

RADY FACULTY OF HEALTH SCIENCES

Introduction to Restorative Dental Hygiene

Restorative Techniques for Dental Hygienists

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Objectives

- Following completion of this session, participants will be able to:
 - Demonstrate appropriate documentation for restorative dental hygiene procedures
 - Discuss and demonstrate effective isolation strategies
 - Discuss the advantages and limitations of rubber dam placement
 - Discuss and demonstrate effective matrix system placement

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Scope of Practice - Reminder

- Following the completion of this course, please refer to your provincial practice guidelines to ensure that you are practicing in accordance with your provincial regulatory body
- Different provinces = different practice standards



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Restorative Dental Hygiene - Safety

- Throughout the course of this program you will be dealing with hazardous materials and bodily fluids, thus strict infection control and PPE is required.
- Clinic: Universal Protocols for infection control
- Lab: Personal Protective Equipment (PPE) required
 - Standard clinic attire (pants, scrub top and/or lab coat, closed toe shoes, hair tied back)
 - Gloves and a mask must be worn for all laboratory procedures.

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Documentation

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Documenting Restorative Procedures

- Accurate documentation is a critical component to the effective delivery of healthcare
 - Important for patient safety and care planning
 - Acts as a communication tool to future clinicians
 - Legal documentation
 - Forensic uses
 - Financial audits
 - Quality assurance audits



Darby, M. and Walsh, M. (2015). *Dental Hygiene: Theory and Practice* (4th ed.). Elsevir. St. Louis, MO.



Documenting Restorative Procedures

- Dental record must include:
 - Vital Notes
 - Medical history update
 - Local anesthetic documentation
 - Restorative procedural documentation
 - Post-operative instructions
 - Non-Vital Notes
 - Patient tolerance
 - Individual factors unique to the patient (i.e. pt comments, pt preferences, etc.)



Dauby, M. and Walsh, M. (2015). *Dental Hygiene: Theory and Practice (4th ed.)*. Elsevir. St. Louis, MO.



Documenting Restorative Procedures – An Example

Restoration: 36DOL Composite

NCMx. BP=130/80.

Xylonor topical placed for 2 minutes. 1 capsule of Lidocaine 2% (1.8mL per carp) (1:100,000 epi). IA, LB, L injections, NAE.

Prep: Dr. M. Smith, Resto: K. Cook

36DOL Equia Forte, OptiBond, Shade: A2

(**Tooth**, surface, restorative material (brand), bonding agent, shade used)

Occlusion confirmed with bite registration.

Post-Op instructions given. Pt tolerated procedure well. Pt requests neck pillow.

K. Cook, RDH

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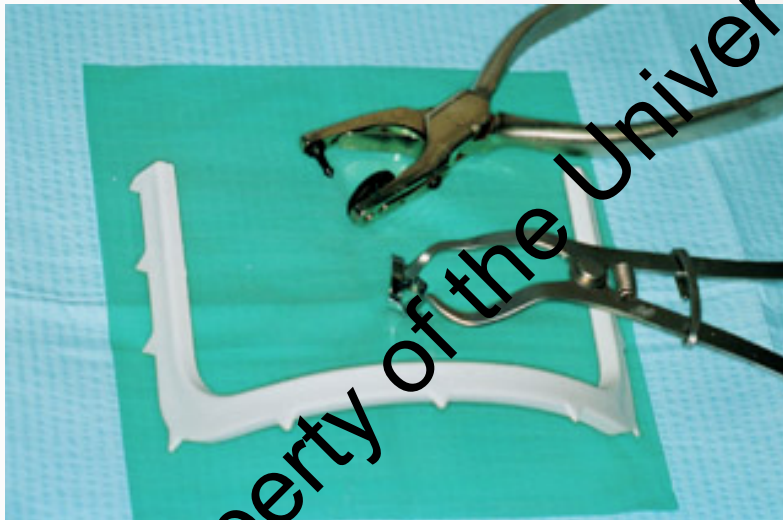
Isolation Techniques

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Methods of Moisture Control

Rubber Dam



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Rubber Dam – Advantages

- Improves visibility of the operative field
- Part of the “Barrier Technique” for infection control
- Protects soft tissue
- Optimizes properties of restorative materials.
- Prevents ingestion of foreign materials
- Isolates medicaments (endodontics, etchants, etc.)
- Psychological barrier



Hatrick, C. & Bakke, W. S. (2016). *Dental Materials: Clinical Applications for Dental Assistants and Dental Hygienists* (3rd ed). St. Louis, MI: Elsevier Inc.

