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Case Report

Pelvic Osteochondroma as a Differential Diagnosis for Abdominal Mass: A Case Report

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Abstract

Background: Osteochondroma is the most common benign tumor of the bone.
Case Report: In this case, we present a young patient complaining of sensation of a mass in her abdomen since a few weeks ago and abdominal pain, which caused her visit to the clinic. Imaging studies revealed a well-defined lobulated lesion, and pathological examination was correlated with osteochondroma of the iliac bone.
Conclusion: This site for osteochondroma is very rare, and this case was the solitary type.

Keywords: Osteochondroma; Pelvic Neoplasm; Diagnosis

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Background

These lesions are produced by progressive endochondral ossification of a growing cartilaginous capsule. The usual sites of osteochondroma are the distal part of the femur, the proximal part of the tibia, and the humerus. Iliac bone is the rarest site of osteochondroma (1).

Case Report

A 21-year-old woman visited because of the sensation of a mass in her right hypochondriac region three weeks ago. She started feeling pain in that region for three days. The patient did not mention any history of trauma, genitourinary, and gastrointestinal symptoms.

There was a non-mobile stony hard mass on examination, measured approximately 5 cm × 5 cm on the right hypochondriac region. The mass was tender on palpation. Examination of head and neck, chest, and abdomen were otherwise normal.

Radiographic evaluation revealed a well-defined, calcified, lobulated lesion arising from the right iliac fossa (Figure 1).

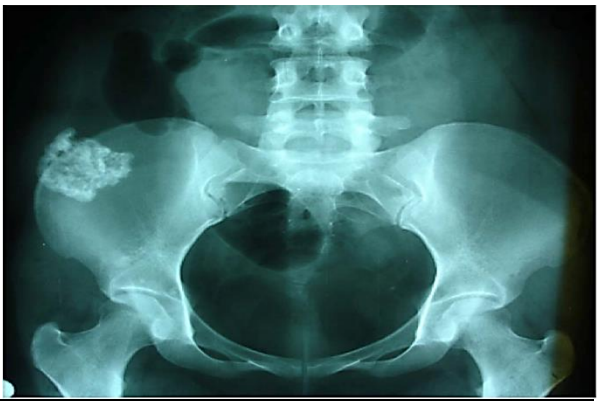

Figure 1. Plain x-ray showing calcified lesion on ala of the ilium

No additional lesion was found on the skeletal survey. The same finding with similar characteristics was visualized in the computerized tomographic evaluation of the right hypochondriac region (Figure 2). There was no pathology on chest radiography and abdominal ultrasonography.

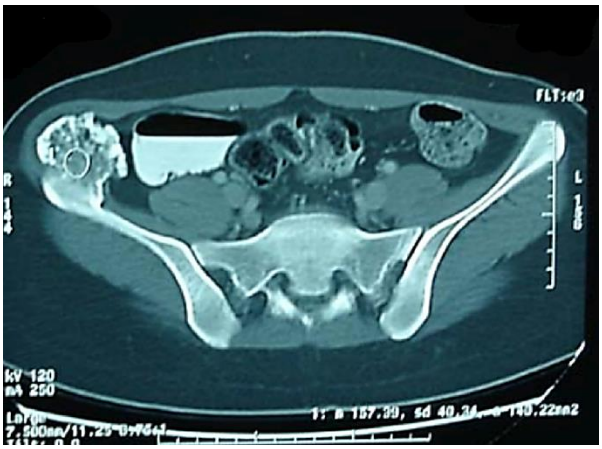

Figure 2. Computed tomography (CT) scan revealed a calcified lobulated lesion, which was arising from the iliac bone.

The patient was scheduled for operation with the diagnosis of a right pelvic bone tumor. Intraoperatively, a lobulated bony mass was seen to originate from the internal aspect of the iliac crest bone without soft tissue involvement. Wide surgical excision and reconstruction of the defect were performed.

