Intramuscular Cavernous Hemangioma in Ankle: Treatment with Tendon Transfer: Case Report

Ayak Bileğinde İntramusküler Kavernöz Hemangiom: Tendon Transferli Tedavisi

Ali Vefa ÖZCAN,[a]
Emre BOYSAN,[b]
Semih AKKAYA,[c]
Fırat DURNA,[a]
Ferda BİR[d]

[a]Department of Cardiovascular Surgery,
[c]Department of Orthopedics and Traumatology,
[d]Medical Pathology
Pamukkale University Faculty of Medicine, Denizli,
[b]Clinic of Cardiovascular Surgery, Çankaya Hospital, Ankara

Geliş Tarihi/*Received:* 30.11.2012
Kabul Tarihi/*Accepted:* 15.02.2013

Yazışma Adresi/*Correspondence:*
Ali Vefa ÖZCAN
Pamukkale University Faculty of Medicine, Department of Cardiovascular Surgery, Denizli,
TÜRKİYE/TURKEY
vefaozcan@yahoo.com

ABSTRACT Hemangioma is a benign vascular tumor and generally diagnosed in childhood. It rarely presents in young adults beyond 12 years of age. Hemangioma can occur anywhere in the body but intramuscular hemangioma accounts for only 0.8% of all hemangiomas. We present a case of a 32-year-old woman with intramuscular cavernous hemangioma in her right ankle. We excised the tumor in total including flexor digitorum longus muscle and transferred the tendon of flexor hallucis longus as a substitute. The result was successful.

Key Words: Intramuscular hemangioma; vascular tumor; tendon transfer

ÖZET Hemangiom genellikle çocukluk çağında karşılaşılan benign bir vasküler tümördür. On iki yaş üstü erişkinlerde nadir görülür. Hemangiomlar vücudun herhangi bir yerinde görülebilir ve bunların %0,8'i intramusküler seyirlidir. Biz sağ ayak bileğinde intramusküler kavernöz hemangiomu olan, 32 yaşında bir kadın olguyu sunduk. Flexor digitorum longus kası ile birlikte tümörü tamamen çıkarttık ve flexor hallucis longusun tendonunu transfer ettik. Sonuç başarılıydı.

Anahtar Kelimeler: İntramusküler hemangiom; vasküler tümör; tendon transferi

Damar Cer Derg 2013;22(1):19-21

Hemangiomas are one of the most common benign soft tissue tumors of infancy and childhood.[1] Typically, these lesions exhibit a period of rapid growth in the first 6 months of life. The proliferative phase is generally followed by spontaneous, gradual involution beginning at about 1 year of age and resolution continues by the age 7 of years in 95% of patients.[2] The etiology is unclear but possibly congenital in origin. They are benign neoplasms demonstrating endothelial proliferation without malignant transformation in spite of their vascular nature.[1] Hemangiomas can occur anywhere in the body. They commonly occur in the skin or subcutaneous tissues followed by the deep tissues, occasionally are intramuscular and rarely within bone. They are generally isolated lesions but in 30% of cases they are multiple and females are more commonly affected than males.[3]

CASE REPORT

A 32-year-old female admitted to our clinic with a 6-month history of gradually increasing right ankle pain and swelling without a history of trauma.

doi: 10.9739/uvcd.2012-32945

There past medical history was unremarkable. Physical examination revealed a diffuse soft tissue swelling at the posteromedial aspect of the ankle. There was no skin changes. The swelling was tender on palpation, with no palpable thrill or audible murmur. Neurovascular examination was normal, and no palpable femoral lymph nodes were present. Conventional radiography revealed soft tissue swelling without any phlebolith or periosteal reaction. Magnetic resonance imaging (MRI) showed an hourglass shaped lobulated soft tissue mass at the posteromedial aspect of the ankle (Figure 1). This mass originated from flexor digitorum longus according to the MRI findings.

