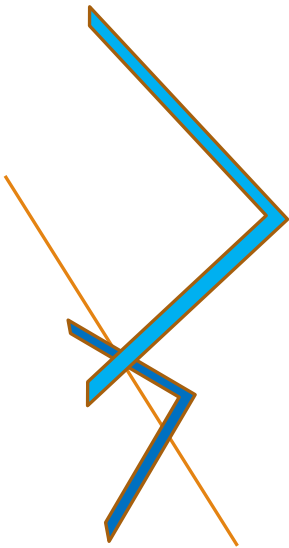
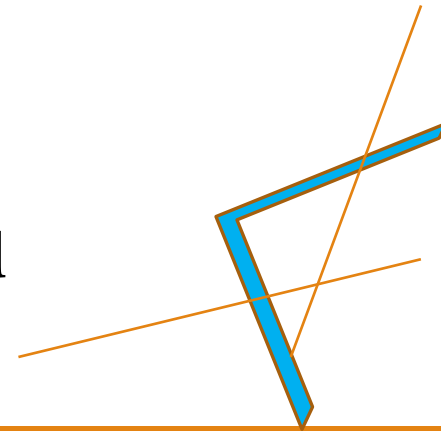


Suturing Vs Sutureless Techniques in Periodontal Surgery



by

Dr.Mohamed Saeed
B.D.S.M.S.C



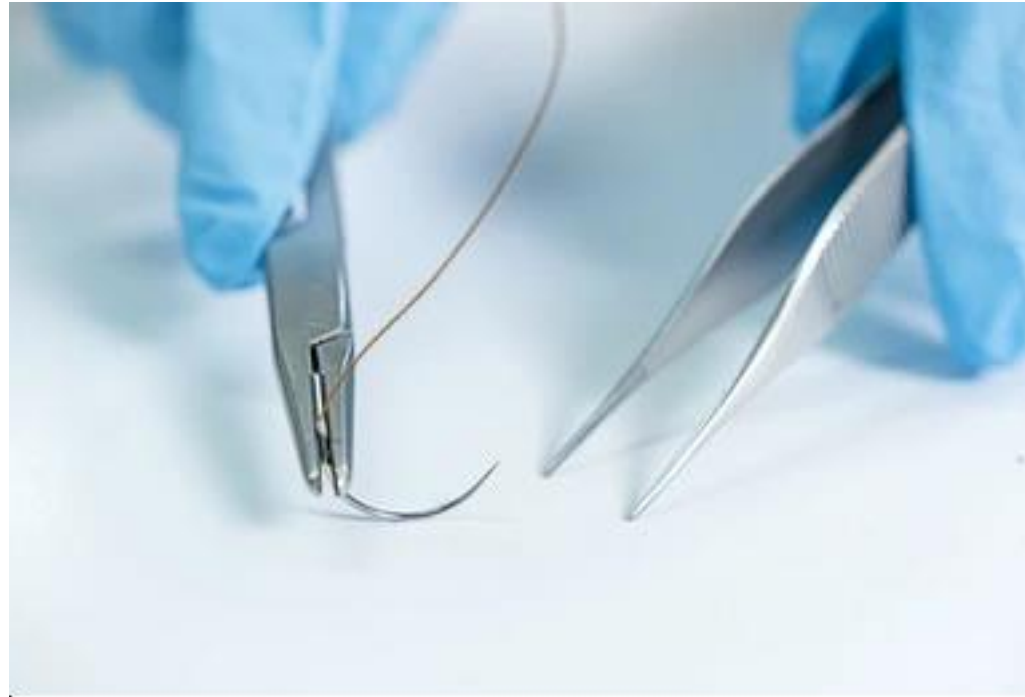
Introduction

- Soft-tissue **healing** in periodontal surgery depends on **good surgical technique** and **soft-tissue management**.
- Various suturing **techniques** used in dental applications (Each technique has **advantages** and **disadvantages**).
- The **choice** of suture technique comes with the understanding of the **wound anatomy** and the **surgeon's preference**.
- The word **suture** is derived from **Latin word (suture)** meaning a seam or **stitch** or material used in closing a surgical or traumatic wound with stitches.



Aim of the review

The aim of review was to evaluate the knowledge and understanding the clinical outcomes of using suture and sutureless wound closure techniques.



History of sutures

Sutures were first described as far back **3000 B.C.** in **ancient Egyptian** literature.

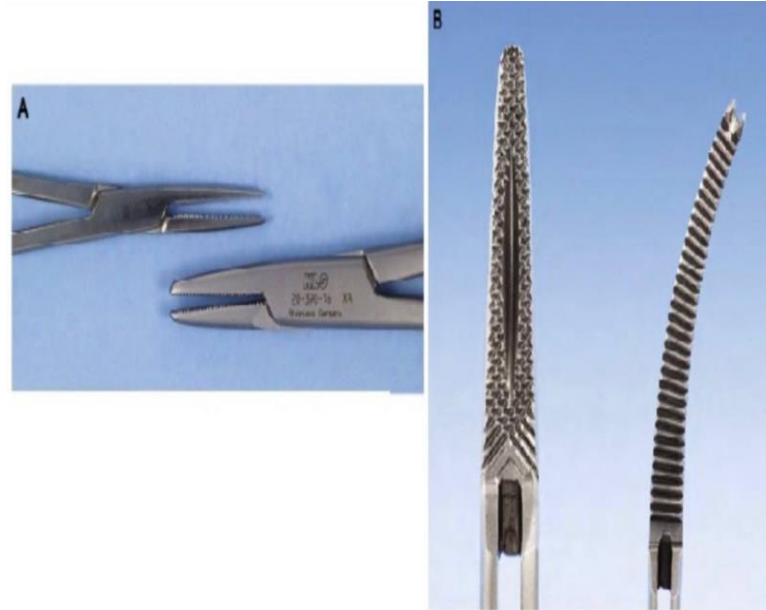
In the 1800's the physician Joseph Lister introduced a technique for sterilization of catgut and it was perfected finally in 1909

Early in 20th century synthetic materials were developed that could be used for suturing. These synthetic materials were categorized into absorbable and non-absorbable materials.