Macroscopic examination of the specimen in the pathologic laboratory revealed multiple irregular pieces of tan-brown elastic to hard tissue. The total lesion was measured about 55 mm × 40 mm × 20 mm, with a bony core and irregular surface covered with cartilaginous tissue. After decalcification of the specimen, a rim of

cartilage around the bone was noted. A microscopic study of the specimen showed a benign neoplasm composed of bony trabeculae, cartilage, and marrow covered by fibrous tissue (perichondrium). Most of the tumor was made up of unremarkable mature bony trabeculae and normal bone marrow beneath the mature cartilaginous cap. Additionally, many fragmented striated muscle bundles were seen. Eosinophilic, Periodic acid-Schiff (PAS)-positive inclusions were seen in the cytoplasm. There was no evidence of malignancy (Figure 3).

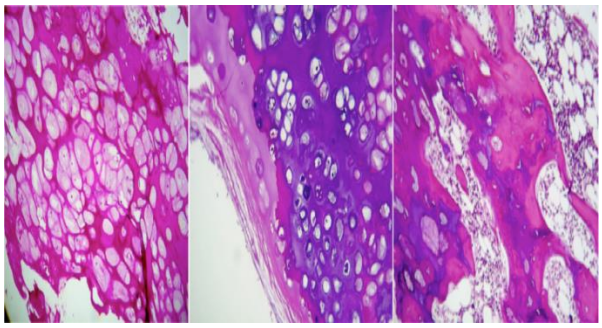

Figure 3. Pathological features of osteochondroma in the patient

Discussion

Osteochondroma is a cartilage-covered exostosis that arises from the surface of a bone. These lesions are produced by progressive endochondral ossification of a growing cartilaginous capsule of a patient with skeletal immaturity. Osteochondromas may occur on any cartilage-forming bone, but they are usually found on the distal part of long bones. The usual sites of osteochondroma are the distal femur, the proximal tibia, and the proximal humerus. They rarely develop on flat bones such as the skull or pelvic bones. Iliac bone is one of the rarest sites of osteochondroma (1, 2).

Since the origin of osteochondroma is mostly the epiphyseal section of the bone, it might stop or slow down by fusion of growth plates occurring due to aging. So, the average age of patients with osteochondroma is 20-30 (2-4).

Osteochondromas of the pelvis are usually deep enough to remain asymptomatic, and they are discovered accidentally on examination or imaging study. Superficial cases of the osteochondroma of the pelvis are usually present as bone masses without pain (3-5). The size and location of the osteochondroma determine the severity of presentation and complications of the tumor. Most tumors are asymptomatic and without complication, but vaso-occlusion and hematuria are seldom present in pelvic osteochondroma. Dangerous consequences of nerve compression such as sudden death and quadriplegia have been reported due to osteochondroma (4-6).

There are two types of osteochondromas: solitary and hereditary multiple exostoses (diaphyseal aclasia). Hereditary multiple exostoses, which often results from an autosomal dominant inheritance, is more likely to transform to malignancy at 10 to 15% versus 1% in solitary osteochondromas (6, 7).

The appropriate surgical approach is determined by the location and size of the tumor. A pre-operative CT scan can measure the size of the cartilaginous cap. The greater size of the cap increases the risk of malignant transformation. A cap greater than 1 cm is more likely to get malignant (1, 7). In this case, the size of the cap was 5 cm. Surgical approach was directed to complete resection and reconstruction of the defect.

In the pathologic study of osteochondroma, there is a cap of cartilage, which is covered by a fibrous membrane, which varied in size and thickness depending on the patient's age and mitotic activity of the tumor. Microscopically, the cells resemble normal hyaline cartilage. Eosinophilic, PAS-positive inclusions may be seen in the neoplasm. The large size of the cap and soft tissue infiltration suggests a malignant tumor. Osteochondromas are a rare differential diagnosis of abdominal pain and also abdominal mass in the literature (5). Abdominal pain, in this case, may be the result of neurologic compromise of solitary large osteochondromas.

Conclusion

In this case, the patient had no family history of hereditary multiple exostoses, and the whole body radiographic study of the case did not reveal any other osteochondromas. These findings suggest that the osteochondroma in this patient was the solitary type.

Conflict of Interest

The authors declare no conflict of interest in this study.

Acknowledgments

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