

Lingyun Xiong

Dr. Med.

## **Mikrochirurgische Rekonstruktion der unteren Extremität: Optimierung der klinischen Versorgungsqualität**

Fach/Einrichtung: Chirurgie

Doktorvater: Priv.-Doz. Dr. med. Christoph Hirche

The meta – analysis has shown that microsurgical reconstruction of soft tissue defects in the lower extremity reconstruction could be regarded as a safe and reliable procedure with evidences from this meta-analysis of 1397 flaps since 2000. Additionally, more standardized reports of perioperative parameters and clinical outcomes are needed for further evaluations in the future.

The section of general retrospective outcome study on 761 free flaps to the lower extremity is, to my best knowledge, one of the largest single center studies worldwide. Results of this part further confirmed the clinical performance and safety of this surgical technique as well as provided relatively high quality original evidence of free flap transfer in the reconstruction of lower extremity soft tissue defects.

The section of comparative study on patients  $\geq 75$  years old provided evidences of microsurgical free flap transfer in the lower extremity of patients of advanced age with a relatively high cut – off point. Relatively satisfactory postoperative surgical outcomes were achieved by us. In addition to conclusions of previous studies that mainly focused on other body regions, our results underlined a higher risk of wound infection and a higher rate of subsequent amputation in the lower extremity.

The section of single cohort study on surgical strategy in the situation of total failure of a first free flap revealed that the postoperative failure of a primary free flap in the lower extremity could probably not be a contraindication of a secondary free flap transfer. However, intraoperative loss of free flap could be a significant alert of further microsurgery. Delayed pedicled regional flap may provide relatively reliable coverage if primary and secondary free flaps both failed.

The section of comparative study on primary and revision application of interposition vein grafting suggested that this technique was safe in both primary microsurgical reconstructions and revision surgeries of vascular complications to achieve soft tissue coverage in complex defects of the lower extremity, despite that more subsequent vascular re – explorations may be needed in cases of revision surgery for a good final outcome. Additionally, there could be a higher risk of partial necrosis in cases of revision surgery.

The section of study on preservation of exposed osteosynthesis material in lower extremity revealed that the fasciocutaneous free flap could achieve comparable results to the muscle free flap. A through going wound preparation could be necessary to a good surgical outcome. Microvascular complications could be flap – threaten in addition to a high risk of infection.