

GBR using a novel PLGA synthetic membrane before implant placement: a case report

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Introduction

Guided bone regeneration (GBR) is a surgical procedure used to preserve or increase bone volume, hence permitting optimal placement of dental implants. GBR requires the use of resorbable or non resorbable membrane. Synthetic, Poly (lactic-co-glycolic acid) (PLGA) membranes have been presented as clinically efficient for periodontal/pre-implant regenerative procedures. We wanted to clinically test a newly commercialized PLGA membrane (Tisseos®) in a GBR procedure before implant placement.

Case report

A 68 years old healthy male consulted for implant supported rehabilitation. Clinical and radiographic examination revealed multiple teeth loss on the upper left quadrant (24,25,26), insufficient ridge volume and residual root debris in the extraction socket (Figure 1 A,B,C,D). A GBR procedure was decided in the 24 region. After flap elevation and root planing, rigorous curettage of granulation tissue (Figure 2 A,B), bone substitute (Bio-Oss®) was placed (Figure 2 C) and covered by the PLGA membrane that has distinctive smooth and rough surface sides (Figure 2 D,E). The rough one permitted membrane adhesion to bone surface (without sutures/pins) (Figure 3 A). This facilitated its placement and the maintaining of bone filler granules. After final membrane positioning, it stayed stable during suturing. (Figure 3 B,C) Healing at 4 months was satisfactory (Figure D). At reentry, sufficient bone volume was regained and two titanium implants (Astra Tech®) were successfully placed and osseointegrated (Figure 4 A,B,C). Final implant-borne bridge could be delivered with a satisfactory hard/soft tissues support (Figure 4 D).

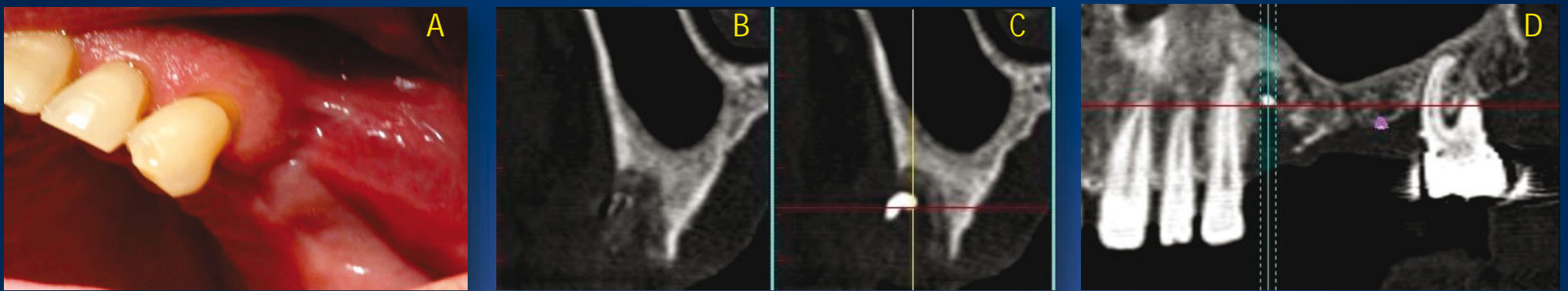


Figure 1:

