Solvent-dehydrated fascia lata allograft for covering intraoral defects: our experience

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Mucosal defects in the oral cavity as a result of tumors, preprosthetic surgical procedure, or trauma are always a concern for surgeons. The aim of this study is to present our experience and discuss the advantages and problems arising with the use of solvent-dried human fascia lata allografts in oral mucosal defects, thus evaluating its clinical efficacy. Sixteen intraoral lesions were removed from 15 patients. The rehabilitation of the mucosal defects was achieved using solvent-dehydrated human fascia lata allografts. No graft rejection or infections were detected. The material was effective for enhancing the hemostasis, relieving the pain, and inducing rapid epithelization. The final result was excellent, even though in 2 cases complications were experienced. Hence, the use of the material proved to be reliable, practical, and safe. **(Oral Surg Oral Med Oral Pathol Oral Radiol Endod 2007;103:e13-e15)**

Fascia lata allograft, either freeze-dried or solvent-dehydrated, has been applied in several surgical procedures.[1-9] The aim of this study is to present our experience and to discuss the advantages and the problems arising with the use of solvent-dried human fascia lata allografts (Tutoplast, Tutogen Medical GmbH, Erlangen, Germany) in oral mucosal defects and thus evaluate its clinical efficacy.

MATERIAL AND METHODS

Fifteen patients (4 males and 11 females) who received human fascia lata allograft for rehabilitation of 16 intraoral mucosal defects were included in this study. Their ages ranged from 10 to 81 years, with a mean age of 55. In the majority (9/16) of cases, surgical procedures were performed under local anesthesia. The pathology of the lesions removed revealed 8 epulis fissuratum (6 in the maxilla and 2 in the mandible; Fig. 1*A*), 2 verrucous carcinomas, 1 pyogenic granuloma, 1 cavernous hemangioma (Fig. 2*A*), and 1 mucoepidermoid carcinoma (all from the buccal area). Tutoplast fascia lata was also used twice in a patient suffering gunshot trauma to increase the vestibular depth and to reconstruct the synchilia of the mouth. Finally, the material was used to cover the exposed lower anterior alveolar ridge of a trauma patient.

The grafts were placed over the defect and sutured to the peripheral mucosa of the wound with silk or resorbable sutures. In some cases, anchorage sutures were placed in the middle of the graft (Fig.1, *B, C*). In all patients with epulis fissuratum, the use of dentures was recommended immediately after the removal of the sutures (postoperative day 10-15). All patients were hospitalized for at least 3 days, mainly due to their medical record, and received intravenous antibiotic therapy perioperatively. During the immediate postoperative follow-up period, we evaluated the color, texture, and mobility of the fascia lata allografts and the condition of the patients regarding pain, edema, hematoma formation, and infection. Later, the condition of the newly formed mucosa was inspected. The total follow-up periods ranged from 5 to 18 months.

In one case of epulis fissuratum, a piece of graft with surrounding tissues was taken 7 days postoperatively and sent to pathology.

RESULTS

The histological examination revealed the graft surrounded by newly formatted granulation tissue and the presence of many polymorphonuclear leukocytes. The postoperative course was mainly unremarkable. No graft rejection or infections were detected. In one case, we observed an early (6 days postoperatively) rupture

