

# Osteochondroma of the Talus

## - A Report of Two Cases -

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### 거골에 발생한 골연골종 - 2예 보고 -

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An osteochondroma is one of the most common benign bone tumors. The bones of the foot are less commonly involved, and there are only a few case reports of talar osteochondroma. There are no case reports of a talar osteochondroma in Korea. We report two cases of the osteochondroma in the talus.

**Key Words:** Talus, Osteochondroma

An osteochondroma, which is also known as osteocartilaginous exostosis, is the most commonly occurring benign bone neoplasm, representing 42% to 50% of all bone tumors<sup>1,2,4,6</sup>. In one report of a series of 783 osteochondromas, only 15 osteochondromas were encountered in the tarsal region, and 10 of these were in the calcaneus<sup>10</sup>. An osteochondroma in the talus is very rare. We report the diagnosis and treatment of two cases of symptomatic osteochondroma in a rare location at the talus.

### CASE REPORT

#### 1. Case 1

A 36-year-old male presented with a painful mass on his right ankle. The patient first noticed a bean sized swelling on the dorsum of his right

ankle 4 years earlier. The pain was exacerbated by sports activities. There was no history of trauma or other joint problems. The physical examination revealed a firm, non-mobile lump and tenderness over the anteromedial aspect of the ankle.

The range of motion of the right ankle was 5° in dorsiflexion. The dorsiflexion of his right ankle was less than the contralateral side, whereas the plantar flexion had a normal range of motion. The patient complained of pain upon forced dorsiflexion and plantar flexion.

Radiography of the right ankle demonstrated a lobulated mass on the anteromedial part of the talus that was continuous with the cortex and medulla of the talus (Fig. 1). Computed tomography of the right ankle revealed a lobulated osseous mass arising from the talus, measuring

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1.6×2.0×2.5 cm in size. The mass was connected to the medullary cavity of the talus (Fig. 2).

An excision was performed under general anesthesia. After a longitudinal medial incision, the mass was exposed and excised at the base of the stalk. The irregular surfaced mass consisted of a gray-white bony structure with a hard capsule. The pathology findings were consistent with an osteochondroma having the typical finding of a cartilage cap (Fig. 3). The patient was followed up for 20 months without recurrence. The range of motion of his right ankle was normal without pain,

## 2. Case 2

A 35-year-old male was referred to our hospital

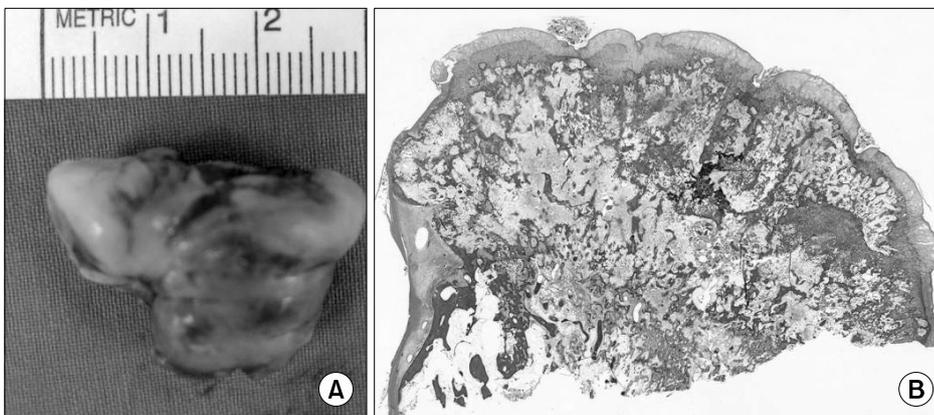
with a gradually progressing painless mass on the medial side of the left ankle. The patient had noticed a bean sized swelling 3 years ago. He felt intermittent pain while running or jogging, and a mechanical block in terms of a limitation of motion. He had no history of a previous injury to his left ankle. The physical examination revealed an egg sized hard lump that was palpated on dorsum of the talonavicular joint area without tenderness. There was neither tenderness nor acute inflammation. The dorsiflexion of the ankle was restricted to 0°, whereas the plantar flexion was normal (40°). The power of dorsiflexion and plantar flexion was normal. There was no neurovascular deficit. Ra-



**Fig. 1.** Radiographs of the right ankle show a mass at the anteromedial part of the talus continuous with the cortex and medulla of the talus.



**Fig. 2.** Computed tomography of the right ankle shows a lobulated osseous mass measuring 1.6×2.0×2.5 cm arising from the talus. (A) Sagittal view, (B) 3-dimensional view.



