In conclusion, an improved understanding of the vascular architecture within the temporalis muscle complements the anatomical basis for designing the flap. This study was supported by Hong Kong University Research Grant 335/253/0009.

39. Versatility of Galeal Flaps in Maxillofacial Reconstruction

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This paper is intended to present the versatility of the galeal flap in reconstructive maxillofacial surgery and to describe the surgical technique and discuss indications, advantages and drawbacks.

The galeal flap was used in 50 patients for reconstruction of congenital facial deformities (14), intraoral defects after ablative surgery for oral cancer (13), trauma cases (19) and defects of scalp and forehead after excision of malignant tumours (4). The flap was pedicled either to the superficial temporal, posterior auricular or occipital vessels. Depending on the recipient site requirements the flap was used as a galeoperiosteal, galeoosteoperiosteal and galeal skin island flap. When tissue bulk was needed, the flap was folded into to or three layers. A full thickness galeoosteoperiosteal flap was used for mandibular reconstruction and the outer cortex flap for reconstruction of aplastic zygomas or reconstruction of the orbital floor in Treacher-Collins syndrome orbitals. For intraoral reconstruction, the zygomatic arch was cut and swung laterally to facilitate insertion of the flap into the mouth. The flap epithelialized within 2–3 weeks when brought into the mouth. The flap failed in 4 cases for unknown reasons. Advantages of the use of this flap include low donor site morbidity, accessibility (one operative field), reliability and versatility. On the other hand it proved to be a time consuming procedure. Based on our experience and the results achieved, the galeal flap can be recommended as a useful means for reconstructive oral and maxillofacial surgery.

40. Improvement of Versatility of the Temporal Muscle and Fascial Flaps in Maxillofacial Reconstructive Surgery

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The temporal muscle flap can be used for repair of a variety of defects in the maxillofacial region. It is known that the degree of transoral advancement rotation is limited. Mandibular reconstruction in combination with the temporal muscle is usually possible in the body and ramus region. Reconstruction of the symphyseal area can hardly be achieved using the temporal muscle/fascial flap. In order to improve the versatility of the flap cadaver dissections and animal experiments were performed. By maximum dissection of the muscle and by removal of all connections to the skull base and the masseter muscle, the arci of rotation can be improved.

Between 1988 and 1993, 37 patients – ages ranging from 25 to 85 years – underwent reconstruction using a temporal muscle flap; two for obliterating the orbital cavity following exenteration and 35 for reconstruction of intraoral defects. Most of the patients were primarily and secondarily reconstructed following tumour resection, in two patients because of defects related to trauma and in 8 cases for radio-osteomyelitis.

Eleven patients had reconstruction of the mandible with vascularized full thickness calvarial bone or with a free full thickness calvarial bone flap together with a temporal muscle flap using the 'wrap around' technique.

The anatomy, surgical technique, indications and results will be presented and representative cases shown.

41. Functional Reconstruction with Trapezius Osteomyocutaneous Flaps and Dental Implants in Patients with Advanced Oral Cancer

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394 patients with advanced oral cancer have been operated in our service during the last 14 years. In 63 patients mandibular and intraoral soft tissue was resected and reconstructed primarily using the trapezius osteomyocutaneous flap (TOMCF) as described by Demergasso. For the past 2.5 years we have inserted endosseous implants in the bone grafts. In 18 patients they were placed primarily and in 6 they were placed secondarily. We have placed 155 endosseous implants, 78 were placed in the bone graft and 41 in the remaining mandible, 36 were placed in the maxilla of edentulous patients in order to achieve a more functional prothesis.

We have done the second phase operation 6 month after the operation in non-irradiated patients and 6 months after radiotherapy in irradiated patients.

In old reconstructed cases where implants were placed secondarily the second phase operation was done at least 8 months after radiotherapy. We have 17 patients that have completed the treatment. We will present the results with these implants and our experiences with this kind of reconstruction.

The TOMCF has proved to be an excellent way to reconstruct the mandible and intraoral soft tissue in these patients. With the use of endosseous implants an even better functional and aesthetic reconstruction can be offered to our patients.

42. Reconstruction of the Maxilla after Ablative Surgery

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Reconstruction of the maxilla after tumor resection still presents a challenge to the surgeon. In the past prosthetic