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Burns 32 (2006) 380–384

BURNS

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An alternative treatment for postburn microstomia treatment: Composite auricular lobule graft for oral comissure reconstruction

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Accepted 6 October 2005

Abstract

Microstomia is one of the most distressing results of burn. In this article, two cases presenting with microstomia following burn injury were revealed. In these patients, perioral and commisure defects due to burn were severe.

The commissuroplasties were performed with a composite graft harvested and reshaped from the ear lobule. The oral aperture was evaluated before and after the operation and the patients were followed-up for two years. As a result, the opening was nearly normal without the help of a splint. Functional recovery were satisfactory as the incidence of drooling disappeared.

Both patients were satisfied with the end results since their quality of life increased significantly.

Keywords: Reconstruction of oral commissure; Composite graft; Postburn microstomia

1. Introduction

Deep burns of the face and lips often lead to the formation of scar tissue and contracture of perioral tissues with marked reduction in the ability of the patient to open their mouth.

Facial burns may be caused by electrical, thermal and chemical agents. It has been observed that microstomia may develop due to burns of perioral tissues [1,4,6]. Burns lead to tissue damage, devascularization and coagulation necrosis [7]. Healing is associated with scar formation and contraction, which deteriorates the sphincter action of the orbicularis oris muscle [8]. The end-result is an undesirable narrowing of the oral aperture. This disfiguration provokes psychological distress and causes impairment of oral and dental health. Speech and facial expression may be altered and maldevelopment of the face appears due to the aberrations of development of the dental arch [9].

Scar formation caused by burns of perioral and intraoral commissure, primarily results in contracture of skin and secondarily deformities of the musculoskeletal system. These contractures elicited by diffuse burns greatly influence the growth of the facial skeleton and changes the facial morphology throughout the life of a person [9,10].

Reconstruction of extensive lower and upper lip defects including oral comissure have challanged the ingenuity of reconstructive surgeons [2]. Unsatisfactory aesthetic results, uncontrolled dribbling of liquid and saliva, poor feeding, drooling, impairment of oral hygiene and speech disorders may occur due to the formation of the orbicularis oris muscle. The standard management of these contractures is release of the contractures and skin grafting. We describe a new technique of reconstructing with a composite graft of the ear-lobule to surgically correct microstomia.

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0305-4179/$30.00
doi:10.1016/j.burns.2005.10.011

2. Materials and methods

Two patients with severe perioral burn injuries applied to our clinic between 2003 and 2004. Burns of both patients were caused by flames (Figs. 1 and 2). In both patients, the commissural contracture was released and reconstruction was performed using a V–Y advancement flap and a mucosal transposition flap. During elevation of these flaps, orbicularis oris muscle realignment was made with absorbable sutures. The patients were operated under local anesthesia. A full-thickness horizontal incision through the oral commissure was made to restore the aperture. The incision was extended, to match the oral commissure of the non-operated side.

Composite gratfs harvested from the ear lobule were adopted for reconstruction of the new oral commissure (Fig. 3). The grafts were excised in a wedge-shaped fashion to facilitate donor site closure (Fig. 4). Wedge-shaped ear lobule was obtained and tissue incision was made from the base of the composite graft to its apex. The anterior and posterior margins of the composite graft were sutured together to form a V-shaped structure (Fig. 5). The composite graft was then sutured to the recipient area so that the top of the graft, which was left unsutured would fit into the modiolus (Fig. 6). No additional splints were used to support this structure.

Fig. 1. Wedge-shaped auricular composite graft.

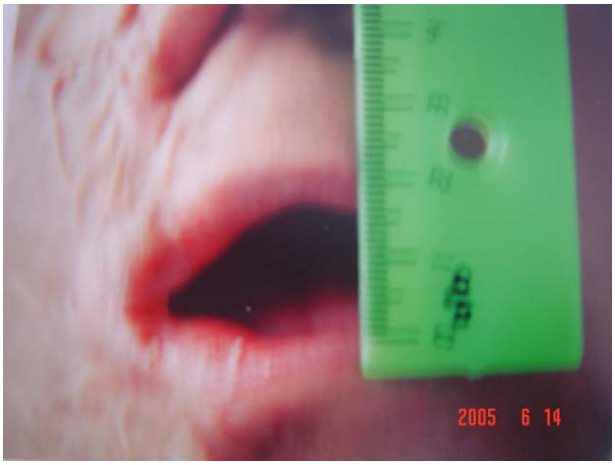

Fig. 2. The composite graft formed into the shape of oral commissure.

Fig. 3. The composite graft anterior and posterior sides sutured together.

Fig. 4. Preoperative view of first facial burn patient.

Fig. 5. Preoperative oral aperture measurement of the first patient.