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 Republic of Macedonia,

NUTRICON 2019,  
 12 -14 June 2019  
 Ohrid, Macedonia

NUTRICON  
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 Years and counting...

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

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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 nonabsorbable). 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 the from 1970 up to 2018 using the keywords in different combinations: oral surgery, suture material, flap, dental implants, nylon, periodontal, polyglecaprone, polytetrafluoroethylene, polyglycolic acid (PGA), polylactic acid, silk.

General guidelines for suturing, according to Krtzman et al. included these recommendations:

- Sutures are usually placed distal to the last tooth, in each interproximal space, and suturing continued in a mesial direction
- Sutures should always be inserted through the more mobile tissue flap first
- When space is restricted use a 1/2 circle needle
- Only needle holders should grasp suture needles and the suture needle should be inserted and pulled through the issue in line with the circle
- Grab the suture needle in the centre of the needle, never at its tip or near where the thread is swag to the needle
- The needle should be placed a few millimetres from the tip of the needle holder when grasped
- The goal during suturing multiple tissue levels is to suture periosteum to periosteum and gingival tissue to gingival tissue
- The needle should enter at right angles to the tissue when penetrating through tissues
- Sutures should be placed no closer than 2mm to 3mm from the flap edges to prevent tearing through the flap during post-operative swelling
- The flaps should be approximated without blanching when sutured
- Pull the suture just tight enough to secure the flap in place without restricting the flap's blood supply.



Case 1. Suture with silky threads after surgery



Case 2. Suture with silky threads 2 days and 7 days after surgery



| Suture thread types used in dentistry |                           |                        |
|---------------------------------------|---------------------------|------------------------|
| <b>A: Non-resorbable Type</b>         |                           |                        |
|                                       | Commonly used thread size |                        |
| Silk                                  | 3-0, 4-0, 5-0             |                        |
| Nylon                                 | 4-0, 5-0, 6-0             |                        |
| Polypropylene                         | 5-0, 6,0                  |                        |
| e-PTFE                                | 4-0, 5-0                  |                        |
| <b>B: Resorbable Type</b>             |                           |                        |
|                                       |                           | Resorption time (days) |
| Gut                                   | 4-0                       | 3 to 5                 |
| Chromic gut                           | 4-0, 5-0                  | 7 to 10                |
| PGA                                   | 3-0, 4-0, 5-0             | 21 to 28               |
| PGA-dyed                              | 3-0, 4-0, 5-0             | 21 to 28               |



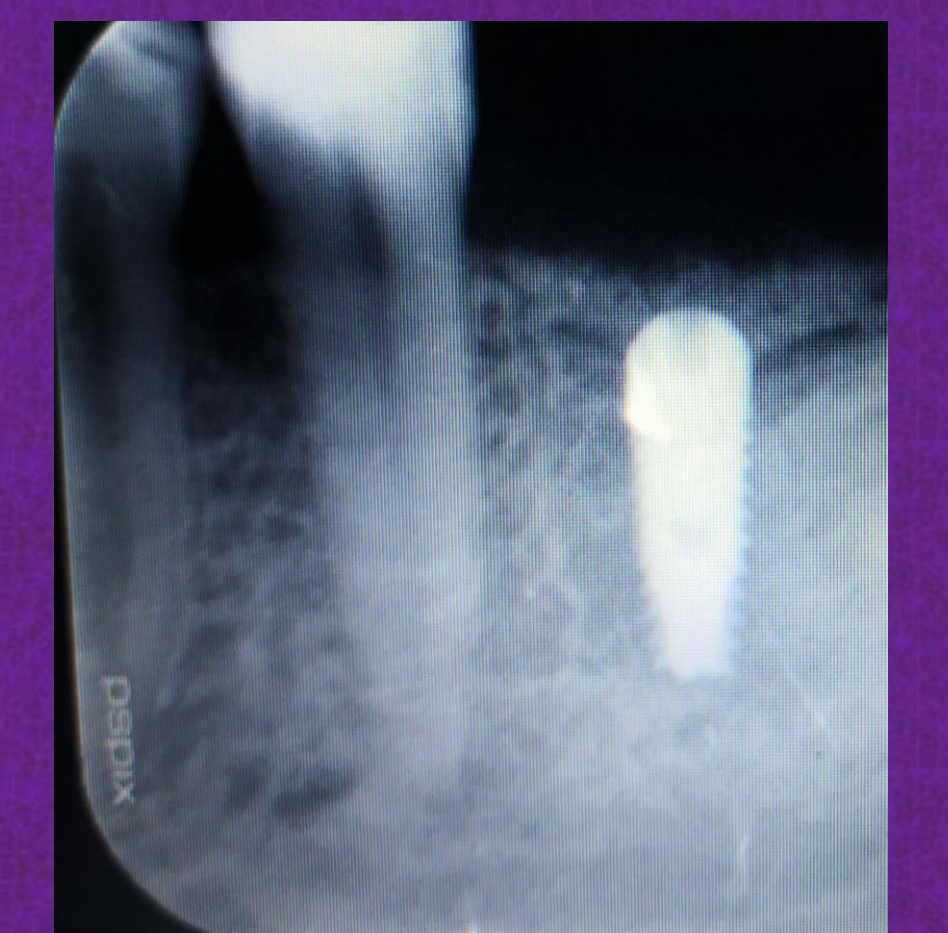
Case 3. Suture with silky threads after periodontal surgery (preoperative, with suture, after surgery)



Case 4. Suture with silky threads after periodontal surgery



Case 5. Suture with silky threads after dental implantation



### Conclusion

This article should provide some aspects for understanding of suturing materials in different surgical fields in dentistry. The evolution and recent innovations in suturing material have eliminated some of the difficulties previously encountered during surgical closure, and have presented dentists with advancements in sutures designed for specific surgical procedures. With the sophisticated surgical procedures used daily, there is a greater need for knowledge with regard to the various types of suturing armamentarium available to assist in obtaining optimal wound closure.

Acknowledgement: This work is financed and supported by "Goce Delcev" University, Stip, Macedonia