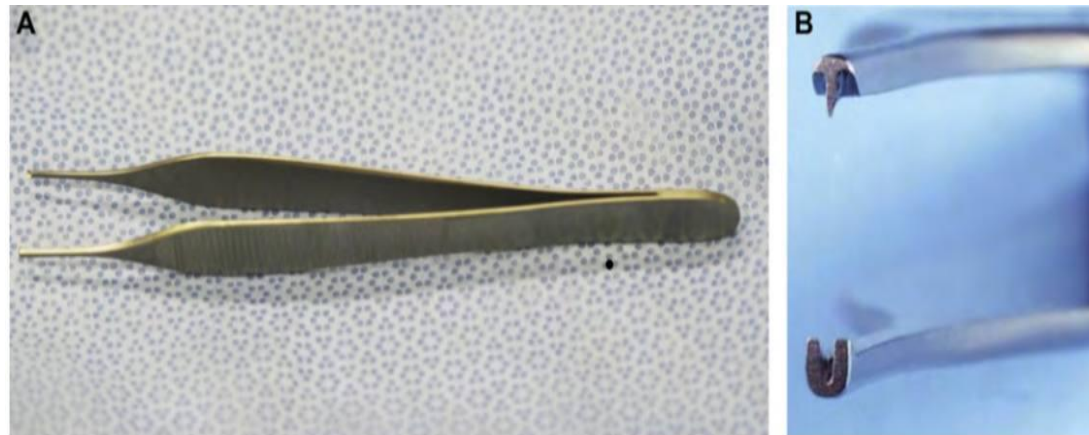


Suturing instruments

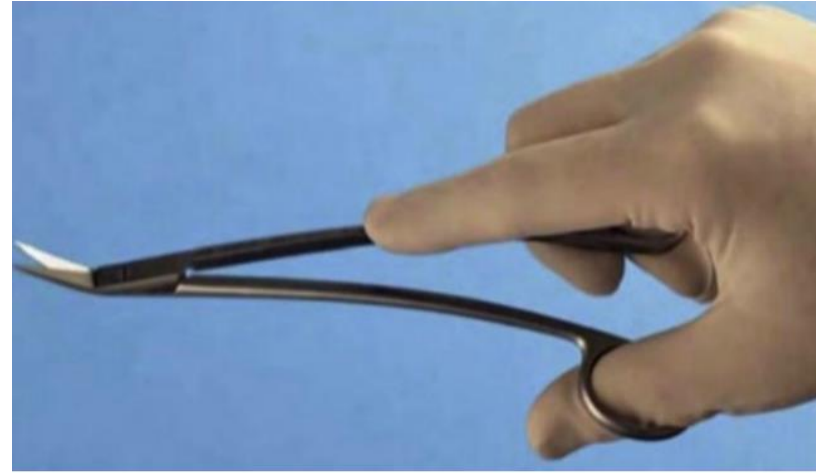
1. Needle Holder



2. Tissue Forceps



3.Scissors



4. Needle



Taper Point



Square Body



Tapercutting



Reverse Cutting



CC Needle

Cross section



1/4 Circle



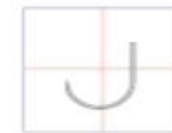
3/8 Circle



1/2 Circle



5/8 Circle



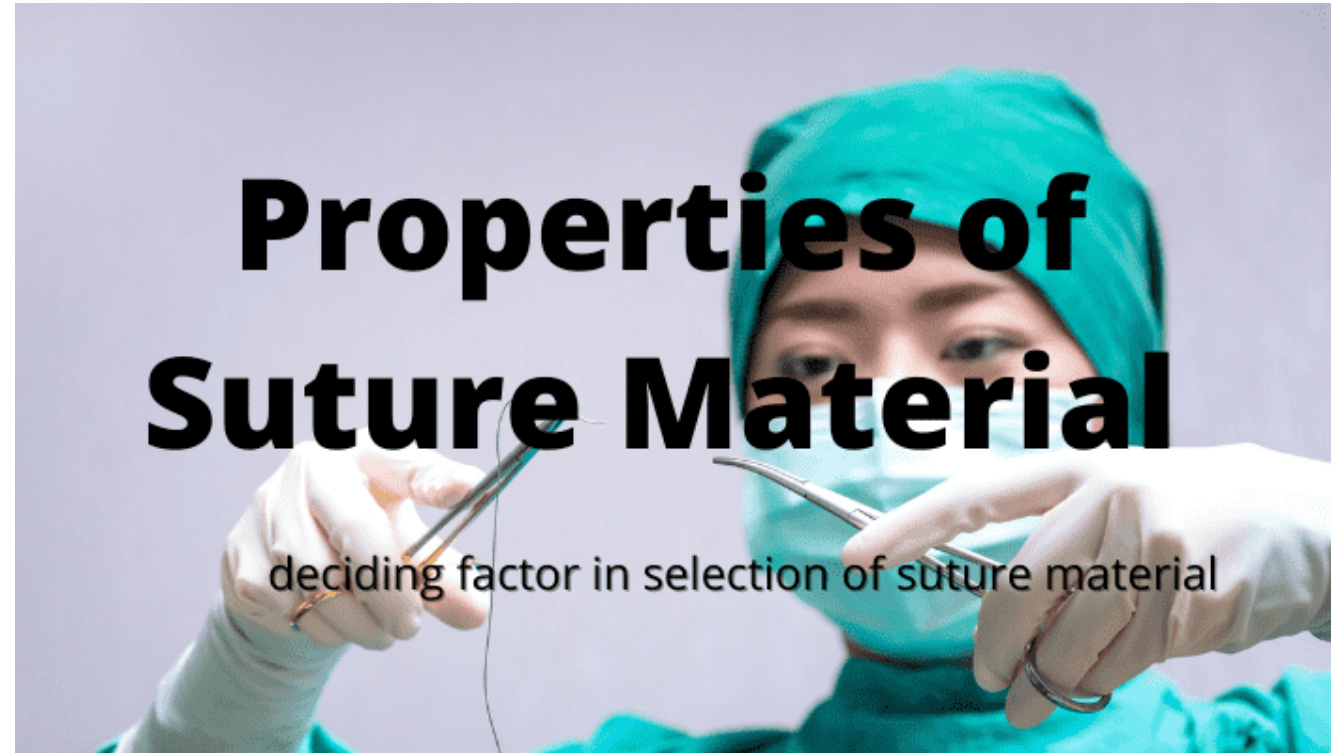
J-Shape

Curved Needle Shapes

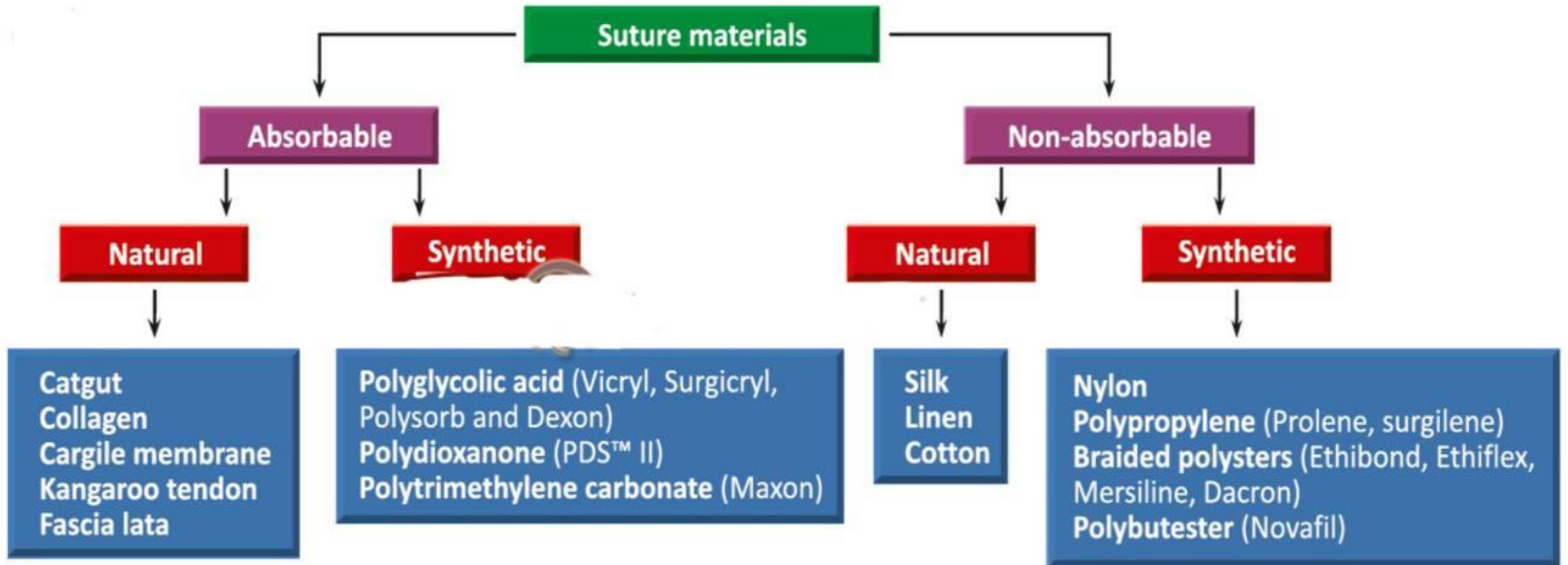
Sutures

Properties of ideal suture

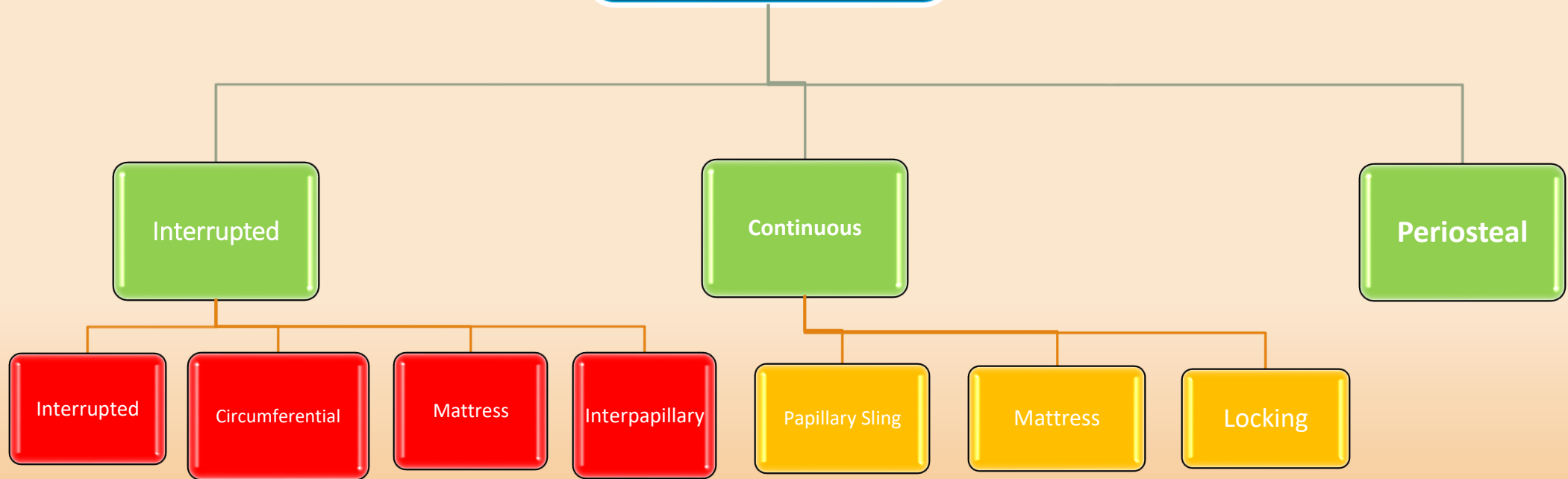
1. Perfect tension strength
