Incidence and time of intraoperative vascular complications in head and neck microsurgery.

Abstract:
Vascular occlusion is still the main reason for flap loss and occurs mostly within the first hours after performing anastomoses. Many surgeons still prefer to perform reconstruction and close the defect before starting to anastomose. The aim of this investigation was to find out if detection of early vascular occlusion is facilitated with a prolonged observation period. Between January 2000 and August of 2006, 350 consecutive free flap transfers for reconstruction in maxillofacial surgery were analyzed. In all flaps vascular anastomoses were performed prior to definite flap insertion. The flaps were controlled continuously during soft tissue or bony reconstruction until final wound closure at the neck. Complete operation time, ischemia time of the flap, and time from reperfusion to wound closure (direct pedicle observation time) were registered for each flap. In 350 flaps (138 radial forearm, 94 fibular, 53 ALT, 23 DCIA, 26 soleus perforator, 9 lateral arm, 5 lat. dorsi, and 2 scapular), operation time in average was 8.5 h, ischemia time varied between 78 and 139 min (average 104 min), and direct pedicle observation time of the flaps was 144 min in average (93-192 min). Four arteries and 2 veins showed immediate failure within 5 min after clamp removal, 10 arteries and 6 veins developed thromboses during the direct pedicle observation time. Out of these 16 vascular complications, 15 developed later than 15 min, 7 of them later than 30 min,
and 2 of them later than 45 min. The overall complication rate including secondary revision of the pedicle was 16.8%, and an overall flap survival rate resulted in 95.4%. We conclude that microvascular anastomoses should be controlled for at least 45 min before definite wound closure. By performing anastomoses first and flap insertion second, this can be easily warranted.