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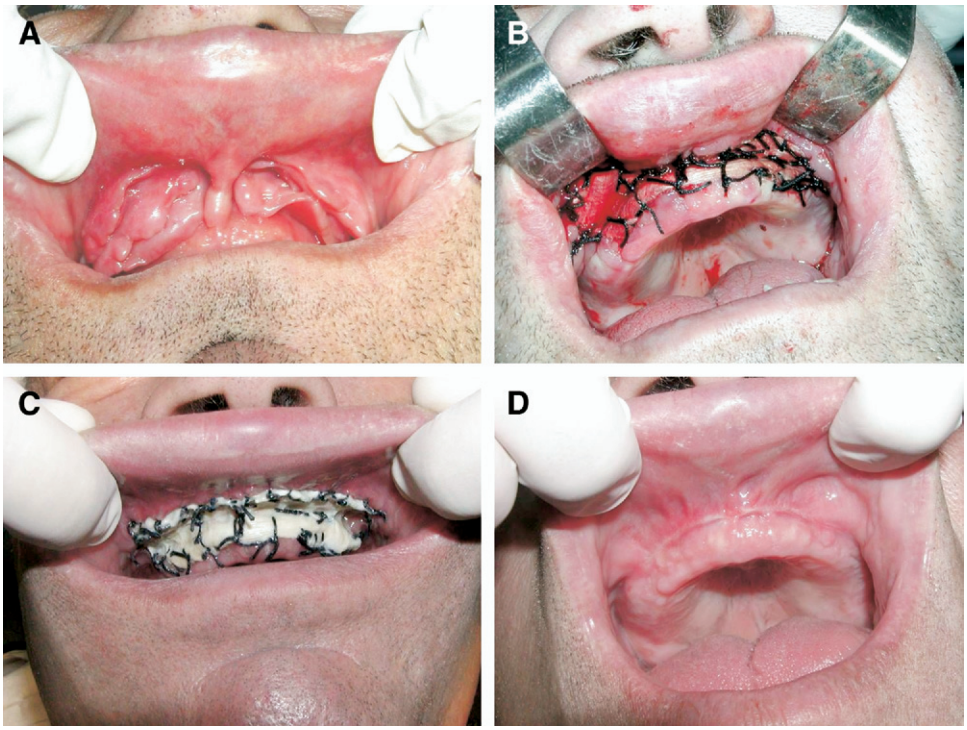

Fig. 1. An extensive epulis fissuratum before excision (**A**), with the mucosal defect covered with fascia lata (**B**), 1 week postoperatively (**C**), and after a month (**D**).

of the material due to hematoma formation, resulting in the development of fibrous tissue and adhesions. In this case, no anchorage sutures were placed in the middle of the graft. Nevertheless, the result is still satisfactory enough (Fig. 2, *B, C*). Another patient did not follow our instructions—to wear the dentures postoperatively—and the final result was not fully satisfactory and a new preprosthetic procedure was undertaken.

The final result of all other cases was excellent. The material was effective in enhancing the hemostasis, relieving the pain, and inducing rapid epithelization. All patients responded positively and were satisfied with the esthetic result.

Macroscopically from the second day after the surgical procedure, the material formed a white layer over the mucosa, which started to decompose slowly from the 5th postoperative day and was fully dissolved 15 to 20 days postoperatively. It is enough time for the complete restoration of the oral mucosa. Within 3 to 4 weeks, all grafted sites were covered with a healthy, vital, well-keratinized mucosa that could not be distinguished from the surrounding oral mucosa.

DISCUSSION

Human fascia lata allograft is a biodegradable natural tissue with high elasticity, is flexible and easy to fit, and is biologically compatible; consequently, it is safe to use.[1,5,6] It also exhibits tensile strength, minimal risk of infection and of immunological response, full remodeling, and finally rapid wound healing due to simulative effect on connective tissue formation. Histological findings in both animals and human beings showed that after the graft was fixed in place, it became enclosed, sandwichlike, in granulation tissue and was finally replaced by connective tissue with no immunological or foreign-body reaction.[1,7,8]

The use of grafts in the oral cavity provides pain relief, acceleration of wound healing, and prevention of edema, hematoma formation, infection, and relapse. In all our cases, healing was uneventful. None of the patients complained of pain following the first postoperative day. No infection, hypersensitivity, foreign-body reaction, or rejection was detected. The unique case of hematoma formation was attributed to technical error. In considerable defects, we suggest the use of anchorage sutures in the middle of the graft. Another case with epulis fissuratum presented with a poor outcome. In our opinion, the epulis fissuratum cases should be prompted to wear their dentures after the 15th postoperative day to secure the surgical result.