2. Easy to use
3. Good know safety
4. Minimum tissue reaction
5. Compliance with tissue oedema or contraction
6. Prevent infection



Classification of suture materials.



Suturing Techniques



Interrupted Sutures

Indications

1. Vertical incision
2. Tuberosity and retromolar areas
3. Bone regeneration procedures.
4. Widman flaps
6. split-thickness flaps
7. implants

Types

1. Circumferential
2. Figure eight
3. Vertical or horizontal mattress
4. Intrapapillary placement

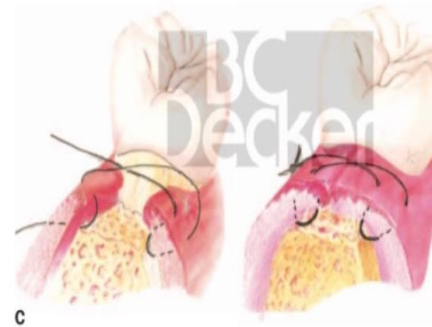
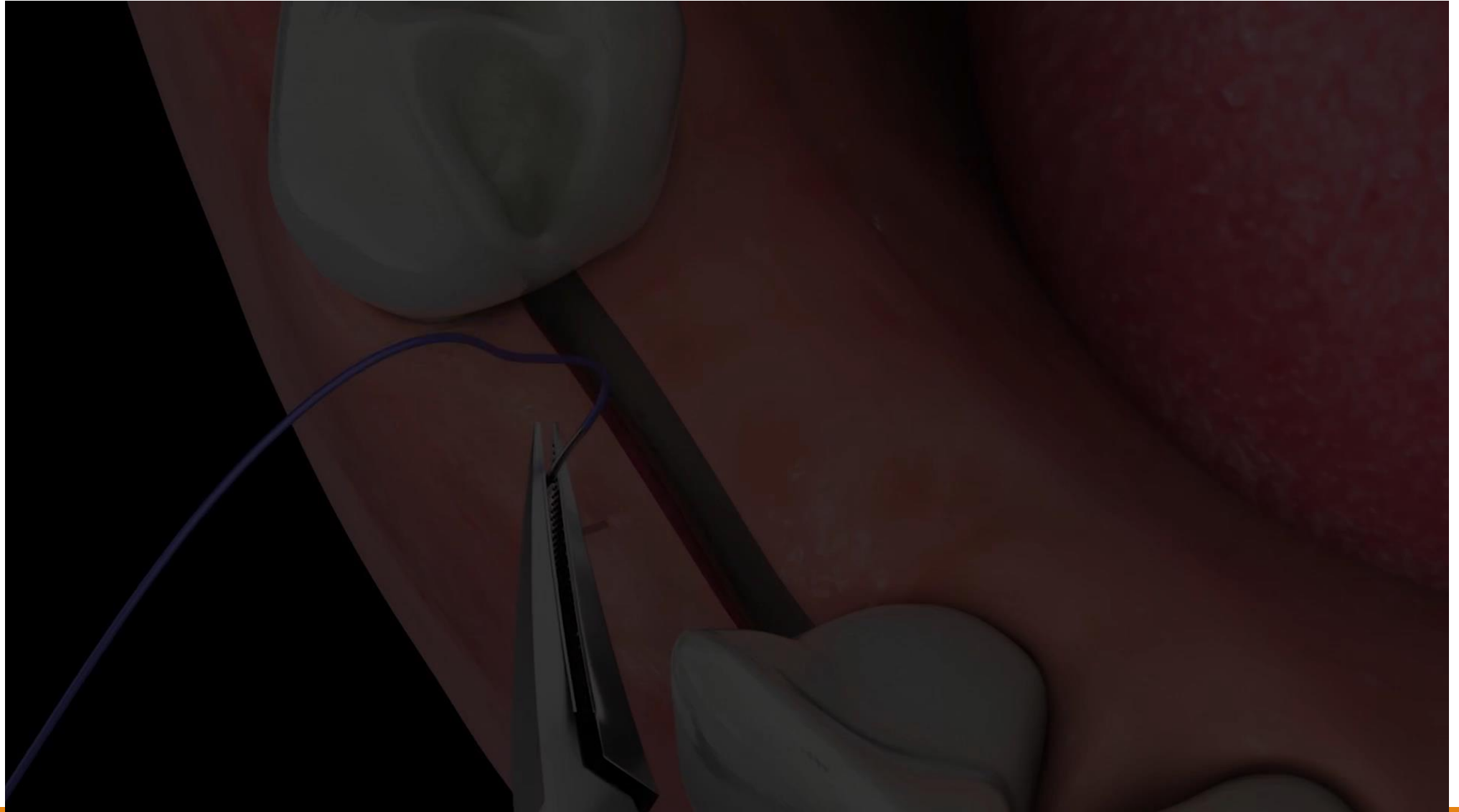