Images: courtesy of Dr. Tana Gilmartin



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Rubber Dam - Limitations

- Patient apprehension
- Mouth breathers
- Gaggers
- Poor anchors
 - conical teeth
 - unerupted teeth
- Limited accessibility
- Latex Allergy – use non-latex rubber dam



*(Fill out pages 18-19
in your lab manual
for future reference!)*

Hatrick, C. & Bakle, W. S. (2016). *Dental Materials: Clinical Applications for Dental Assistants and Dental Hygienists* (3rd ed). St. Louis, MI: Elsevier Inc.

What are some solutions?



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Methods of Moisture Control

Other methods:

- where rubber dam use is limited
 - Cotton Rolls
 - Saliva ejectors
 - Absorbent discs
 - Garmers Clamp

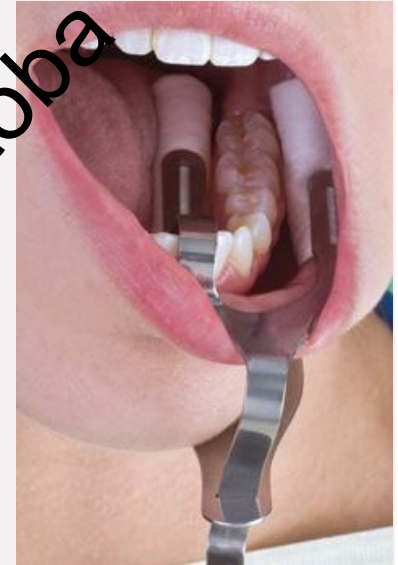


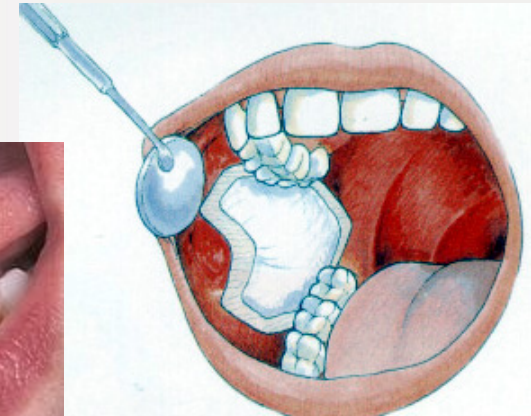
Image: <https://www.practicon.com/>



Image: <https://www.pocketdentistry.com>



Image: <https://www.pocketdentistry.com>



Hatrick, C. & Bakke, W. S. (2016). *Dental Materials: Clinical Applications for Dental Assistants and Dental Hygienists* (3rd ed). St. Louis, MI: Elsevier Inc.



Rubber Dam – Supplies

- Rubber dam material
 - Types and sizes:
 - Latex, non-latex
 - Light, medium, heavy and extra heavy
 - Various colors
 - 5x5, 6x6, rolls
 - Flavours



Hatrick, C. & Bakke, W. S. (2016). *Dental Materials: Clinical Applications for Dental Assistants and Dental Hygienists* (3rd ed). St. Louis, MI: Elsevier Inc.

Images: <http://www.delhimed.com/rubber-dam-sheets-6x6-api>
<http://www.shadeguide.com>



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Rubber Dam - Supplies

- Punch:



- Forceps:



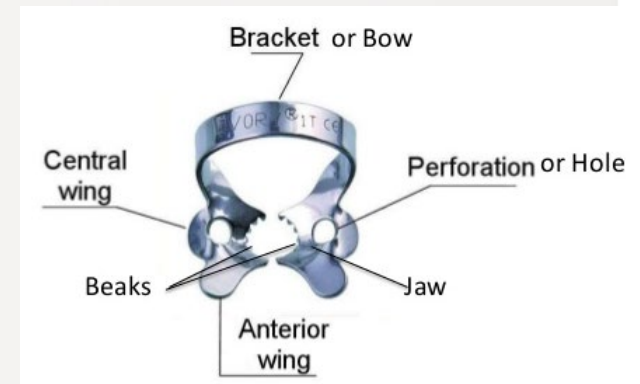
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Rubber Dam - Supplies

- Retainers (clamps)
 - large assortment available



- **Winged** - small projections allow it to be mounted on dam prior to application
- **Wingless** - applied directly to tooth
- Can be customized



Images: allfourdentist.com



Rubber Dam - Supplies

- Frame – metal, plastic
- Rubber dam stamp or punch guide (optional)
- Lubricant – water soluble
- Floss
- Metal plastic instrument (inverting)
- Scissors



Images: <http://www.intelligentdental.com/>

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Clamp Ligation

- A 12" piece of floss should be attached to the retainer/clamp and threaded through both holes to catch all of the pieces should the retainer break.
- Prevents the patient from accidentally swallowing the retainer/clamp.



