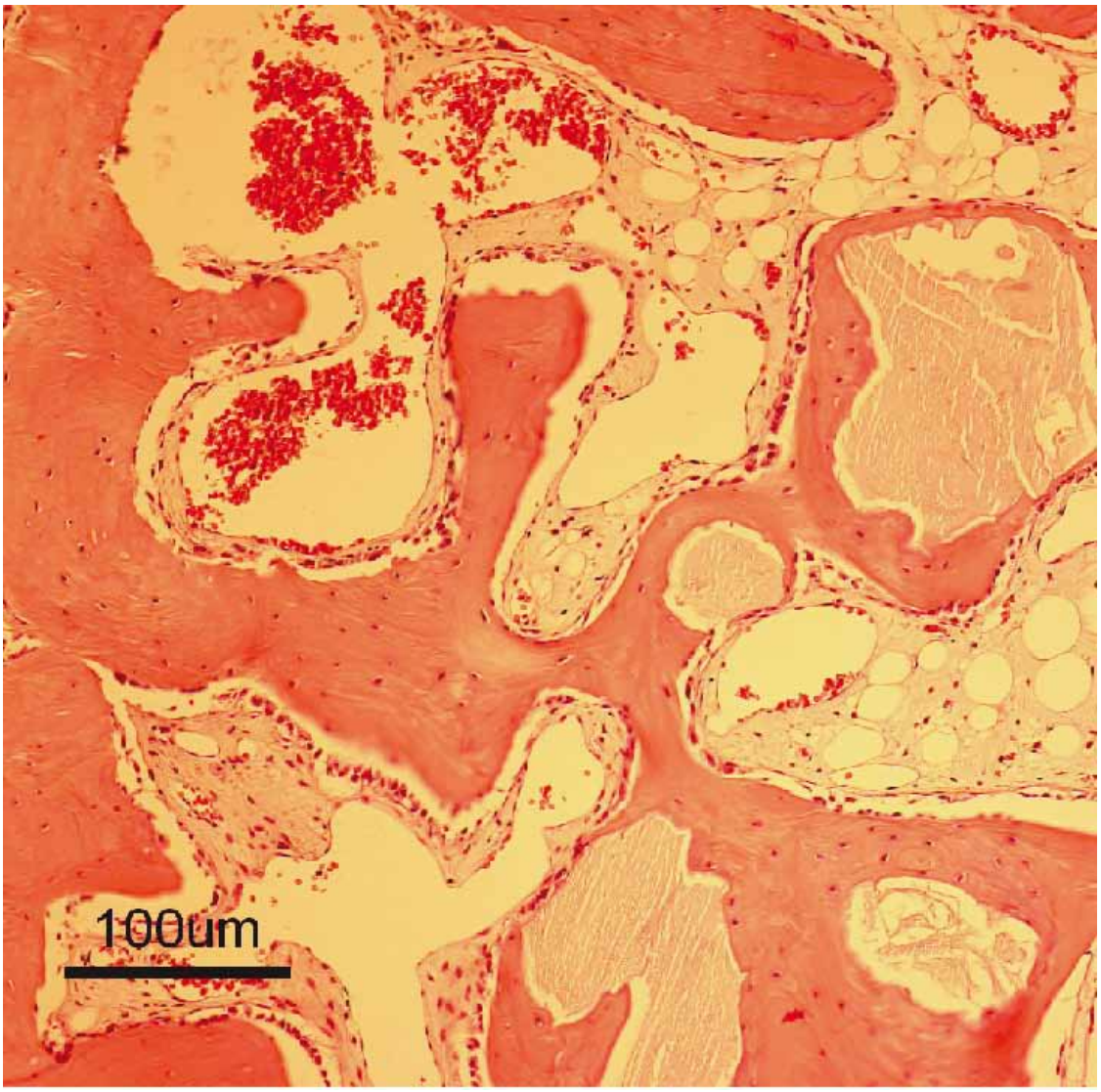
Estudios experimentales



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EXPERIMENTAL STUDIES

080

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Influence of local administration of pamidronate on extraction socket healing – a histomorphometric proof-of-principle pre-clinical in vivo evaluation

ABSTRACT

After tooth extraction, the physiological socket remodelling results in marked volumetric changes in both the hard and soft tissue of the alveolar ridge. The possibility to mantain hard and soft tissue volume after tooth extraction is important in order to avoid a more complex treatment, as augmentation procedures.
To reduce hard tissue loss after tooth extraction it has been suggested to interfere pharmacologically with bone remodelling with, for example, a systemic administration of bisphosphonates.
The aim of this study was to evaluate the influence on extraction socket healing of local administration of pamidronate, adsorbed on a collagenated porcine bone substitute. Two American Fox-hound dogs were subjected to tooth extraction and the sockets were then loosely filled, in a split-mouth fashion, with a collagenated porcine bone substitute (OsteoBiol® *Gen-Os*®, Tecnoss®, Giaveno, Italy; CPB), rehydrated either with 90 mg/ml pamidronate (Aredia®; test) or with sterile saline (control). After 4 months of healing, the Authors proceeded with the histological evaluation revealing substantial differences in healing patterns: control sites presented with various amounts of newly formed bone and no evidence of CPB inside the socket; in contrast, limited amounts of bone were observed at test sites, which were filled with CPB mainly embedded in connective tissue.

CONCLUSIONS

Based on the results of the histological evaluation, the Authors conclusion is that *"local administration of pamidronate adsorbed on a collagenated porcine bone substitute in particulate form appeared to delay extraction socket healing, but may also reduce post-extraction dimensional changes in terms of horizontal bone width. Additionally, pamidronate appears to obstruct resorption of the porcine bone substitute"*.

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