**Fig. 3.** (A) Excised gross specimen, (B) The pathology finding was consistent with an osteochondroma with the typical findings of a cartilage cap (H&E; ×20).



**Fig. 4.** Radiograph (A) and Computed tomograph (B) of the ankle show a  $1.5 \times 2.3 \times 1.0$  cm sized lobulated mass with a broad based stalk on the anteromedial part of the talus that was connected to medullary cavity of the talus.

diography of the ankle revealed a  $2 \times 2$  cm sized lobulated mass with a broad based stalk on the anteromedial part of the talus, which was connected with medullary cavity of the talus (Fig. 4).

An excisional biopsy was performed under general anesthesia. Using a medial skin incision, the mass was exposed and excised along with the periosteum at the base of the stalk. The irregular surfaced mass consisted of a gray-white bony structure with hard capsule. The pathology examination revealed an overlying cartilaginous cap that was consistent with an osteochondroma.

The patient was followed up for 15 months with no recurrence. The pain during exercise had subsided completely. The dorsiflexion was improved ( $20^\circ$ ) and the range of motion of his left ankle was normal.

## DISCUSSION

An osteochondroma is the most common benign bone tumor and occurs most commonly in the proximal humerus, tibia, and distal femur<sup>8)</sup>. Osteochondromas can occur in any bone that is preformed from cartilage. The most common loca-

tions are the long bones at the metaphyseal region<sup>8)</sup>. It is rarely found in bones of the foot, and is even less common in the talus<sup>1,4,7,9)</sup>. Osteochondromas are usually discovered during the first and second decades of life<sup>4)</sup>. However, an osteochondroma in the talus is usually was discovered in the third to fifth decades<sup>1,4,7,9)</sup> including our cases.

An osteochondroma of the talus was first reported in 1984 by Fuselier et al<sup>4)</sup>. They reported a solitary osteochondroma of the dorsum of the talus in a 22-year-old female presenting with ankle discomfort. They are found 2.0 cm long pedunculated osteochondroma, protruding from the dorsolateral head of the talus with multiple toe deformities.

In 1987, Chioros et al<sup>1)</sup> reported an atypical osteochondroma that originated from the posterior aspect of the talus in a 34-year-old male. In 2003, Erler et al<sup>2)</sup> reported a case of an osteochondroma located on the dorsum of the talus, which is similar to these cases, in 6-year-old boy without other foot deformities. There are a few other reports of osteochondroma in talus<sup>7,9)</sup>.

A solitary osteochondroma is usually asymptomatic. However, an osteochondroma in the talus may represent with variable symptoms, including pain<sup>1)</sup>, ankle swelling<sup>2)</sup>, painless mass<sup>7,9)</sup>, and a limited range of ankle motion<sup>1,4,7)</sup>. This condition can be a spontaneous hemarthrosis of the ankle<sup>5)</sup>.

Pain is usually caused by pressure and friction against the nerves and bones resulting in possible nerve irritation or a block of joint motion<sup>1)</sup>. The mass can be in the form of an intraarticular loose body<sup>6)</sup>, which is accompanied by severe painful limitation of motion. An osteochondroma can occur in the talar origin if it takes the form of an intraarticular loose body. Since an osteochondroma does not originate from the epiphysis of the ankle, it probably originates from the talus. In our cases,

one complained of painful swelling with a limitation of ankle motion, and the other complained of painless swelling with a limitation of ankle motion.

Radiologically, an osteochondroma in the talus can be visualized as a protrusion from the host bone in a pedunculated<sup>2,4,9)</sup> or sessile<sup>1,7)</sup> manner as in the long bone. Both cases were the pedunculated types. Computed tomography of diagnosis of the medullary and cortical continuity between the lesion and talar bone is important for diagnosing an osteochondroma of the talus, as in the other solitary osteochondromas<sup>2,4)</sup>.

The treatment of an asymptomatic osteochondroma of the talus might be just observation. However, surgical excision is a good treatment method for a symptomatic osteochondroma of the talus, as in our cases.

An osteochondroma is rarely found in the ankle but it should be included in a differential diagnosis with a painful or painless lump. An osteochondroma can detach from the stalk and can be found as an intraarticular loose body in an ankle joint. Unlike a simple bony protrusion, an extraperiosteal complete excision is the key to complete eradication and for preventing a recurrence.

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= 국문초록 =

골연골종은 가장 흔한 양성 골종양이지만 족부에는 적게 발생한다. 특히 거골에 발생한 골연골종은 매우 드물며, 우리나라에서는 보고된 바 없다. 이에 거골에 발생한 골연골종 2예를 보고하고자 한다.

색인 단어: 거골, 골연골종