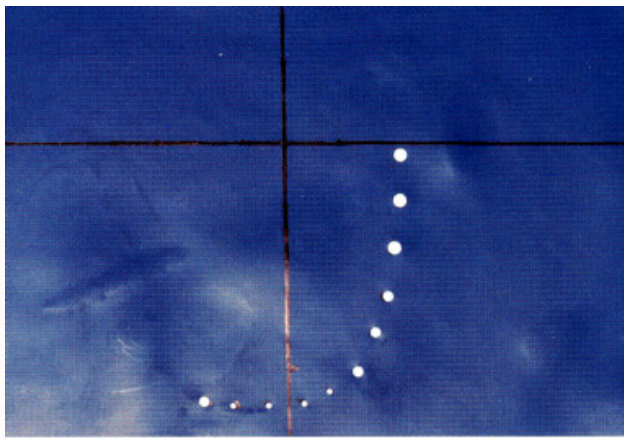
Rubber Dam Placement Options

1. Clamp on first
2. Clamp and rubber dam on together
3. Clamp, rubber dam, and frame on all together

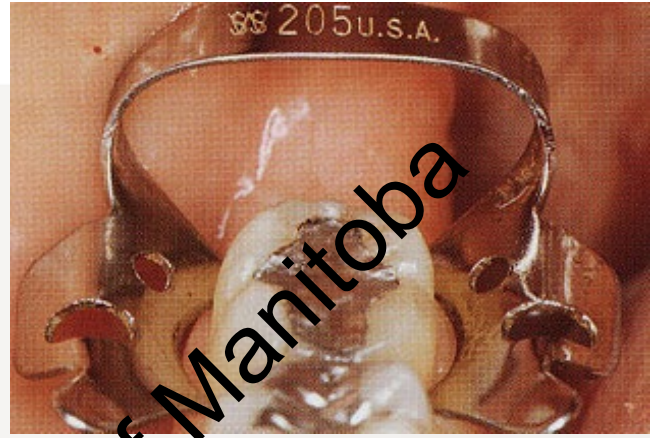


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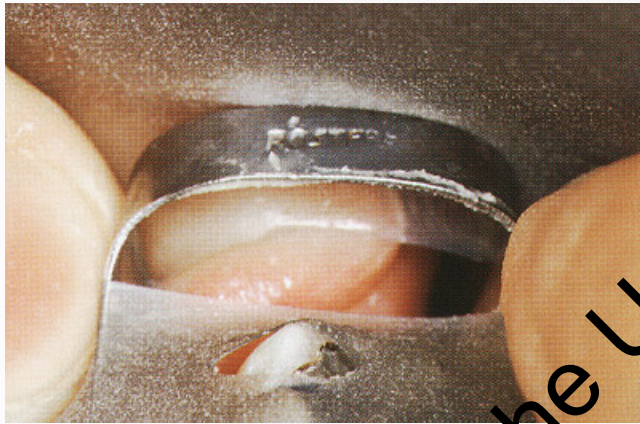
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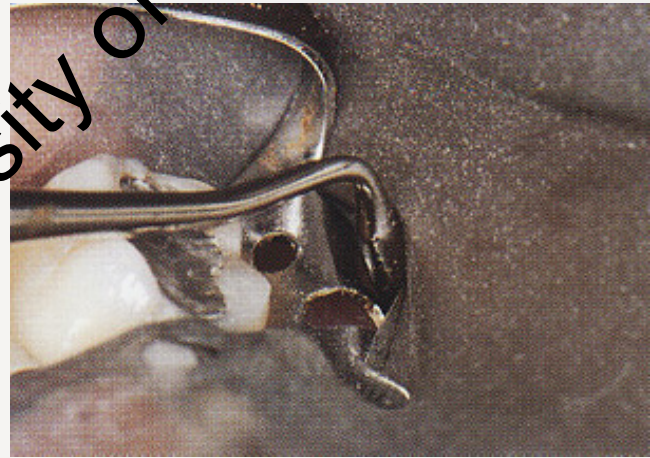
2



3



4



5



6



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Criteria for Acceptable Rubber Dam Placement

- Moisture control is established
- Adequate exposure of teeth to provide visual access and adequate finger rests
- Dam is stabilized and secure with an absence of tissue damage
- Clamp is properly ligated
- Dam is properly inverted
- Patient is comfortable

See page 85-86
in Lab Manual

Removal of Rubber Dam

- Thoroughly cleanse area
- Stretch rubber dam facially and cut each interproximal septum with scissors
- Remove clamp with clamp forceps
- Remove dam and examine it for any missing pieces
- Examine site for remaining rubber; remove with floss or explorer
- Rinse oral cavity, wipe off patient's lips

Rubber Dam Placement

<https://www.youtube.com/watch?v=JK7k0djYYEs>
(3:18)

<https://www.youtube.com/watch?v=7fqluQvinCM>
(2:34)

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Errors in Rubber Dam Placement

- Incorrect frame placement
- Lack of or errors in ligation technique
- Dam interference
- Improper clamp placement
- Improper anchor selection
- Etc.

