

# Intraneural Ganglion of the Tibial Nerve

## Tibial Sinirin İntranöral Gangliyonu

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### Özet

Tibial sinirin gangliyon kistleri çok nadirdir. Bu çalışmada, bilek ekleminin posteromedial kısmında belirgin bir kitle olan, 24 yaşındaki bir erkek hasta olgusu sunmak istedik. Hasta, ayağının plantar ve medial yüzeyinde aralıklı, hafif ve belirsiz bir uyuşma hissinden bahsetmekteydi. Manyetik rezonans görüntülemesi tarsal tunneldeki kistin varlığını göstermiştir. Cerrahi sırasında, siniri çevreleyen derinin hemen yanında kapsülle çevrili bir kist varlığıyla karşılaştık. Diseksiyon esnasında, kistin intranöral olarak invaze olduğunu tespit ettik. Kist, mikrocerrahi teknikleri kullanılarak, sinirin perinöral ve intrafasiküler olarak diseksiyonu ile başarıyla çıkarıldı. Hasta, cerrahiden sonra semptomlarından kurtuldu.

**Anahtar Kelimeler:** Gangliyon, posterior tibial sinir

### Abstract

Ganglion cysts of tibial nerve is very rare. We present a 24 y/o male with a prominent mass at the posteromedial side of the ankle joint. He experienced an intermittent mild numbness and vague pain at the plantar and medial surface of his foot. Magnetic resonance imaging showed the presence of the cyst within the tarsal tunnel. During surgery, an encapsulated cyst is found just beneath the skin which surrounds the nerve. During dissection, we realized the intraneural invasion of cyst. The cyst was successfully removed by dissecting the nerve perineurally and intrafascicular with microsurgical techniques. The patient was freed from symptoms after surgery.

**Key Words:** Ganglion, posterior tibial nerve

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### Introduction

Intraneural ganglion cysts are mostly seen in peroneal nerve and the most common clinical feature is motor dysfunction followed by pain, sensory loss, and the presence of a palpable mass.<sup>1,2</sup> Although it is common in peroneal nerve, there are a few cases of intratibial nerve ganglion in the literature. By the report of this case, the surgeon should also consider intraneural ganglion cyst for the masses in tibial nerve.

## Case

A 24 y/o male, a farmer, noted a swelling at the posteromedial side of his ankle joint. His complaints were numbness on the plantar and medial surface of his foot. He expressed his symptoms as intermittent and mild. He has been aware of the existence of the mass for one year. He had no history of significant trauma.

On physical examination, there was no muscle atrophy. There was not any hypoesthesia at the foot or ankle. There was a round, firm, movable, painless mass at the posteromedial aspect of the ankle joint. The Tinel sign was negative.

Magnetic resonance imaging showed the presence of lobulated cyst within the tarsal tunnel. The mass showed uniform low signal density on T1-weighted images and high signal intensity on T2-weighted images. Size of the mass was 4.25x 4.0x 1.50 cm<sup>3</sup>.

**Operative Technique:** A curved skin incision was made over the tarsal tunnel. During surgery, an encapsulated cyst was found just beneath the skin which surrounded the nerve. During dissection, we realized intraneural invasion of the cyst (Figure 1). The cyst was successfully removed by dissecting the nerve perineurally and intra-fascicular with microsurgical techniques. The patient was freed from symptoms after surgery.

## Discussion

Scherman et al reported a case of intraneural ganglion of common peroneal nerve in a 9-year-old boy<sup>1</sup>. As he notes from English literature, intraneural ganglion is mostly seen in peroneal nerve and the most common clinical feature is motor dysfunction (followed by pain, sensory loss, and the presence of a palpable mass). He also notes a significant male predominance.

Fujita et al reported two cases of tarsal tunnel syndrome caused by epineural ganglion of the posterior tibial nerve<sup>3</sup>. Boyer et al also reported a similar case of tarsal tunnel syndrome<sup>4</sup>. These reports demonstrated by the tumor of the tibial nerve may lead to tarsal tunnel syndrome. Our case has no symptoms of tarsal tunnel syndrome.

Lastly, Gosk et al reported a case report of intraneural ganglion of the tibial nerve<sup>5</sup>. Neurological motor and sensory deficits were observed neither in the preoperative nor in the postoperative period, similar to our case.

As we have experienced, the location of ganglion is important for surgical treatment, because excision of the epineural ganglions is easier than complete resection of the intraneural cysts without any damage to the nerve fibers. Fortunately, our patient was free of symptoms after surgery with microsurgical techniques. The surgeon should know and use microsurgical techniques for the operation of intraneural ganglions.



Figure 1. Intraoperative photograph of intraneural ganglion cyst of the posterior tibial nerve

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