JOURNAL OF CLINICAL AND HEALTH SCIENCES

CLINICAL QUIZ

JCHS-CQ-01-2024
My Child Has a Hard Mass Over the Thigh

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Case Presentation

A 10-year-old boy was brought to the clinic by his parents, complaining of a palpable, slow growing hard mass over the distal left thigh for the past one year. There were no other swellings present on other parts of the body. His parents were worried since the swelling had increased in size over time. However, the child did not complain of any pain or any local pressure symptoms. He did not recall any obvious trauma to the limb. He did not have any constitutional symptoms. He was an active child and did not have any problems at school.

Clinically, there was a hard round mass over the distal anterior left thigh with a well-defined border, measuring 8 x 8 cm. It was non-mobile and fixed to the underlying bone. The overlying skin was normal with no signs of inflammation. Range of movement of the knee was normal.

Plain radiograph of the left femur was done (Figure 1 a, b).

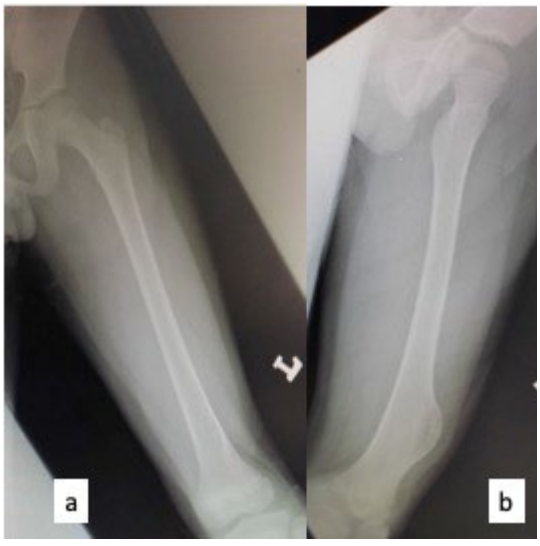

Figure 1 (a) AP view and, (b) Lateral view of plain radiograph of the left femur

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Question:

1. Describe the left femur radiograph.
2. What is the diagnosis?
3. How should you treat this condition?
4. What is the most feared complication of this condition?
5. When is surgery indicated?

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ANSWER TO JCHS-CQ-01-2024

1. This is an AP and lateral view of plain radiograph of the femur. On lateral view, there is exophytic cortical bone lesion at the metaphyseal-diaphyseal junction of the anterior distal femur. The base of the lesion is wide with cortical marrow connection between the lesion and the femur (Figure 2a and b). In AP view, there is an ill-defined oblong lesion over the distal third femur. Otherwise, the lesion does not appear to invade the growth plate on both views.
2. Sessile Solitary Osteochondroma. This diagnosis is based on the clinical history of a child with painless palpable slow growing hard mass in the distal femur with typical x-ray findings as explained above.
3. Initial expectant management followed by consecutive return visits. The follow ups are crucial in monitoring the evidence of malignant transformation.
4. The most feared complication is malignant transformation of osteochondroma to secondary osteochondroma. However, solitary osteochondroma has a good prognosis with less than 1% of patients undergo malignant transformation.
5. Surgical removal of solitary osteochondroma is indicated if the tumour undergoes malignant transformation or brings about pain and functional impairment, either due to restriction of joint movement or neurovascular compression.

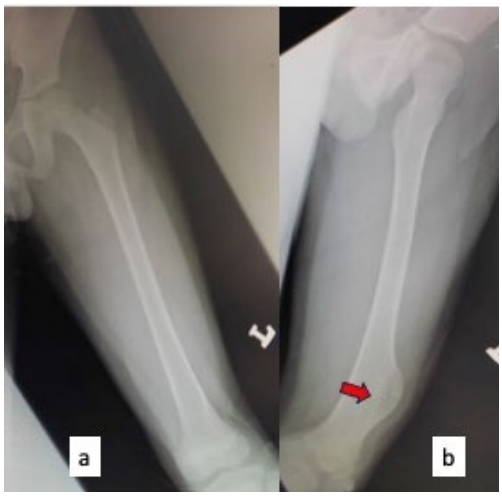

Figure 2 (a) Anteroposterior view, (b) Lateral view of plain radiograph of left femur: Exophytic cortical bone lesion at the metaphyseal-diaphyseal junction of the anterior distal femur with cortical marrow continuity (arrow)