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Frame upside down

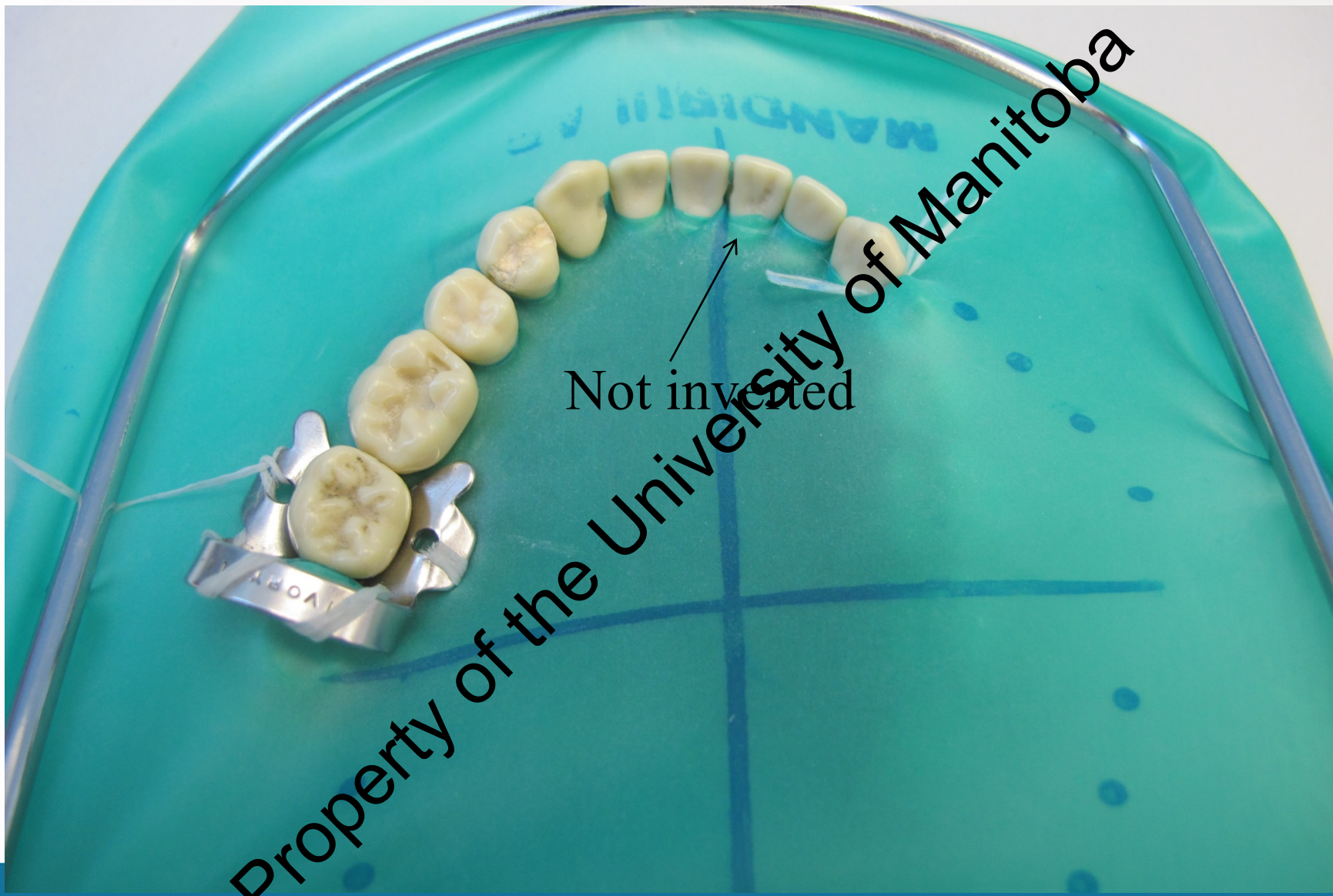
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Clamp not ligated

