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Features of microsurgical anastomoses in difficult cases of the condition of the recipient vessels (POAD, infection and trauma)

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Background/Aims: Microsurgical anastomoses of the atherosclerotic, inflammatory/postinflammatory, and traumatic/posttraumatic altered recipient vessels in the reconstruction area are difficult, have a high complication rate, and are associated with increased flap loss rates and limited alternatives of reconstruction. Method: The use of venous interponats (interposition vein graft) is an established technique in vascular surgery. Also, the end-to-end anastomoses of sclerotic vessels benefit from a venous interponate as a "T-piece"("T-shaped" anastomosis to the connection vessel) or a venous patch with integrated end-to-side outlet of a vein. An alternative to venous interponate is an arterial "T-piece" of the flap artery or a "T-shaped" flap artery for anastomosis, which supports the terminal flow path and blood supply to the local and distal anatomical recipient regions. Results: Reduction/avoidance of the risk of thrombosis and revisions of microanastomoses, improvement of the patency of anastomosis in "problematic" arteries (POAD, infection, trauma) improvement of venous outflow with optimization of the blood circulation of the free flap and ensuring the success of the reconstructive microsurgical procedure in complex clinical cases. The use of a venous interponate (interpositional venous shunt) or a "T-shaped" flap artery and vein depends on the type of free flap. Conclusion: In patients, who suffer from systemic sclerosis, pronounced post-traumatic vascular changes, scarring and for whom no alternative possibilities of reconstruction are possible, it is essential to optimize a priori the often last possibility of reconstruction, which often means the preservation of a lower extremity. In such circumstances the loss of a microsurgical flap is usually equivalent to the loss of a limb.