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The Trapezius Myocutaneous Flap in complex Craniofacial Reconstruction

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Abstract **Case Report**

Reconstruction of complex craniofacial defects remains challenging, particularly when extensive tissue loss or exposure of critical structures is present. The trapezius myocutaneous flap offers a versatile regional option, providing well-vascularized tissue and a broad arc of rotation. We report two cases illustrating its reconstructive potential. The first involved a 54-year-old man who developed an extensive occipital defect with exposed dura mater following resection of a squamous cell carcinoma. The second involved a 58-year-old man with a full-thickness left cheek defect following resection of a basal cell carcinoma, requiring salvage reconstruction. Both defects were reconstructed using a trapezius myocutaneous flap at Moulay Ismail Military Hospital. These cases highlight the versatility of this flap in reconstructing anatomically distinct occipital and facial defects, particularly when conventional reconstructive options are limited.

Keywords: Trapezius Myocutaneous Flap, Craniofacial Reconstruction, Occipital Defect, Cheek Reconstruction, Regional Flap, Salvage Reconstruction.

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INTRODUCTION

Reconstruction of complex craniofacial defects following oncological resection remains challenging, particularly when extensive tissue loss or exposure of underlying structures is involved. The choice of reconstructive technique depends on the location, size, and depth of the defect, as well as the patient's general condition and available donor tissues [1].

Reconstructive options range from skin grafts and local flaps to regional and microvascular free flaps. Among regional techniques, the trapezius myocutaneous flap provides well-vascularized tissue, adequate soft-tissue volume, and a broad arc of rotation, making it suitable for selected occipital and facial defects [1-4].

We report two cases illustrating its application in the reconstruction of an extensive occipital defect with exposed dura mater and a full-thickness cheek defect, highlighting its anatomical basis, advantages, and limitations.

CASE PRESENTATIONS

Case 1:

A 54-year-old man underwent surgical excision of an occipital lesion, resulting in an extensive composite defect involving the posterior scalp and underlying tissues, with exposure of the dura mater. Histopathological examination revealed squamous cell carcinoma. Given the extent and anatomical characteristics of the defect, reconstruction was performed using a trapezius myocutaneous flap. Preoperative flap design was based on the anatomical landmarks of the trapezius muscle and the anticipated dimensions of the recipient site. The flap was carefully elevated with its underlying muscular component and transferred to the occipital region through a subcutaneous tunnel. It was then inset to achieve adequate coverage of the defect and provide well-vascularized tissue over the exposed dura mater. The postoperative course was assessed clinically, with particular attention to flap perfusion, tissue viability, wound healing, and donor-site morbidity. The findings at follow-up should be detailed according to the patient's clinical records.

Case 2:

A 58-year-old man underwent surgical resection of a lesion involving the left cheek. Histopathological examination revealed basal cell carcinoma. The surgical procedure resulted in a full-thickness, through-and-through defect of the left cheek, involving both the external cutaneous surface and the internal lining. This type of defect represents a significant reconstructive challenge because restoration of tissue continuity requires adequate coverage of the external surface as well as reconstruction of the internal lining. A trapezius myocutaneous flap was subsequently used as a salvage reconstructive procedure to provide vascularized tissue coverage of the defect. The flap was transferred and inset to restore continuity of the affected region. Postoperative assessment focused on flap viability, healing of the recipient site, restoration of tissue continuity, functional recovery, aesthetic outcome, and donor-site morbidity. The 12-month outcome should be described using the documented clinical findings.

DISCUSSION

The trapezius myocutaneous flap is a versatile regional flap used in reconstructive surgery since the early 1980s [1-4]. Its vascular supply varies according to the portion of the muscle included, with contributions from the transverse cervical, dorsal scapular, and occipital arterial systems. Understanding this vascular anatomy is essential for appropriate flap design and preservation of its viability [2].

Its main advantages include the availability of a large skin paddle, adequate soft-tissue bulk, and a wide arc of rotation, allowing reconstruction of distant defects without microvascular anastomosis. It may be particularly useful when local tissue is insufficient or free flap reconstruction is not feasible [1-5].

Our two cases illustrate distinct applications of this flap. In the first, it provided vascularized coverage of an extensive occipital defect with exposed dura mater. In the second, it was used as a salvage option for a full-thickness cheek defect requiring reconstruction of both the external skin surface and internal lining. These applications highlight its potential in selected defects where conventional local reconstruction may be inadequate.

Despite these advantages, potential complications include partial or total flap necrosis, wound dehiscence, infection, and donor-site morbidity. Injury to the spinal accessory nerve is of particular concern, as it may result in shoulder weakness and functional impairment. Careful dissection and preservation of this nerve are therefore essential.

Overall, the trapezius myocutaneous flap remains a valuable regional reconstructive option for selected complex craniofacial defects. Its use should be guided by defect characteristics, vascular anatomy, and expected functional and aesthetic outcomes. Although our limited experience does not allow comparison with other reconstructive techniques, these two cases demonstrate its versatility in both primary and salvage reconstruction.

CONCLUSION

The trapezius myocutaneous flap represents a versatile regional reconstructive option for selected complex head and neck defects. Its ability to provide a substantial amount of well-vascularized tissue, combined with its broad arc of rotation, makes it particularly useful for extensive posterior scalp defects and selected facial defects requiring salvage reconstruction. The cases presented highlight its potential role in the reconstruction of an occipital defect with exposed dura mater and a full-thickness cheek defect. Careful preoperative assessment, sound knowledge of the vascular anatomy, and preservation of shoulder function are essential to achieve satisfactory reconstructive outcomes.

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