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CASE REPORT

Extraskkeletal Chondroma in the Popliteal Region: A Case Report

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EXTRASKELETAL chondroma is a rare benign tumor that usually develops in the soft tissue, which commonly occurs in the limbs of adults and generally presents as painless masses without the surrounding tissues involvement. The diagnosis mainly depends on computed tomography, magnetic resonance imaging (MRI) examination, and postoperative pathological examination. This paper reports a case of extraskkeletal chondroma in the popliteal region.

CASE DESCRIPTION

A 55-year-old woman was referred to our hospital who complained of a mass in the left popliteal region. She had suffered from pain for three years and limited mobility in her left leg for six months.

The physical examination showed a palpable, hard, mobile mass with clear boundary in the left popliteal fossa and no palpable lymph nodes. The popliteal area was slightly swollen with the normal local skin temperature. The localized tenderness and skin irritation was observed. She denied radiating pain in the left leg. There was no vascular

murmur. She presented with an aggravated pain with flexion and slight limitation of movement in the left knee.

Laboratory examination revealed the routine blood test, serum alkaline phosphatase level, erythrocyte sedimentation rate, rheumatoid factor, and high-sensitivity C-reactive protein were normal. X ray photograph showed the bone structure in the knee was normal. MRI displayed a cystic lesion in the posterior part of the left knee joint accompanied with effusion, degenerative changes of both the anterior and posterior horns of the medial meniscus, and bone marrow damage (Fig. 1). Therefore, the patient was primarily diagnosed with a mass of undetermined origin in the left popliteal region.

The lesion was fully resected using standard surgical approach under epidural anesthesia. The mass was completely encapsulated with no obvious connection to the peripheral tissues and osseous structure of knee joint or joint capsule, measuring approximately 4.0 cm × 3.7 cm × 3.0 cm (Fig. 2A). The boundary of the specimen was clear; mucoid degeneration and cystic degeneration appeared in the center of lesion (Fig. 2B). Histopathological examination revealed the tumor was composed of mature hyaline cartilage and fibrocartilage with different levels of mucoid and cystic changes. Chondroma cells exhibited polymorphic without nuclear atypia and mitosis (Fig. 2C, 2D). Pathological

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diagnosis was extraskeletal chondroma in the left popliteal region.

After surgery the local deformity disappeared, the pain was greatly released, and flexion and extension function of the knee restored normal. No local recurrence was found in the six-month of postoperative follow-up.

DISCUSSION

Extraskeletal chondroma is a rare benign tumor that predominantly occurs in the soft tissue of the limbs,^{1, 2} accounting for only 1.5% benign soft-tissue tumors. The tumor is usually present as a single, painless mass. Generally, the lesion grows slowly and its size seldom exceeds 3.0 cm in diameter. It is often seen at the ages of 30-60 years with an equal sex distribution,^{3, 4} when the tumor has increased big enough to cause local deformity or intermittent pain. The underlying etiology is unclear. It has been manifested that extraskeletal chondroma might arise from residual embryonal tissue or from undifferentiated mesenchymal stem cells.^{4, 5}

The histopathological examination showed that the extraskeletal chondroma was completely composed of mature hyaline cartilage and fibrocartilage, which had no connection with the bone or periosteum tissues and had different levels of calcification, mucoid and cystic changes. Cellular polymorphism with rare mitotic figures and without atypism is the typical pattern of tumor cells. The peripheral zones of a few lobular cartilages have a high density of spindle-shaped stromal cells, which had no perinuclear halos or lacuna-shaped structures. Immunohistochemically, the tumor cells were positive for S-100 protein and vimentin, but were negative for the epithelial and myoepithelial markers.^{6, 7}

To our knowledge, the mucoid and cystic changes in extraskeletal chondroma have rarely been reported. For our case, the mucoid and cystic changes were considered due to inadequate blood supply to the central tissues, which was probably mistaken as an "abscess" on MRI images.

Though malignant transformation and metastasis does not happen, complete local excision is recommended to treat



Figure 1. Magnetic resonance images of a 55-year-old female with solitary extraskeletal chondroma (arrows) in the left popliteal region. A. T1 weighted sagittal view; B. T2 weighted sagittal view; C. T1 weighted coronary view.

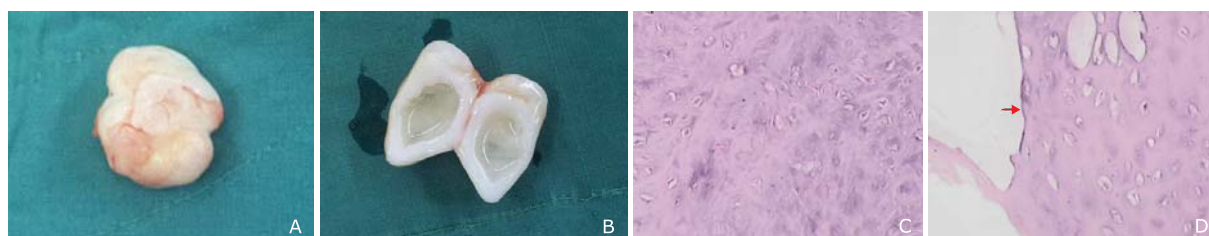


Figure 2. The gross view showed that the size of the tumor was about 4.0 cm × 3.7 cm × 3.0 cm (A). The cut surface showed the cyst cavity in the center of the mass was filled with mucus (B). HE staining revealed the tumor tissue was composed of mature hyaline cartilage and fibrocartilage, with unobvious calcification and different levels of mucoid and cystic degeneration. Chondroma cells exhibited polymorphic without nuclear atypia and mitosis (C); mucoid degeneration was observed in the center of the tumor (arrow, D). ×100

extraskeletal chondromas owing to 18% of local recurrence rate.⁵

REFERENCES

1. Ishii T, Ikeda M, Oka Y. Subungual extraskeletal chondroma with finger nail deformity: case report. *J Hand Surg Am* 2010; 35:296-9.
2. Zlatkin MB, Lander PH, Begin LR, et al. Soft-tissue chondromas. *AJR Am J Roentgenol* 1985; 144:1263-7.
3. Nehete R, Nehete A, Singla S, et al. Soft tissue chondroma of hard palate associated with cleft palate. *Indian J Plast Surg* 2012; 45:550-2.
4. Aslam MB, Haqqani MT. Extraskeletal chondroma of parotid gland. *Histopathology* 2006; 48:465-7.
5. Smida M, Abdenaji W, Douira-Khomsy W, et al. Childhood soft tissue chondroma. Two cases report. *Tunis Med* 2011; 89:379-82.
6. Aslam MB, Haqqani MT. Extraskeletal chondroma of parotid gland. *Histopathology* 2006; 48:465-7.
7. Kostopoulos IS, Daniilidis I, Velegrakis G, et al. Chondroma of the parotid gland. Clinical histologic immunohistochemical findings of a rare case. *Laryngorhinootologie* 1993; 72:261-3.