Figure Eight and Circumferential Sutures



Mattress Sutures

Advantages

greater flap security
and control

permit more precise
flap placement



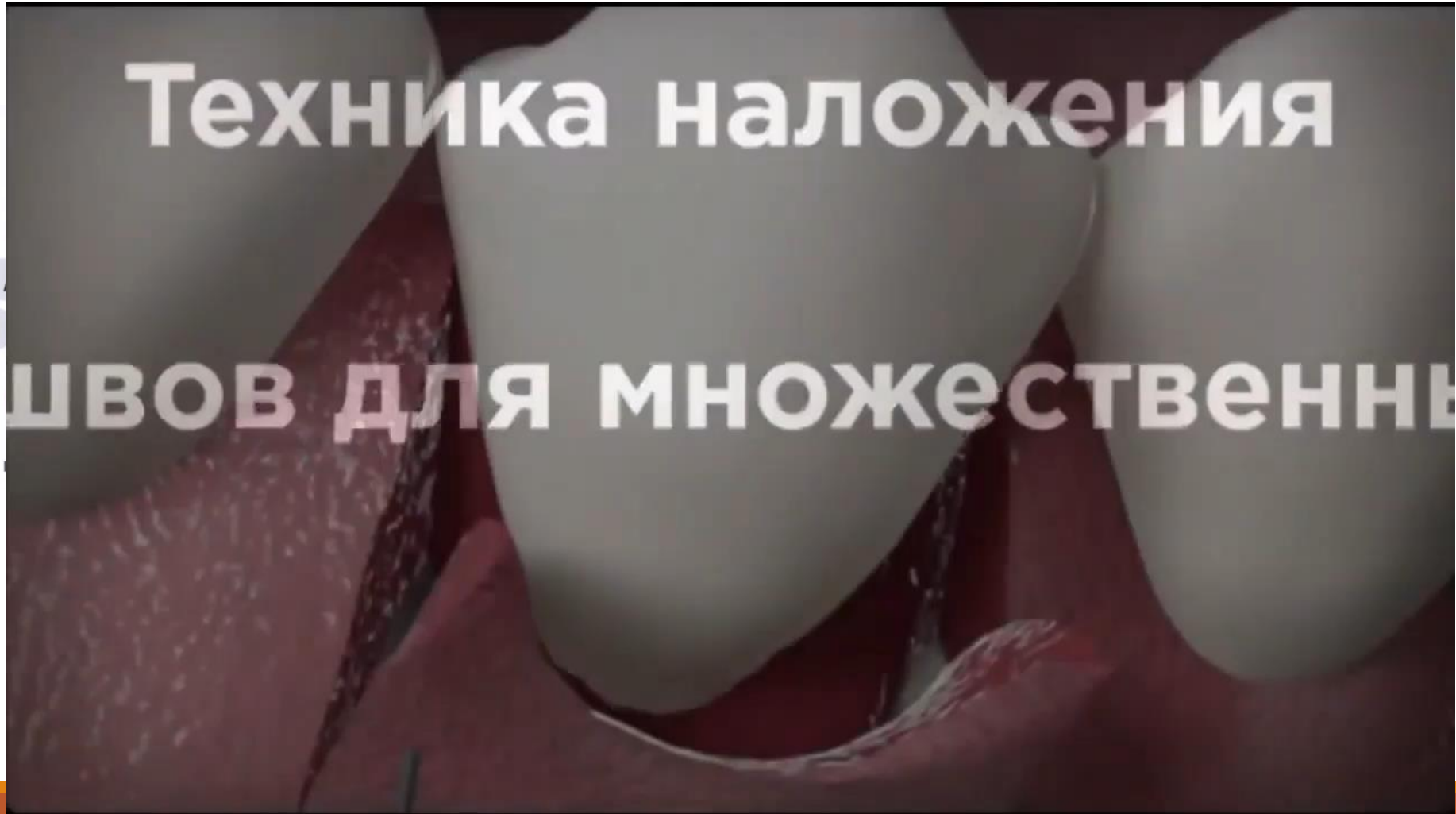
Intrapapillary Placement.

This technique is recommended for use only with modified Widman flaps and regeneration procedures in which there is adequate thickness of the papillary tissue.



Sling Suture

The sling suture is primarily used for a flap that has been raised on only one side of a tooth, involving only one or two adjacent papillae.



Laurell Modification

Specialized Interrupted
Suturing Techniques
for Bone Regeneration and
Retromolar and Tuberosity
Areas