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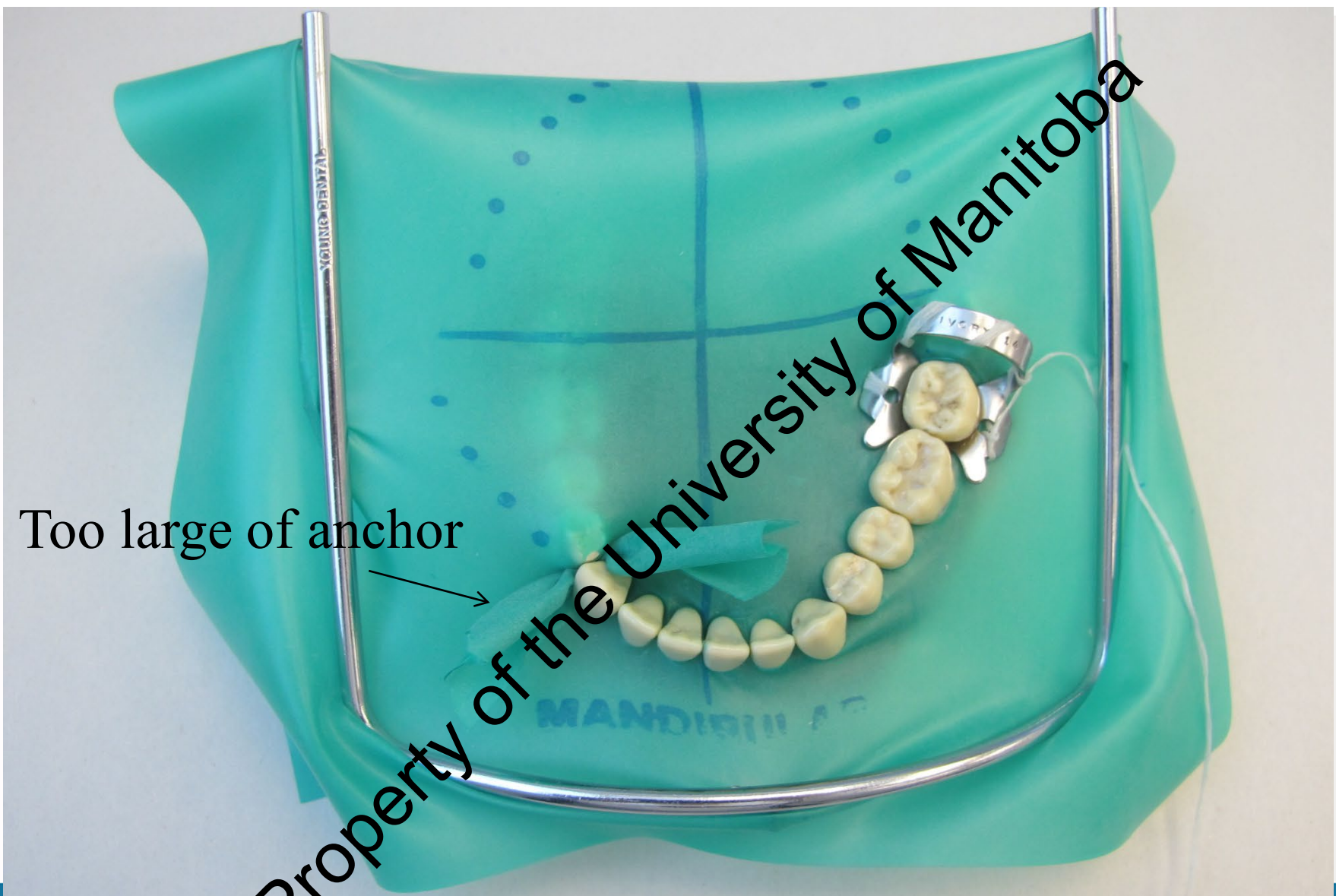




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← Rubber dam over wing of clamp

