

## VARIOUS SUTURING MATERIAL AND WOUND HEALING PROCESS AFTER ORAL SURGERY PROCEDURE - A REVIEW PAPER

Cena Dimova<sup>1\*</sup>, Mirjana Popovska<sup>2</sup>, Biljana Evrosimovska<sup>3</sup>, Katerina Zlatanovska<sup>1</sup>, Kiro Papakoca<sup>1</sup>, Mihajlo Petrovski<sup>1</sup>, Marija Ivanovska - Stojanoska<sup>4</sup>, Spiro Spasovski<sup>5</sup>

<sup>1</sup>Department of Oral and Maxillofacial Surgery and Dental Implantology, Faculty of Medical Sciences, "Goce Delcev" University, Krste Misirkov 10-a, 2000 Stip, Macedonia

<sup>2</sup>Faculty of Dentistry, University "Ss. Cyril and Methodius", Mother Teresa 17, 1000 Skopje, Macedonia

<sup>3</sup>Clinic of Oral Surgery, University Dental Clinical Centre "Sveti Pantelejmon", Vodnjanska 17, 1000 Skopje, Macedonia

<sup>4</sup>Clinic of Oral Pathology and Periodontology, University Dental Clinical Centre "Sveti Panteleimon", Vodnjanska 17, 1000 Skopje, Macedonia

<sup>5</sup>PHO "D-r Spasovski", Hristo Tatarchev 91b, 1000 Skopje, Macedonia

\*e-mail: cena.dimova@ugd.edu.mk

### Abstract

The most oral surgical interventions require primary wound closure with stitches after previously raised mucoperiosteal flap. Different suture materials are used for this purpose which are classified upon their origin (organic and synthetic) or according to their durability in host tissues (absorbable and non-absorbable). The aim of the review paper was to emphasize the all-important properties of suture material include knot safety, stretch capacity, tissue reactivity, and wound safety.

MEDLINE and PubMed databases were explored from the 1970 up to 2018 using the keywords in different combinations: oral surgery, suture material, flap, dental implants, nylon, periodontal, polyglycaprone, polytetrafluoroethylene, polyglycolic acid, polylactic acid, silk. Normal wound healing after oral surgery procedures requires multiple finely tuned processes that occur in a specific sequence as well as proliferation, regeneration and organization (differentiation). The final stage of the wound healing process is named the contraction phase, which begins following sufficient collagen formation in the granular tissue. Traditionally, silk has been the mostly used as suture material for oral surgical procedures, with rarely including others as: nylon, polyester, cat gut, polytetrafluoroethylene (ePTFE), polyglycolic acid (PGA) etc. Surgery with silk sutures increases the risk of infections because they react with the connective tissue, causing adhesion of dental plaque and bacteria adherence around the stitch. On the other hand, a specific form of wound healing occurs around placed dental implants. Usually the implants are placed directly under or at the same level as the bone surface at biphasic dental implant procedures.

In conclusion, besides the carefully used surgical and suturing technique, and properly oral hygiene in the postoperative period, the choice of suture material may also influence the healing of the incised soft tissues. Thus the selection of the suture material should be brought under consideration during treatment planning for oral surgical interventions, periodontal surgery and dental implantation.

**Key words:** Oral, Surgery, Periodontal, Implants, Flap, Suture, Silk, Nylon.