

Microsurgical Reconstruction of Vascular Malformations

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Serious complications have been frequently observed after surgical approach in large or extensive venous malformation (VM), lymphatic malformation (LM) or extensive arteriovenous malformation (AVM). A large or deep defect might be caused by radical resection of the lesion and its ischemic bed could stimulate the reactivation of remnant lesion or aggravate recurrence of the lesion. Sometimes, destruction of normal structure was indispensable such as lip or ear, and important structures such as facial nerve or feeding vessel might be exposed with radical resection of the lesion. Furthermore, normal vascular patency could be sacrificed during the operation, especially in the lesion of extremities. To prevent these sequelae, microsurgical reconstruction is quite recommendable for the reconstruction of normal structure or resurfacing the defect.

Surgical treatments of 79 cases of large or extensive vascular malformations have been performed ; VM(42), LM (17), AVM (9), and other extensive or combined vascular malformations (11). Microsurgical reconstruction has been applied in 52 cases for the reconstruction of the defect after radical resection of the lesion such as, vein graft for vascular patency, free flap reconstruction for filling defect, free flap for vascular rebuilding, resurfacing with free flap for cover-

ing the important structure exposed and so on. These treatment modalities were compared with other conventional treatments of 27 cases including the resection only without any microsurgical reconstruction. As a result, prominent decrease of recurrence rate was observed in the group with microsurgical reconstruction, on the contrary, the other group without microsurgical reconstruction showed various postoperative problems such as recurrence, pain, deformity, leakage of seroma, and functional problems.

Accurate diagnosis of vascular malformations is quite important for their complete remission. Later recurrence would be expected in incomplete resection or radical resection only in the treatment of large or extensive AVM, LM, and VM because insufficient resection can stimulate the remnant lesion to activate new ischemic bed and hemodynamic alteration. However, if the lesion or defect would be reconstructed with well vascularized tissues such as free flap, the bed and peripheral dormant lesion can be subsided in time. Furthermore, more challengeable operation can be planned because the coverage by microsurgical reconstruction would be available in any defect after radical or sufficient resection of the vascular lesion, and the additional well vascularized tissue in the flap would prevent the recurrence.



Fig. 1. Remission of remnant lesion after microsurgical reconstruction in venous malformation (a.,b) and lymphatic malformation (c, d).