Техника наложения

laurell-gotlow шва

Modified Flap Suturing Technique

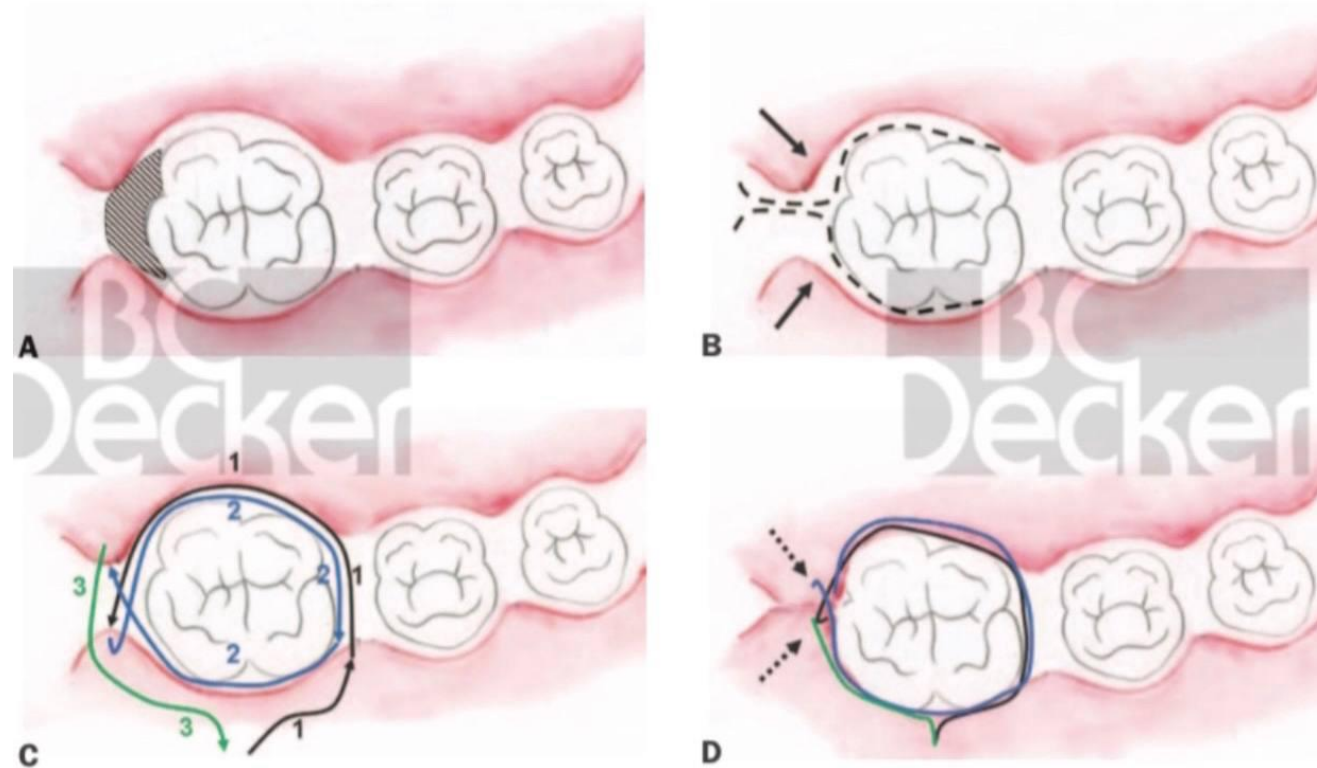
This technique was introduced specifically for achieving maximum interproximal coverage and primary closure over intrabony defect is treated by GTR.

The logo for PerioPIXEL 3D PERIODONTAL GRAPHICS is centered on a black rectangular background. The word "PerioPIXEL" is written in a light gray, sans-serif font. The letter "P" is stylized with a vertical dashed line to its left. To the right of "PerioPIXEL" is a small graphic consisting of three colored squares (red, green, and blue) arranged in a triangular pattern. Below "PerioPIXEL" is the text "3D PERIODONTAL GRAPHICS" in a smaller, all-caps, sans-serif font.

PerioPIXEL
3D PERIODONTAL GRAPHICS

Retromolar Suture Modification for Primary Coverage.

This technique is specially designed for gaining intimate tissue-tooth contact where regeneration is being attempted.



Retromolar area modified suture technique.

Continuous Sutures Sling

When multiple teeth are involved.

Advantages

1. Can include as many teeth as required
2. Minimizes the need for multiple knots
3. Simplicity
4. The teeth are used to anchor the flap
5. Permits precise flap placement
6. Avoids the need for periosteal sutures
7. Allows independent placement and tension of buccal and lingual or palatal flaps.
8. Greater distribution of forces on the flaps

Disadvantages

The main disadvantage: If the suture breaks, the flap may become loose or the suture may come untied from multiple teeth.

Types

1. Independent sling suture
2. Mattress sutures
 - a. Vertical
 - b. Horizontal
3. Continuous locking

Independent Sling Suture

The continuous sling suture , although most often begun as a continuation of tuberosity or retromolar suturing



continuous sling suture with terminal end loop.

Modification

When two flaps have been reflected and after the first flap has been sutured it is often desirable to continue about the distal surface of the last tooth

**Техника наложения
непрерывного подвешного шва**

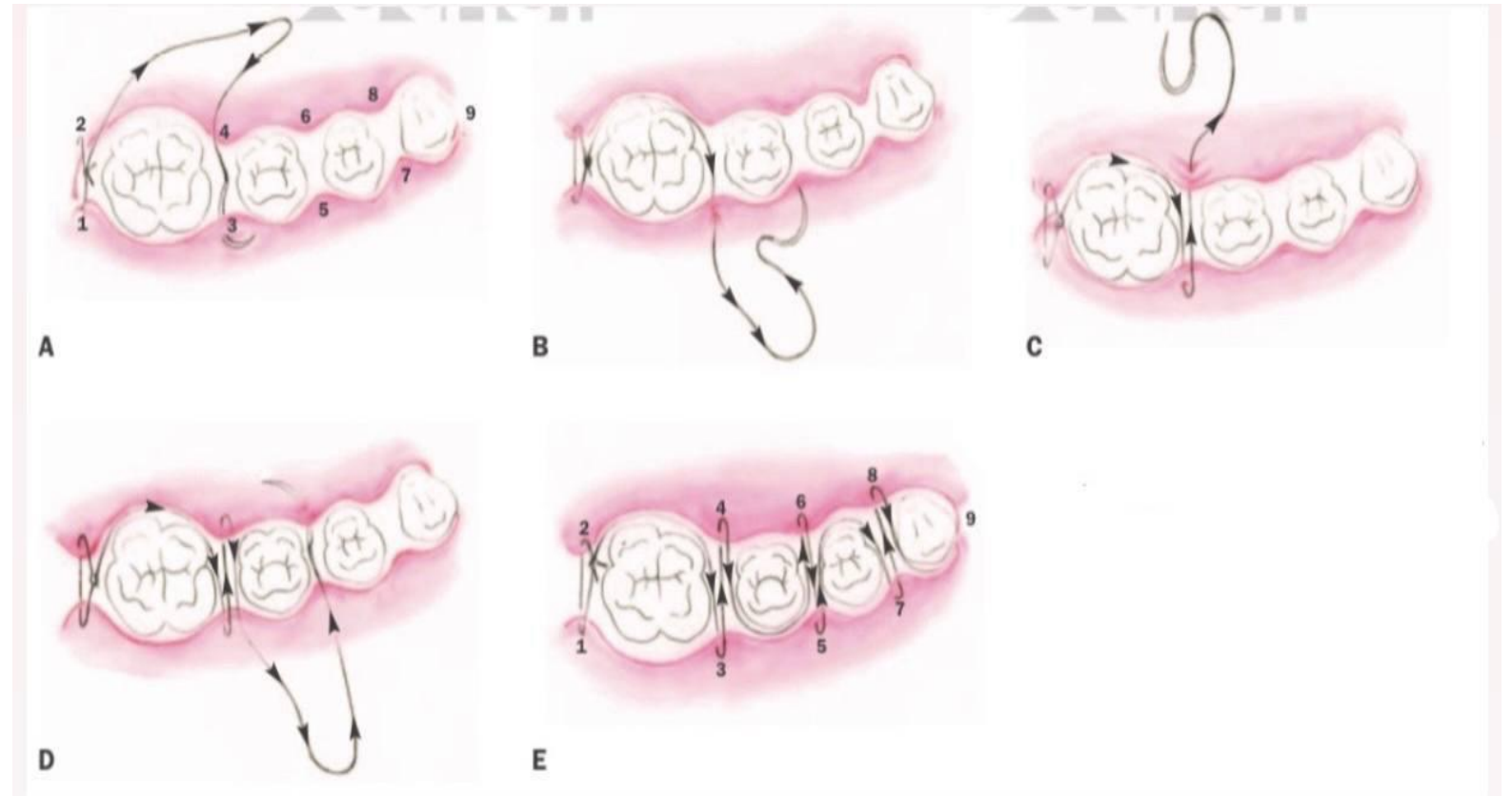
Alternative Procedure:

This technique simultaneously slings together both the buccal and lingual or palatal flaps.