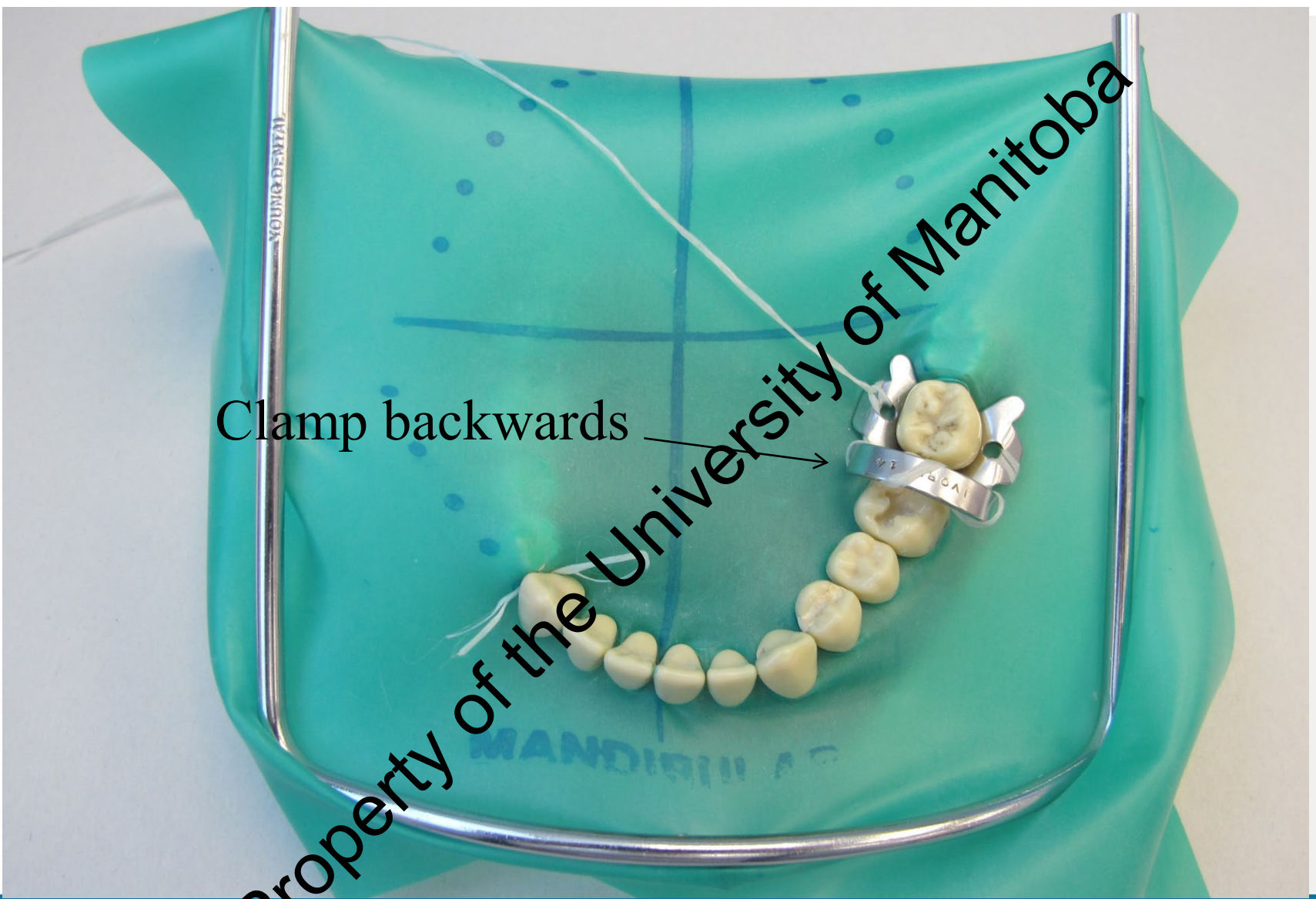


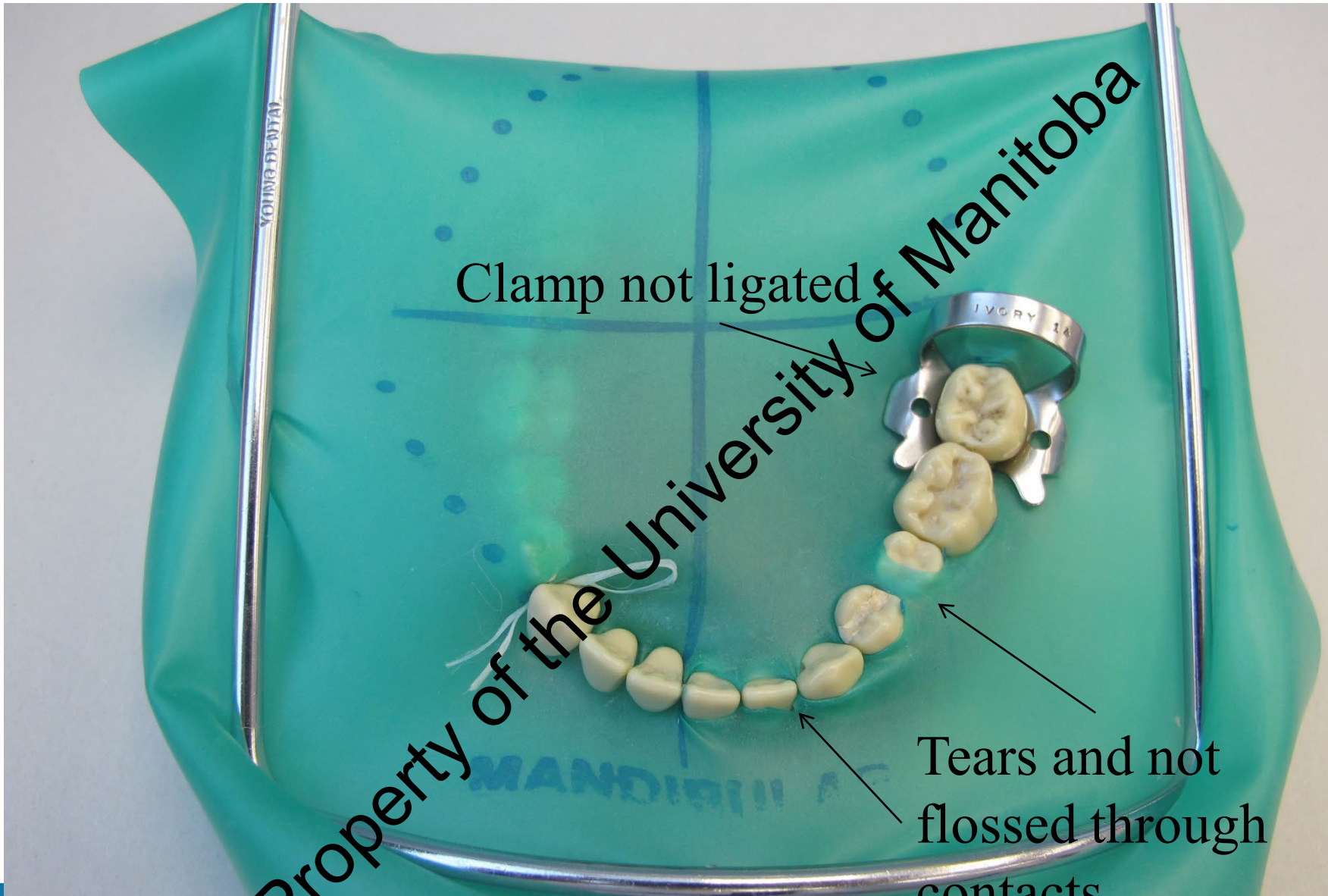
Too large of anchor

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Clamp backwards

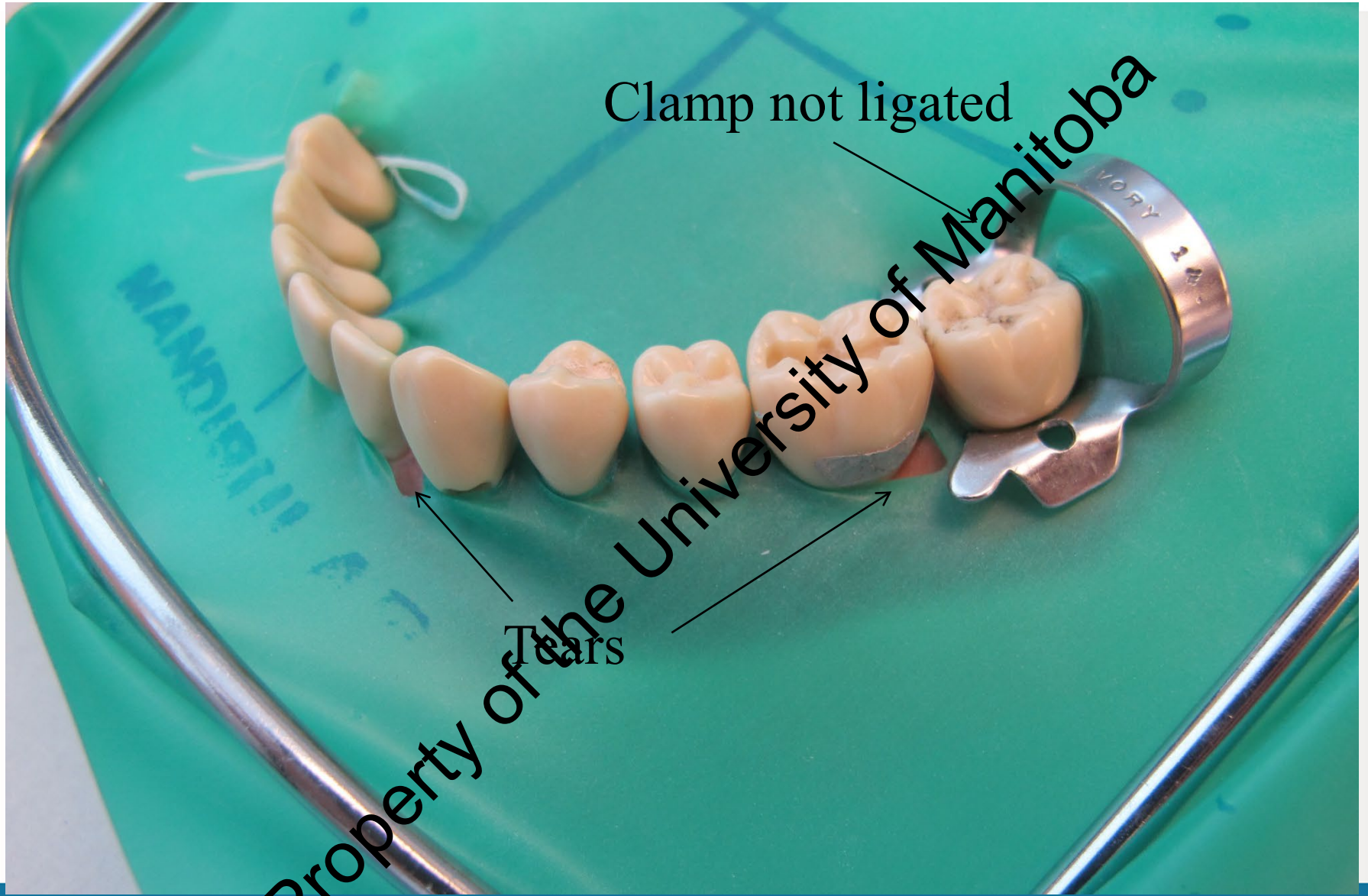




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Clamp not ligated

Tears and not flossed through contacts



Clamp not ligated

Tears

