroscopic technique has been reported ^[11]. However, open excision is the treatment of choice. We performed complete resection in our case. Recurrence after excision has been reported ^[11, 12]. We observed a local recurrence of the tumour in our case.

Conclusion

We report one case of giant para-articular osteochondroma of the knee of which were treated by surgical resection. Postoperative marked by a tumour recurrence. After second surgical intervention, the postoperative course was uneventful. Pain disappeared, however there is a decreased range of motion of the knee.

Consent

Informed consent had been required for this study. It included: a written participation agreement signed by the patient, anonymity within report and confidentiality of personal data.

Conflict of interest

There is no conflict of interest

Authors contribution

KJEK wrote manuscript. AJRA participated in the writing of the discussion, LBY also revised the final form of the manuscript. AANK participated in the discussion, KKK participated in the discussion, gathering data and images from the patient and health record system. MK wrote the figure's description and final form of the manuscript.

References

1. De Maio F, Bisicchia S, Potenza V, Caterini R, Farsetti P. Giant intra-articular extra synovial osteochondroma of the knee: A report of two cases. *Open Orthop J* 2011;5:368-71.
2. Nishimura T, Saku I, Kanda S, Fukushima T, Akiyama T. Para-articular osteochondroma of the infrapatellar fat pad: A report of three cases. *Int J Surg Case Reports*. 2020;69:105-8.
3. Moustamssik I, Rafiqi K, El Hyaoui H, Rafai M, Rahmi M, Garch A. Luxation de la rotule suite à un osteochondrome du condyle interne du genou (A propos d'un cas). *Rev Maroc Chir Orthop Traumatol*. 2014;55:47-9.
4. Guelzim S, Bardouni A. Para-articular chondroma of the knee. *Pan African Med J*. 2015;20:320.
5. Rizzello G, Franceschi F, Meloni MC, Cristi E, Barnaba SA, Rabitti C, *et al.* Para-articular osteochondroma of the knee. *Arthroscopy*. 2007;23(8):910.e1-4.

6. Carmont MR, Davies S, Gey van Pittius D, Rees R. Accelerated para-articular osteochondroma formation within the knee: a case report. *Cases J*. 2008;1(1):6.
7. Maheshwari AV, Jain AK, Dhammi IK. Extraskelatal para-articular osteochondroma of the knee: A case report and tumor overview. *Knee*. 2006;13(5):411-4.
8. Turhan E, Doral MN, Atay AO, Demirel M. A giant extrasynovial osteochondroma in the infrapatellar fat pad: end-stage Hoffa's disease. *Arch Orthop Trauma Surg*. 2008;128(5):515-9.
9. Ogura K, Goto T, Nemoto T, Imanishi J. Para-articular osteochondroma of the infrapatellar fat pad. *J Knee Surg*. 2011;24(3):209-13.
10. Evaniew N, Bayegan D, Popovic S, Parasu N, Ghert M. Infrapatellar fat pad osteochondroma: three cases and a systematic review. *J Knee Surg*. 2015;28(3):229-38.
11. Krebs VE, Parker RD. Arthroscopic resection of an extrasynovial ossifying chondroma of the infrapatellar fat pad: end-stage Hoffa's disease? *Arthroscopy*. 1994;10(3):301-4.
12. Sakai H, Tamai K, Iwamoto A, Saotome K. Para-articular chondroma and osteochondroma of the infrapatellar fat pad: a report of three cases. *Int Orthop*. 1999;23(2):114-7.

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