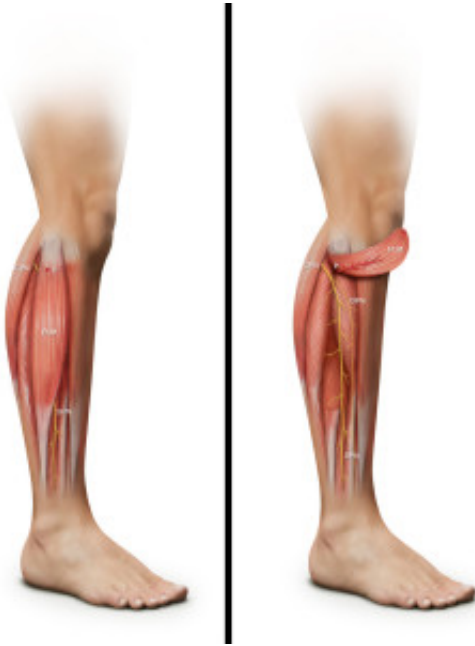


Inventing an new flap for small to medium-sized defects of the knee



Schematic operation technique. Abb.: P=Perforator/blood vessel CPN= Common Peroneal Nerv SPN= Superficial Peroneal Nerv DPN= Deep peroneal Nerv PLM= Peroneus Longus Muscle

Coverage of soft tissue defects of the knee due to multiple operations, trauma and infection remains a surgical challenge. Often these defects are repaired using free tissue transfer. The aim of the current study was to find an easy and reliable local method of repair for small to medium-sized defects. For this propose the author first developed an operation procedure in a cadaver study by using a proximally-based long peroneal muscle turnover flap (LPTF). We found an average cadaver flap size of 4.7 cm by 15.8 cm allowing to reach of all knee joint areas and the flap was consistently based on a sufficient (2 mm diameter average) proximal arterial branch of the anterior tibial artery. Proximally-based LPTF's were harvested and transposed into same-size created defects in 5 cadavers. Donor-sites were closed without tension. After optimizing the technique we successfully transferred this new method into clinical practice with an extra split-thickness skin graft to cover the flap in 2 patients with defects secondary to total knee replacement revisions. Application of the flap in these two patients resulted in good functional outcome. In conclusion is the proximally-based LPTF is a new option for reconstruction of knee defects and should be added to the reconstructive surgeon's armamentarium of pedicled flaps, providing short operating time and promising clinical outcome.

Till Wagner

Radboud university medical center Nijmegen (Radboudumc), the Netherlands

Publication

[The proximally based long peroneal muscle turnover flap: A novel salvage flap for small to medium-sized defects of the knee.](#)

Wagner T, Hupkens P, Slater NJ, Ulrich DJ

J Plast Reconstr Aesthet Surg. 2015 Nov 25