INDICATIONS.

1. When flap position is not critical
2. When buccal periosteal sutures are used for buccal flap position and stabilization
3. When maximum closure is desired

Modification of continuous sling suture. This technique permits simultaneous suturing of both flaps.



Continuous Mattress Suture

When greater papillary control and stability and more precise placement are required or to prevent flap movement.

**Техника наложения
непрерывного матрацного шва**

Locking

The continuous locking suture is indicated primarily for long edentulous areas. It has the advantage of avoiding the multiple knots of interrupted sutures.

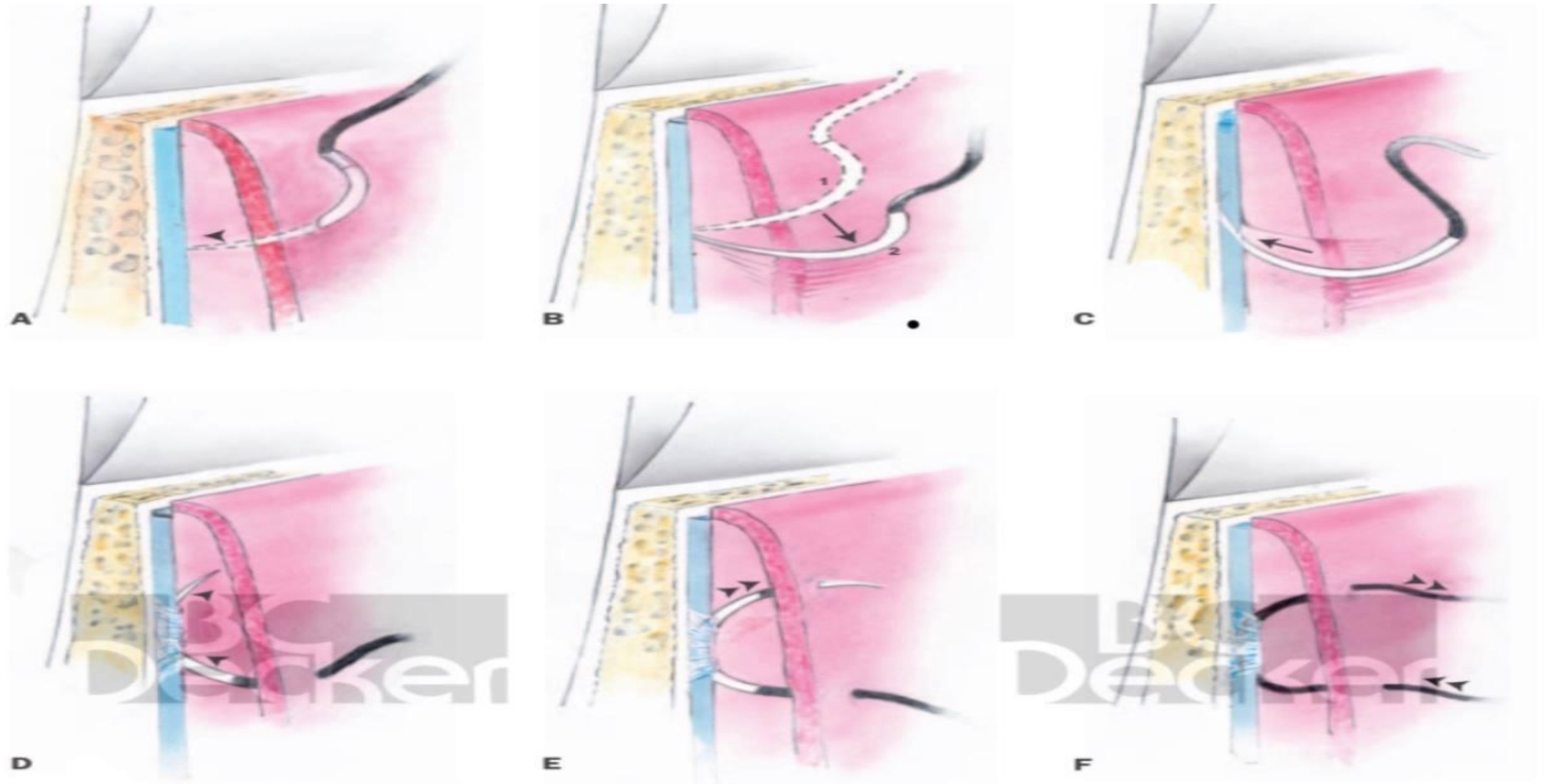
**Техника наложения
непрерывного замыкающего шва**

Periosteal Suturing

Periosteal suturing generally requires a high degree of dexterity in both flap management and suture placement.

Technique

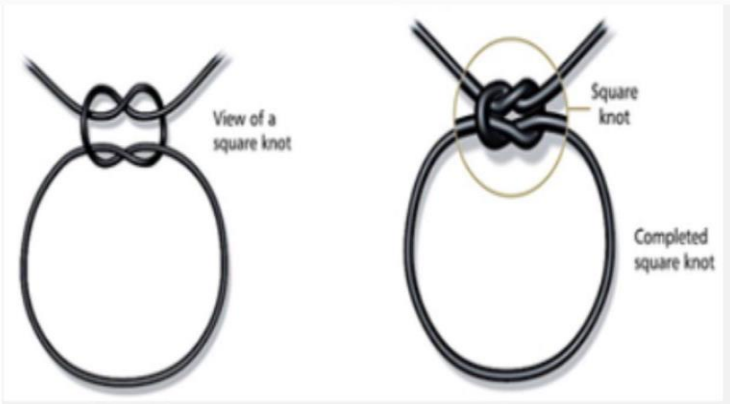
1. Penetration
2. Rotation
3. Glide
4. Rotation
5. Exit



