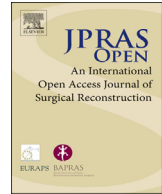




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Case report

Successful reconstruction after radical resection of arteriovenous malformation of the finger and toe using microsurgery

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ABSTRACT

This report presents two cases of arteriovenous malformation of the finger and toe. In case 1, a diffuse arteriovenous malformation of the second toe was resected completely. As a result of radical resection, blood circulation to the second toe was ablated. To preserve the second toe, vein grafting from the forearm region was performed using a microsurgical technique. Using this procedure, complete preservation of the second toe was performed. In case 2, a diffuse arteriovenous malformation of the middle finger was resected completely and successful reconstruction was performed using a sensate free radial forearm flap transfer. One year after the operation, there has been no recurrence of the disease, and the functional result was acceptable. Radical excision for the arteriovenous malformation was recommended to avoid the recurrence of the disease. We believe that the microsurgical technique, including free flap transfer and vein grafting, enables radical excision and decreases postoperative morbidity.

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Introduction

Arteriovenous malformations of the fingers and toes are one of the most challenging problems for reconstructive surgeons. Although they are benign diseases, radical excision for an arteriovenous malformation is important to avoid recurrence of this disease, and surgical treatment may be necessary to control the disease.¹ Therefore, amputation is sometimes unavoidable if the arteriovenous malformation of the fingers or toes invaded diffusely. In this report, two cases of arteriovenous malformation of the finger and toe were presented. Radical excision followed by reconstructive procedures using vein grafting and free flap transfer using the microsurgical technique was performed. Using these procedures, the disease was resected completely, the affected finger and toe were preserved and functional reconstruction was achieved in both patients.

Case 1

In 2011, a 38-year-old female presented to our clinic with an arteriovenous malformation in her right second toe (Figure 1a). Three years previously, the patient suffered a press injury after dropping a heavy rock on her right foot. One year after the injury, the patient had pain in her left foot. Doppler ultrasonography revealed an arteriovenous malformation in her right toe. The MRI study revealed an arteriovenous malformation in the subcutaneous region and the bone and tendon tissue were intact (Figure 1b). Angiography showed that the arteriovenous malformation occurred from the right dorsal arteries (Figure 1c,d).

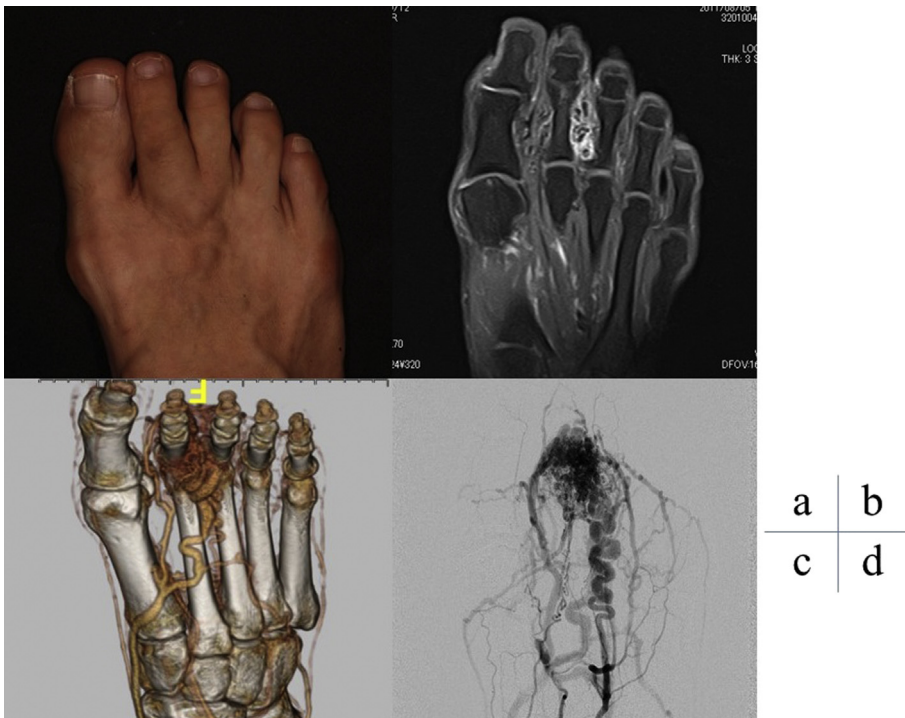


Figure 1. a: The patient presented to our clinic with an arteriovenous malformation in her right foot. b: The T1-weighted image on MRI revealed an arteriovenous malformation in the subcutaneous layer and the bone and tendon tissues were intact. c: CT angiography showed the arteriovenous malformation occurred from the dorsal artery. d: Angiography showed the same result of CT angiography. It affected the digital artery of the second toe.

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