The patient underwent surgery under general anesthesia and a highly vascular soft tissue mass localized between one thirds of distal tibia and achilles tendon, which lied towards the palmar arc via the inferior of medial malleolus, within the flexor digitorum longus was observed (Figure 2). It was impossible to dissect flexor digitorum longus free from tumor, so we decided to excise the tumor with flexor digitorum longus. The tumor was excised totally with flexor digitorum longus muscle without excising its tendon, which was not involved with the tumor (Figure 3). After that, flexor hallucis longus tendon was splitted and transferred to flexor digitorum longus tendon. The vascular structures including arterior tibialis posterior artery were not invaded by the tumor. Regular use of vessel ligation and bipolar diathermy was performed to control bleeding during the operation. Postoperative recovery was uneventful and the active range of motion remained normal. The patient has been on regular follow-up for the last six months and shows no evidence of recurrence.

Histopathological examination showed large, dilated, blood-filled spaces, often with fibrotic walls. The tumor consisted of elaborately interanostomosing vascular spaces. The lining endothelium was flattened and lacked atypia (Figure 4). All these were suggestive of a cavernous hemangioma.

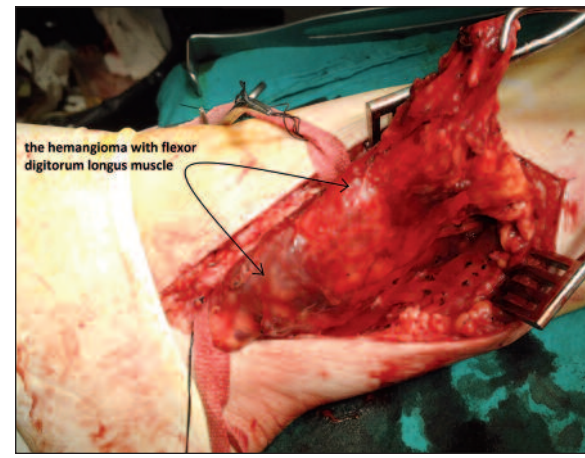

FIGURE 2: Hemangioma localized between one third of distal tibia and achilles tendon which lied towards the palmar arc via the inferior of medial malleolus within the flexor digitorum longus.

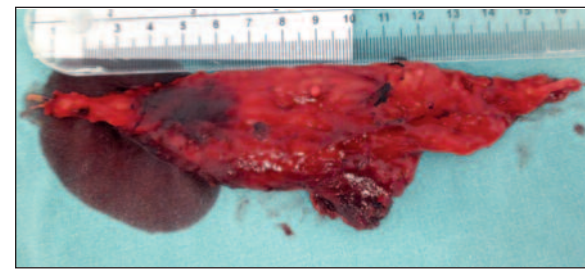

FIGURE 3: Hemangioma excised totally with flexor digitorum longus muscle without excising its tendon.

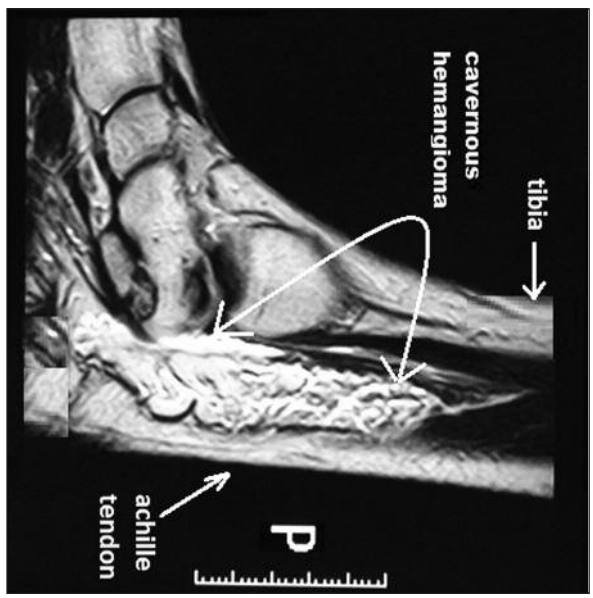

FIGURE 1: Magnetic resonance imaging showed an hourglass lobulated soft tissue mass in the posteromedial aspect of the right ankle.