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Discussion

Osteochondroma is a common benign cartilage tumour, manifesting as an exophytic lesion on the outer surface of the bone, occurring in the metaphyseal region of long bones. The lesion can be sessile or pedunculated. Solitary osteochondroma is more common than hereditary multiple exostoses, which is an inherited autosomal dominant genetic disorder [1]. The radiological findings are relatively typical, showing an exophytic lesion with cortical and medullary continuity, protruding from the adjacent bone. In this case, the implantation base is broad (Figure 2), hence the diagnosis of sessile solitary osteochondroma. A plain radiograph is usually sufficient to make a diagnosis.

Currently, close observation with a serial plain radiograph and clinical examination is the cornerstone of treatment [2]. In this case, the tumour is asymptomatic, and surgery is not advisable since the risk of surgery-related problems is higher than that of tumour-related ones [3]. Subsequent investigation with MRI is needed if pain occurs or the tumour expands after skeletal maturity [4]. Although there is no available literature showing the effectiveness of screening, one should think of screening patients periodically every year or every other year [2].

The most dreaded complication of osteochondroma is malignant transformation of the lesion at the cartilage cap, and subsequently progressing to secondary chondrosarcoma [5]. The clinical features of malignant transformations are the new onset of pain near a pre-existing osteochondroma, growth of tumour after skeletal maturity, irregular perimeters, irregular or scattered calcifications, internal lytic zones, erosion of adjoining bones, cartilage cap depth >2 cm in adults or >3 cm in children [1]. Other complications that could occur are mechanical compression to adjacent structures, fracture and bursitis. Occasionally the lesion might impinge on a nerve causing numbness and tingling sensation in the extremity [6]. In some cases, osteochondromas can be found under tendons, generating pain during movements because the tendon might get irritated and snap over the protruded mass [3]. Occasionally, the impingement of the overlying soft tissue may cause the development of bursitis.

In conclusion, solitary osteochondroma is a benign tumour that is mostly asymptomatic, and hence usually discovered incidentally. Although surgical management of osteochondroma is the responsibility of an orthopaedic surgeon, interdisciplinary participation is vital in giving ideal care to the patient. Usually, detection of osteochondroma is by the family physician, either by chance while investigating another illness or while investigating for complaint associated with osteochondroma itself.

Learning Points

- Avoid unnecessary invasive diagnostic procedure since solitary osteochondroma is mainly diagnosed through plain radiograph.
- Osteochondromas are one of common benign bone tumours in childhood, hence any we need to be aware of its existence, clinical features and its typical radiological findings. A prompt diagnosis negates unnecessary anxiety among parents especially on the likelihood of malignancy.
- We need to be aware of clinical features of malignant transformation of osteochondroma and arrange a prompt referral if the need arise.

Conflict of Interest

Authors declare none.

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REFERENCES

1. Tepelenis K, Papathanakos G, Kitsouli A, Troupis T, Barbouti A, Vlachos K, Kanavaros P, Kitsoulis P. Osteochondromas: An updated review of epidemiology, pathogenesis, clinical presentation, radiological features and treatment options. in vivo. 2021; 35(2): 681-91.
2. Bovée JV. Multiple osteochondromas. Orphanet journal of rare diseases. 2008; 3(1): 1-7.
3. Kitsoulis P, Galani V, Stefanaki K, Paraskevas G, Karatzias G, Agnantis NJ, Bai M. Osteochondromas: review of the clinical, radiological and pathological features. In vivo. 2008; 22(5): 633-46.
4. Hameetman L, Bovée JV, Taminiau AH, Kroon HM, Hogendoorn PC. Multiple osteochondromas: clinicopathological and genetic spectrum and suggestions for clinical management. Hereditary Cancer in Clinical Practice. 2004; 2(4): 1-3.
5. Douis H, Saifuddin A. The imaging of cartilaginous bone tumours. I. Benign lesions. Skeletal radiology. 2012; 41(10): 1195-212.
6. Mnif H, Koubaa M, Zrig M, Zammel N, Abid A. Peroneal nerve palsy resulting from fibular head osteochondroma. Orthopedics (Online). 2009; 32(7): 528.

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