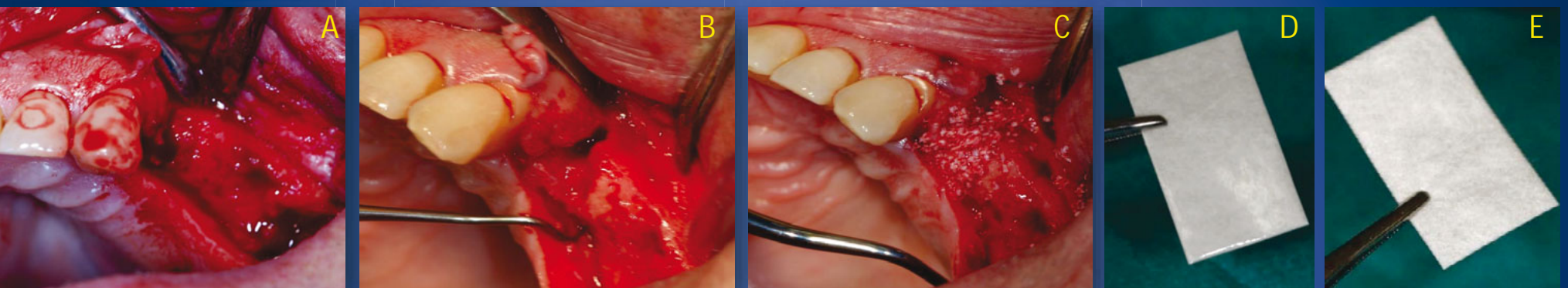


Figure 2:

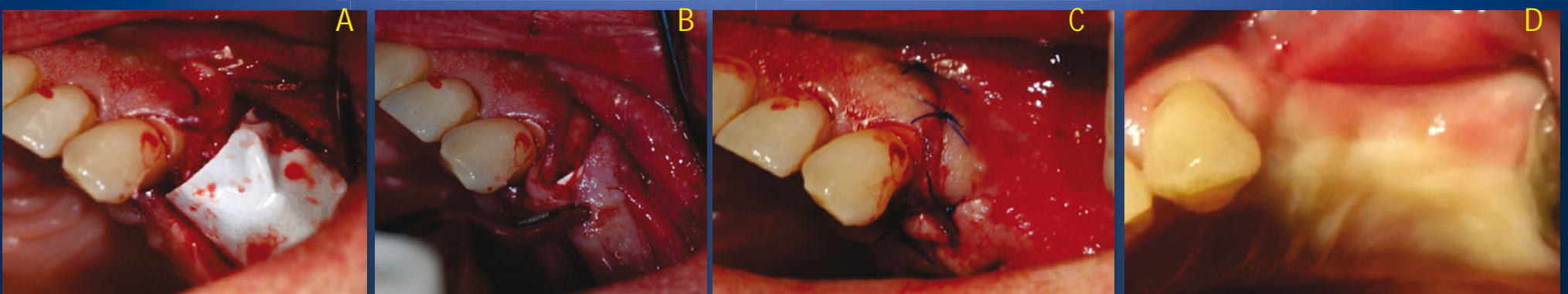


Figure 3:

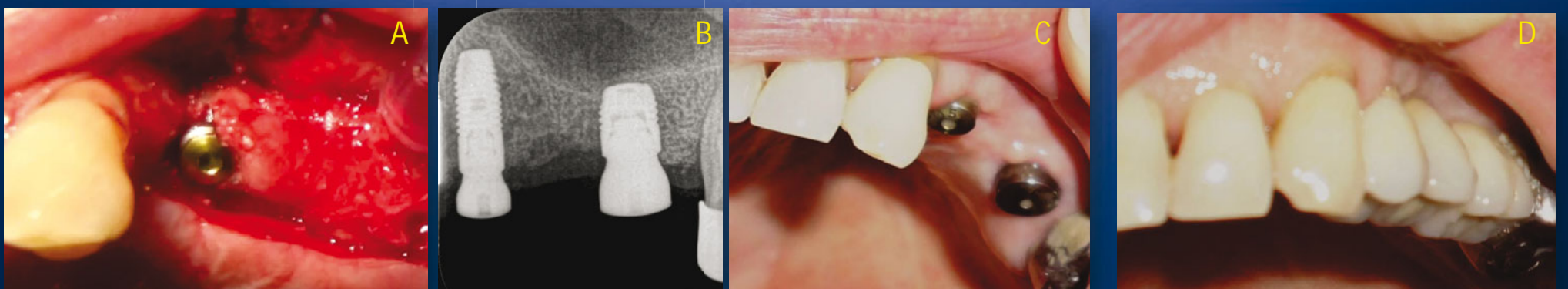


Figure 4:

Conclusion

The tested PLGA membrane was easy to handle during GBR and was adherent to bone surface, contrary to other types of membranes. Hence facilitating surgical procedure. On the other hand, a growing demand for synthetic membranes is expressed from patients. PLGA membranes could constitute efficient alternative to animal origin membranes for GBR.

