*hy***CURE®**, *A Novel Approach For Use in the Management of Dental Tissue Procedures*
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*hy***CURE®**, a Type I collagen, is a natural selection as a resorbable material for use in extractions, periodontal surgery and sores where exudate is present. *hy***CURE®** functions as both a wound exudate absorber and a wound filler. Since Type I collagen is the most dominant protein in human connective tissue, including periodontal ligaments and gingiva tissue[1], *hy***CURE®** possesses many of the biologic qualities which enhance the type of wound healing desired following dental therapy involving the oral mucosa, gingiva and periodontal ligament.

The desirable characteristics that are sought following periodontal and gingiva therapy include: clot formation and stabilization, neovascularization and epithelial cell rejuvenation.[2] In order for regeneration to occur, a well-organized clot must form shortly after wound closure.[3] Collagen is known to be a natural hemostatic agent. It is this characteristic that may facilitate early wound stabilization by enhancing the initial blood clot formation. Collagen may also serve as a biologic scaffold for ingrowth of endothelial cells and progenitor cells from the periodontal ligament.[4] Collagen, has been demonstrated to be chemotactic for fibroblasts in vitro. [5]

Studies employing peptide mapping for collagen composition provide evidence for the presence of both Type I and Type III collagen.[6] The fibers of the periodontal ligament are predominantly composed of collagen. Studies in vitro in a number of connective tissues, have confirmed that there is a rapid conversion of Type I procollagen to collagen Type I. It would appear, then, that the use of collagen in the management of tissue regeneration, would be a natural selection.

The gingival is made up of soft connective tissue (the gingival corium) and the connective tissues of the periodontal ligament and the overlying epithelium. The gingival extends from its limiting margin in the cervical region of a tooth to the alveolar mucosa covering the bony alveolar processes of the jaws. The gingival corium attaches to both the alveolar bone and the cervical bone and the cervical region of the tooth protects and maintains the integrity of the periodontal ligament.[8] Biochemical studies show that the main components of gingival connective tissue are Type I and Type III collagen, Type I collagen being the principal constituent.[7] The main fibrillar component of the gingiva is Type I collagen; a heavier concentration of Type I collagen is also found in the deeper layers of the gingival corium.[9]

Inflammation of the gingiva or gingivitis is one of the most common dental diseases for humans. If not controlled or treated, it will lead to periodontal disease with a slow progressive destruction of the ligament and alveolar bone.[10]

The mouth or oral mucosa is lined by a mucous membrane whose structure resembles that of the skin. It is composed of two layers, the overlying epithelium and an underlying connective tissue. The structure of this membrane varies with the functional requirements of the different regions of the oral cavity; for example, areas involved in the mastication of food such as the gingivae and tongue have a much different structure than that of the floor of the mouth.[11] The oral mucosa is made up of mainly Type I collagen, representing approximately 80-90% of the total collagen content.[12]

*hy***CURE®** is a natural protein powder composed of mainly Type I hydrolyzed collagen that has been manufactured to exacting standards; for example to a controlled, specific molecular weight range. *hy***CURE®** is indicated for the local management of chronic ulcers, surgically-induced wounds, trauma-induced wounds and superficial wounds. With each dressing change, any *hy***CURE®** remaining in the wound site need not be removed. Because of its physical form, a powder has the ability to conform to any woundsite; management of tunneled wounds, flaps, and other non-conformative sites are easily accomplished. *hy***CURE®** favors hemostasis and is capable of absorbing up to 30 times its own weight.

References

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