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Porcine dermal matrix in the treatment of dehiscence-type defects - an experimental split-mouth animal trial

EXPERIMENTAL STUDIES

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ABSTRACT

In case of gingival recessions, the surgical treatment can employ different techniques, such as free grafts, pedicle flaps and tissue regeneration. With reference to recession coverage and gain in keratinized tissue, subepithelial connective tissue graft (CTG) is considered to be the gold standard. In any case, CTGs require a second surgical site and there is an increased risk of patient morbidity and intra-surgical complications.

In order to avoid these drawbacks, a porcine derived dermal matrix (PDX) has been introduced to correct dehiscence-type defects. The aim of this study was to histologically compare the use of a porcine dermal matrix (PDX) and subepithelial connective tissue (CTG) in the treatment of dehiscence-type defects.

OsteoBiol® *Derma* (Tecnoss®, Giaveno, Italy) is derived from porcine dermis after removal of the epithelial layer. The processing technique is performed at low temperature (cold process) and leaves behind an acellular porcine collagen tissue matrix without chemical cross-linking.

For this study, buccal dehiscence defects were created on both upper canines of Beagle dogs. The defects were covered in a split-mouth design either with a porcine dermal matrix or subepithelial connective tissue.

After 4 months histometrical outcomes (tissue thickness, tissue height) were evaluated and no inflammatory/foreign body reaction neither in the connective tissue nor in the perivascular areas was evident.

Histometrically, no significant difference was found for tissue thickness and height between both treatment groups and the porcine dermal matrix was well tolerated by the host.

CONCLUSIONS

Within the limits of this animal study setting, as the tissue thickness showed only modest differences between porcine dermal matrix and subepithelial connective tissue, the authors concluded that "*a porcine dermal matrix can safely be used as an alternative to subepithelial connective tissue grafts… This may be seen as a relevant clinical finding, as the main purpose of using soft tissue grafts for recession coverage is thickening of the surrounding tissues*".

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