

CASE STUDY:

USE OF TITANIUM-REINFORCED DENSE PTFE MEMBRANE FOR IMMEDIATE SOCKET RECONSTRUCTION



Fig 1

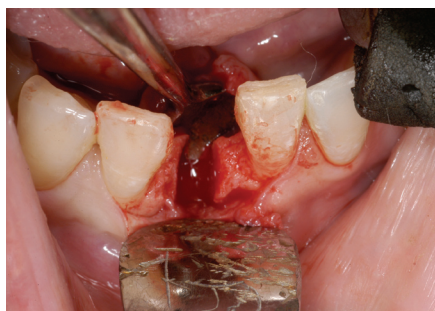


Fig 2



Fig 3



Fig 4

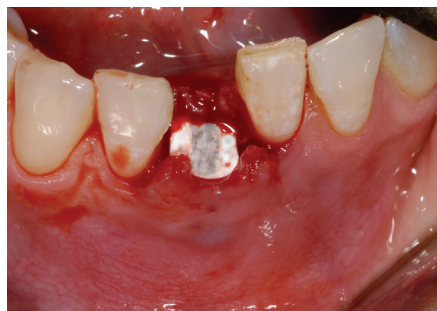


Fig 5



Fig 6



Fig 7



Fig 8

This mandibular right lateral incisor was vertically fractured, exhibiting long-standing chronic inflammation (Fig 1).

Upon extraction of the tooth, both the buccal and lingual plate were missing due to bone resorption (Fig 2).

The socket was grafted with a combination of demineralized human freeze-dried bone and mineralized freeze-dried bone in a 50:50 ratio (Fig 3).

A Cytoplast® Ti-250 dense PTFE membrane was pre-curved over an instrument handle. It was then trimmed to cover the defect margins, taking care to avoid contact with the adjacent tooth roots (Fig 4).

The membrane is tucked in place under the mucoperiosteal flaps (Fig 5).

The wound was closed with Cytoplast® 3-0 PTFE suture, intentionally leaving the membrane exposed and the soft tissues in their normal position. In this technique, primary closure is not necessary, allowing preservation of the keratinized tissue width (Fig 6).

This is the appearance of the Ti-250 membrane, intentionally left exposed, at 30 days. Topical anesthesia is applied for membrane removal, the membrane is grasped with a forceps and gently removed from the wound (Fig 7).

Immediately after removal of the membrane, a dense, well-vascularized connective tissue matrix is observed within the socket. There is no loss of graft material. The oral epithelium has been prevented from migrating into the defect (Fig 8).



Fig 9



Fig 10



Fig 11



Fig 12

The clinical appearance 12 weeks after extraction. There is preservation of both hard tissue and soft tissue volume (Fig 9).

A flap was elevated for implant placement. The missing buccal and lingual plate have been restored to full contour (Fig 10).

A 3.5 mm one-piece implant is placed into dense bone, and is stable enough for immediate temporization (Fig 11).

Immediate post-op clinical view. An immediate, non-functional temporary restoration was fabricated on the implant (Fig 12).

SUMMARY

The use of a titanium-reinforced dense PTFE membrane provides several advantages in the management of complex defects where two or more walls are missing. The additional support results in greater bone volume compared to membrane materials that may collapse into the defect. Because an open technique can be used, there is no reduction in keratinized tissue width, and there is maintenance of normal soft tissue architecture. Because bacteria cannot penetrate the dense membrane structure, concerns about membrane exposure are eliminated.