Certainly the number of cases is small, but the results are promising. One other report exists in the literature for the use of the same material in vestibuloplasty for

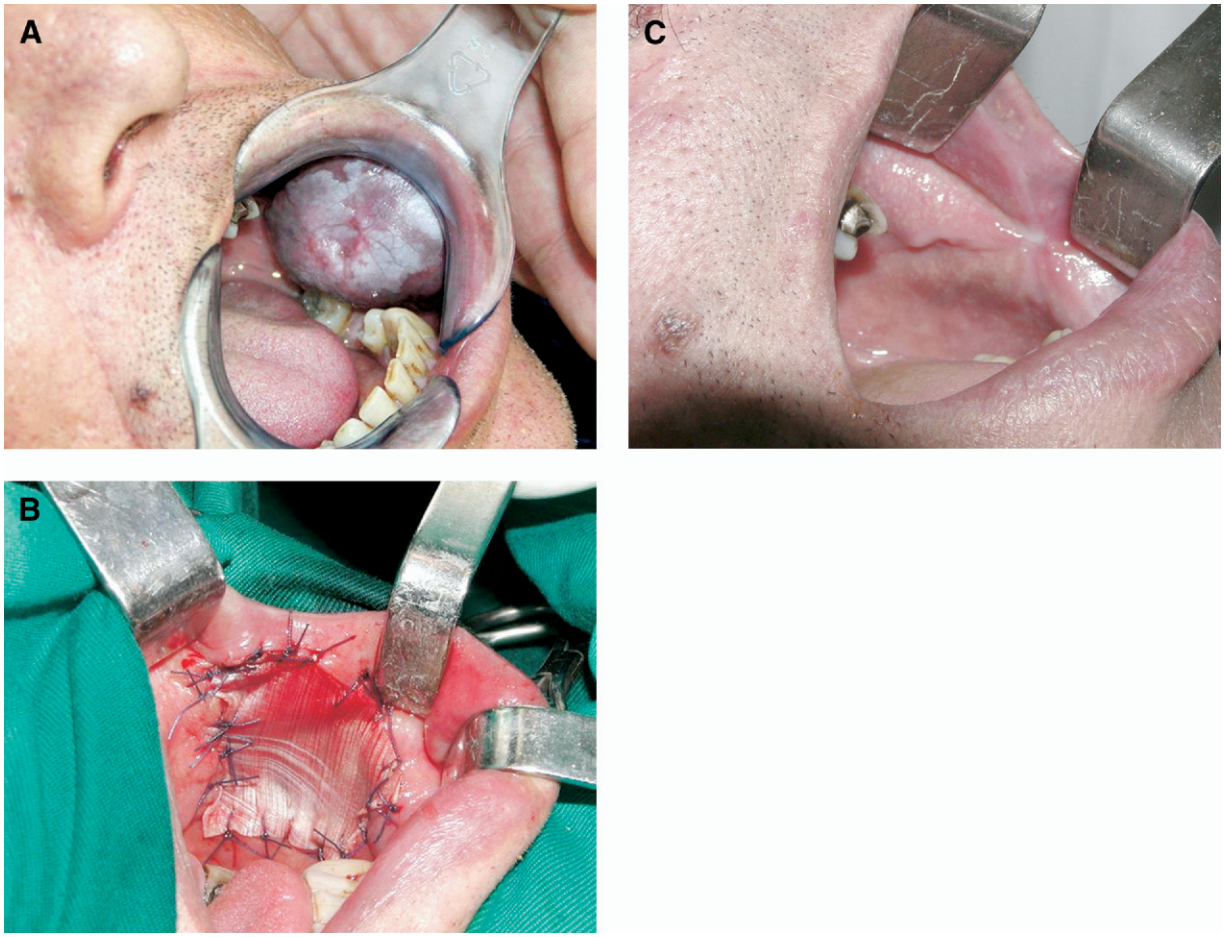

Fig. 2. Buccal cavernous hemangioma before excision (**A**), the defect covered with fascia lata (**B**), and the result 3 months postoperatively (**C**).

intraoral defects.[1] Although we agree with Sezer et al.[1] that the use of autogenous mucosal grafts is superior, the solvent-dehydrated form of human fascia lata allograft is an excellent, reliable, and safe alternative.

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