Effect of fibrin sealant in positioning and stabilizing microvascular pedicle: A comparative study.

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Abstract:

Introduction: Fibrin sealants have had applications in hemostasis, cohesion, and promotion of healing in plastic surgery. In this article, we review cases where fibrin sealant was used to stabilize microvascular pedicles and compared with previous free flaps performed without fibrin sealant. Methods: Between 2008 and 2010, 62 consecutive patients underwent free tissue transfer for reconstruction; this involved 33 latissimus dorsi perforator flaps, 14 thoracodorsal artery perforator flaps, 9 latissimus dorsi myocutaneous flaps, 3 lateral thoracic artery perforator flaps, and 3 transverse rectus abdominis myocutaneous flaps, used in head and neck reconstruction, lower limb reconstructions, breast reconstructions, and facial palsy reconstruction. Following microvascular anastomosis, the microvascular pedicles were placed in the optimal position, and fibrin sealant was used to fix and stabilize them. The complications, such as venous thrombosis, arterial thrombosis, hematoma, and vascular pedicle kinking, were compared with that of 672 previous free flaps without fibrin sealant for stabilizing microvascular pedicles. Results: Among the 62 free tissue transfers using fibrin sealant, there was only one complication involving flap failure (1.6%), in this case due to venous thrombosis. Analysis of 672 free flaps performed without application of fibrin sealant revealed 24 complications (3.6%), due to 3 venous thrombosis, 1 arterial thrombosis, 4 vascular pedicel compression due to hematoma, and 16 pedicle kinking. However, the comparison of complications between the free flap using fibrin sealant and the free flap without fibrin sealant were not statistically significant (P=0.65). Conclusions: Fibrin sealant can be used to prevent vascular kinking and to position anastomosed vessels after successful micro-anastomosis and allow the

reconstructive surgeon to overcome challenging situations of vascular pedicle related complications.