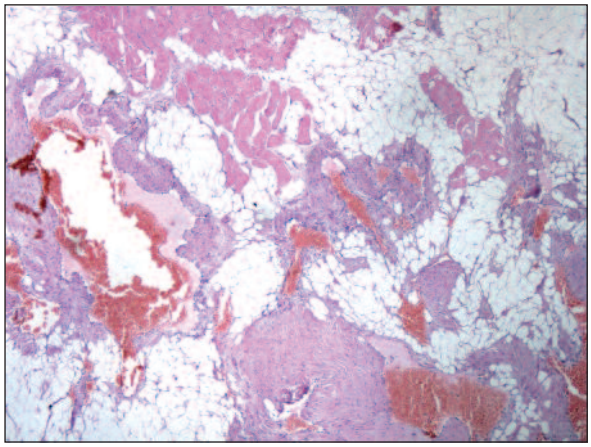

FIGURE 4: Low power view of cavernous hemangioma consist of large, gaping vascular lakes that replace the skeletal muscle fibres.

DISCUSSION

Hemangioma is a benign vascular tumor and generally diagnosed in the childhood. This pathology frequently shows regression within the first decade of life, but it rarely presents in young adults after 12 years of age. Intramuscular hemangiomas account for 0.8% of all hemangiomas.[4] Clinically they manifest with a mass without any diagnostic features. Pain is the cardinal symptom in 60% of the cases, with the lower extremity being the most common site of involvement. The quadriceps is the most frequently affected muscle.[5] In our case, flexor digitorum longus was the affected muscle, which was a very rare localization according to our literature review.

Plain radiographs of soft tissue hemangioma usually shows only a non-specific soft tissue mass and sometimes periosteal reaction adjacent to the hemangioma mimicking osteomylitis or bone a tumor.[5] MRI is important for further diagnosis of the mass and extent of the soft tissue hemangioma. On T1-weighted images, a hemangioma appears as a low-to-intermediate signal intensity mass with peripheral high signal intensity due to fat overgrowth. On T2-weighted images, it shows areas of high signal intensity due to vascular tissue and intermediate signal intensity due to fat.[2] Angiography should be considered if MRI has not provided sufficient information about the relationship between the tumor and a neurovascular bundle.[7]

It is generally agreed that intramuscular cavernous hemangiomas do not undergo spontaneous regression and may be locally destructive because of the pressure exerted to neighboring structures. Definitive treatment of this condition is surgical excision. Steroids, chemotherapy and radiotherapy are not effective in treatment of intramuscular hemangiomas.[6] The recurrence is generally due to an incomplete excision.[4] In order to prevent recurrence, we preferred excision of flexor digitorum longus muscle since we could not dissect hemangioma free from it. We used flexor hallucis longus tendon for replacement and the result was successful.

As a result, intramuscular hemangiomas should be included in differential diagnosis of localized pain and swelling. Once diagnosed, they must be surgically removed for successful cure. Surgeons should not avoid extensive excisions because the recurrences mostly caused by incomplete excisions.

Conflict of Interest

Authors declared no conflict of interest or financial support.

REFERENCES

1. Allen PW, Enzinger FM. Hemangioma of skeletal muscle. An analysis of 89 cases. Cancer 1972;29(1):8-22.
2. Mulliken JB, Glowacki J. Hemangiomas and vascular malformations in infants and children: a classification based on endothelial charactersitics. Plast Reconstr Surg 1982;69(3):412-22.
3. Beham A, Fletcher CD. Intramuscular angioma: a clinicopathological analysis of 74 cases. Histopathology 1991;18(1): 53-9.
4. Patten DK, Wani Z, Kamineni S. Intramuscular cavernouse haemangioma of the triceps. Int J Surg Case Rep 2011;2(6):86-9.
5. Buetow PC, Kransdorf MJ, Moser RP Jr, Jelinek JS, Berrey BH. Radiologic appearance of intramuscular hemangioma with emphasis on MR imaging. AJR Am J Roentgenol 1990;154(3):563-7.
6. Melman L, Johnson FE. Intramuscular cavernouse hemangioma. Am J Surg 2008; 195(6):816-7.
7. McNeill TW, Chan GE, Capek V, Ray RD. The value of angiography in the surgical management of deep hemangiomas. Clin Orthop Relat Res 1974;(101):176-81.