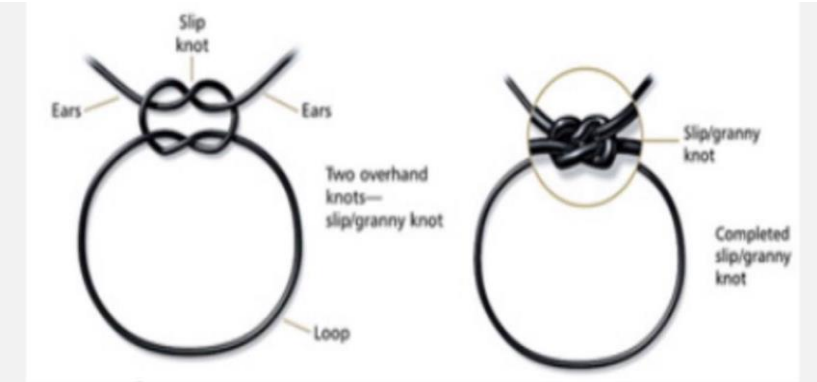
Knot and Knot Tying

Types of knots

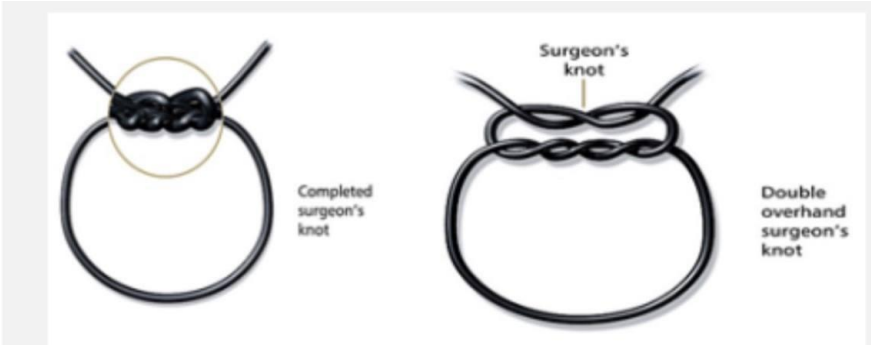
1. Square knot



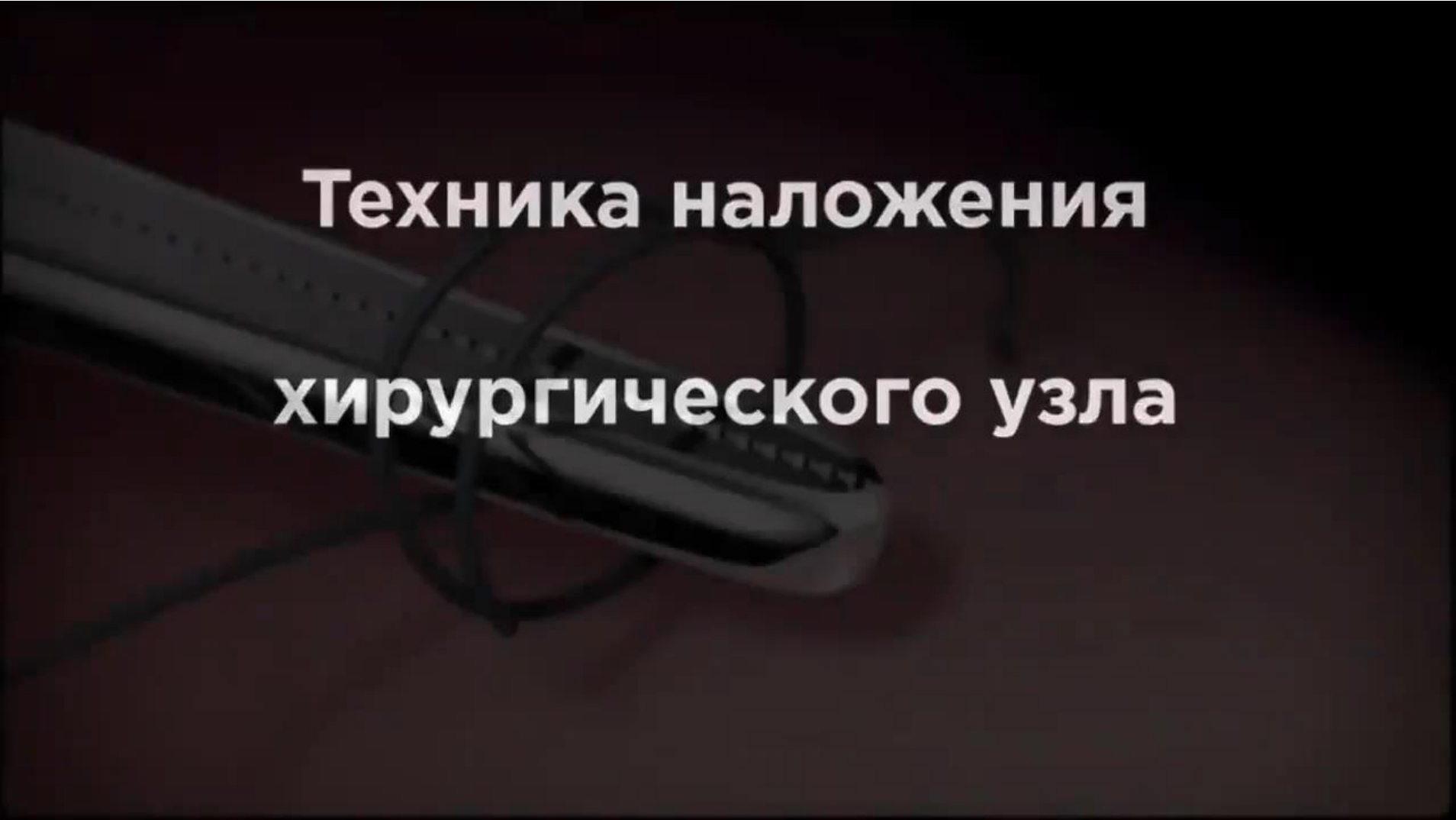
2. Granny knot



3. Surgeon knot



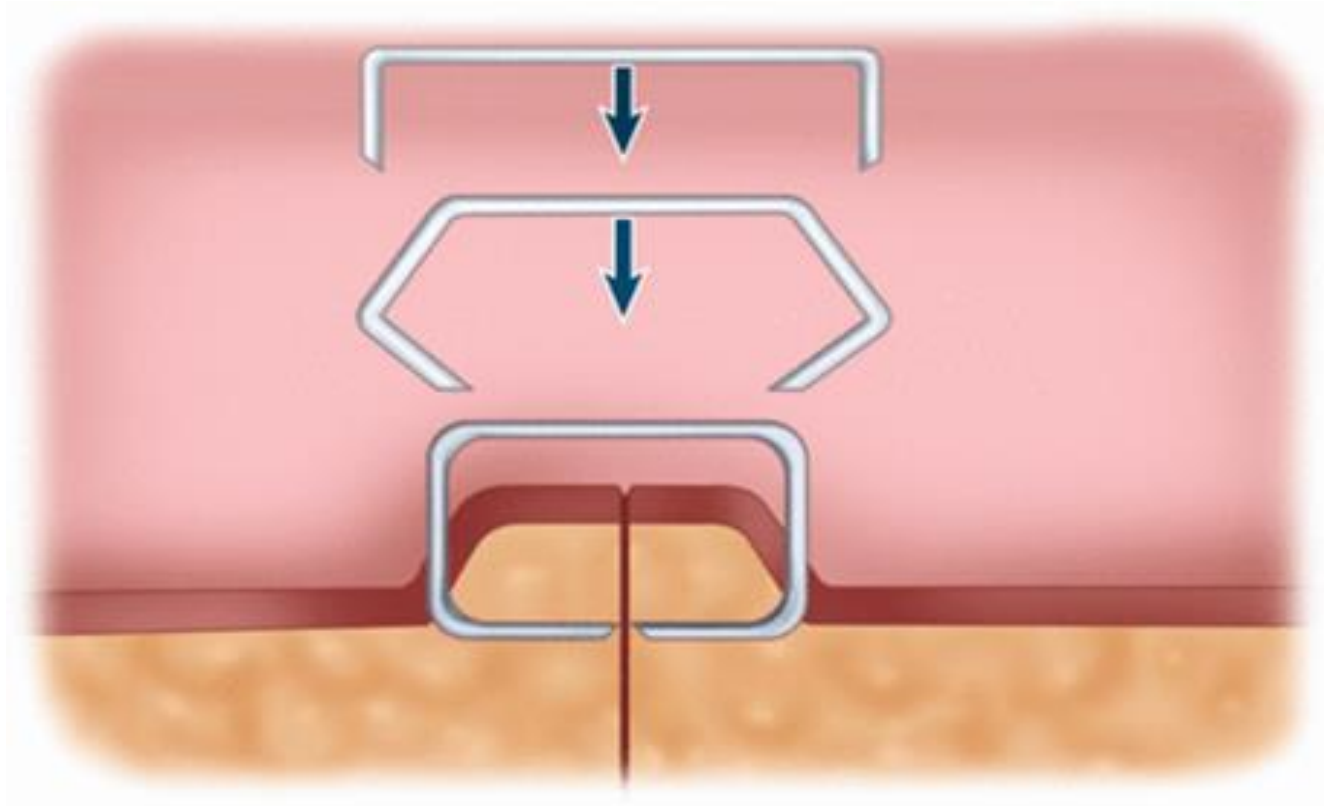
Surgical Knot



**Техника наложения
хирургического узла**

Suturless Techniques

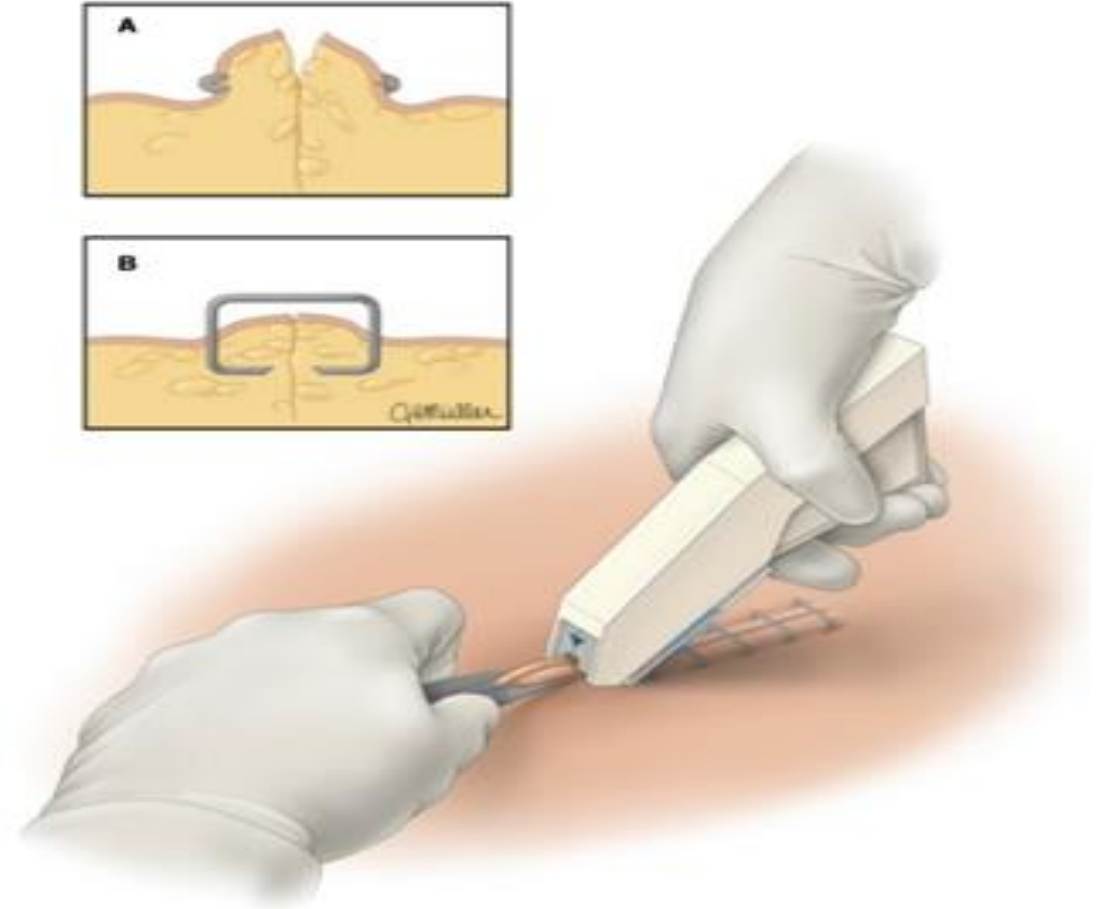
The sutureless technique involves the approximation of the flaps without suturing. This sutureless technique was found to have less postoperative pain, swelling and reduced incidence of trismus.



Sutureless techniques:

1) Staples

The principle of using staples is similar to the stapling device in which the staples are used for wound approximation.



2) ADHESIVE TAPES

Adhesive tapes or strips are the tapes made up of microporous material with adhesive on one side. These may be used as additional support for wounds that have been approximated with the surgical adhesive.



3) ADHESIVES AND SUPERGLUES

It is a liquid monomer which polymerises on contact with substance such as blood, saliva and becomes sticky



Commercially available tissue adhesives containing concentrated fibrinogen, fibronectin, and factor XIII have been used as a means of promoting an early and stable bond between the gingival flap and the exposed root surface and for benefits provided to wound healing.



GluStitch Inc.

PeriAcryl®90 High Viscosity



