

# *The Effect of Postsurgical Painmanagement of a Selective Cyclooxygenase-2 Inhibitor on the Healing of Intrabony Defects treated with Enamel Matrix Proteins*

## **A Report of 11 cases**

*Results from histological and clinical studies have provided evidence that regenerative periodontal treatment with an enamel matrix protein derivative (EMD) may predictably enhance healing following periodontal surgery.<sup>3,5,13,14,18</sup> However, in most of the reported studies, surgical treatment with EMD was performed in conjunction with either a postoperative antibiotic regimen and/or postoperative administration of non-steroidal anti-inflammatory drugs (NSAIDs).<sup>3,5,13,14,18</sup>*

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There is increasing evidence indicating that the administration of NSAIDs, which inhibit PGGH synthetase (cyclooxygenase) may retard the loss of supporting alveolar bone following experimentally induced or naturally occurring periodontitis in animals.<sup>1,6,7,12</sup> Additionally, administration of NSAIDs has proven beneficial in treating periodontitis patients.<sup>7,12,17</sup> The recent discovery that cyclooxygenase (COX) exists in at least 2 isoforms (COX-1 and COX-2) has led to the suggestion that the therapeutic benefits resulting from classical NSAID use are derived from a COX-2 blockade, whereas a concomitant COX-1 blockade by these drugs provokes side effects particularly in patients with pre-existing gastroduodenal hemorrhagic episodes or renal function damage.<sup>4</sup> Moreover, findings from animal studies have indicated that the administration of selective COX-2 inhibitors may prevent alveolar bone loss following experimentally induced periodontitis, by providing less gastric damage than administration of classical NSAIDs.<sup>1,6</sup> The administration of NSAIDs is a routine procedure following periodontal or oral surgery.<sup>10,12,18</sup> Although the primary goal for the administration of NSAIDs is prevention of postoperative discomfort such as swelling and pain, it cannot be excluded that these drugs may also exhibit a certain effect upon the postoperative healing process due to their regulation of the prostaglandin metabolism. Thus, the results

obtained following regenerative periodontal surgery might be also influenced by the postoperative NSAID regimen.

Therefore, the aim of this case report study was to collect some preliminary data on the effect of postsurgical administration of a selective COX-2 inhibitor on the healing of intrabony periodontal defects following regenerative periodontal surgery with EMD.

### *Materials and Methods*

#### *Study Design*

11 patients (6 females and 5 males) each of whom displayed one intrabony defect were included in the study based on signed informed consent. The study was in accordance with the Helsinki Declaration of 1975, as revised in 1983. Criteria for patient selection were:

- a) presence of at least one intrabony defect with a depth of at least 6 mm when measured with a manual periodontal probe,
- b) no systemic diseases,
- c) no use of antibiotics during the last six months prior to treatment,
- d) no treatment of periodontitis for the last two years,
- e) good level of oral hygiene.

As criterion for a good level of oral hygiene a mean Plaque Index score (PI) < 1 was chosen.<sup>8</sup> Two to three months prior to surgery each patient was given thorough oral hygiene instruction, and full mouth supra- and subgingival scaling and root planing under local anesthesia.

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