Make sure your surgery wins the best dressed award!
PeriAcryl®90 is a special blend of butyl and octyl cyanoacrylate adhesives that are specially designed to perform in the oral cavity. This formulation creates a strong yet flexible dressing that assists in surgical closure and protects and stabilizes the surgical site. PeriAcryl®90 High Viscosity is a thicker formulation that allows for precise application due to enhanced flow control.

Benefits of PeriAcryl®90

PeriAcryl®90 forms a zone of inhibition against bacteria that can cause infection.

Using PeriAcryl®90 helps stop bleeding and seals off wounds to reduce surgical time spent on achieving hemostasis or placing sutures.

PeriAcryl®90 is a strong and comfortable dressing compared to dental packing that can feel bulky and fall off too soon.

Characteristics of PeriAcryl®90

- Polymerizes rapidly in contact with water or moist oral tissue.
- Stays in place for up to 14 days when a multi-layer application is made.
- Dyed violet for increased visibility during application.
- Biocompatible and non-toxic.

4) Fibrin glue



A



B



C



D



E

Applications of Fibrin Glue in Oral & Dental Surgery:

- 1) Local hemostatic measures in patients with bleeding disorders and patients on anticoagulants.
- 2) Sealing of oro-antral fistula.
- 3) Correction of periodontal bony defect.
- 4) Tissue adhesive with bone chips to treat bone defect



Fibrin glue kit system