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Punched holes remain attached



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Clamp over rubber dam and clamp poorly ligated

Matrix Systems

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Matrix System

- Purpose:

- To provide a wall to contain the plastic restorative material during placement
- To help restore the proper contour to the tooth
- To protect the surrounding soft tissue during placement of a restoration

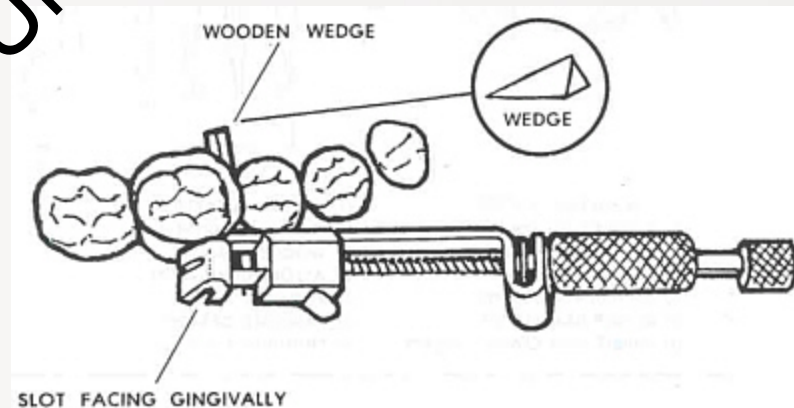


Image: <http://www.practicon.com/item/universal-matrix-band-retainer>

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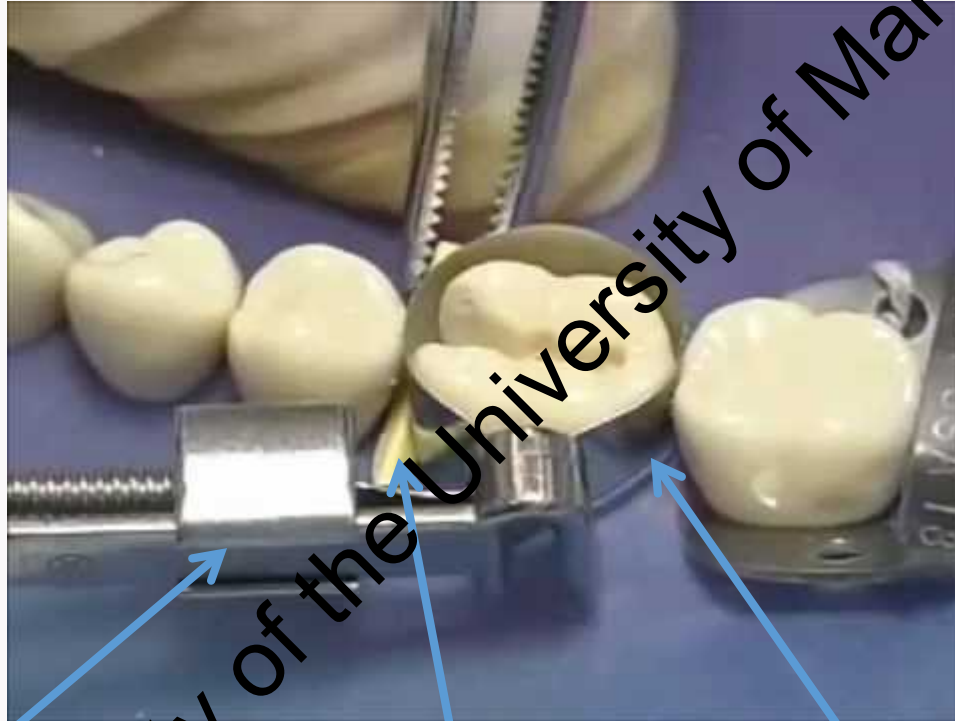
Matrix System

- Consists of:
 1. a band
 2. a retainer
 3. a wedge
- The most popular matrix system available is the Tofflemire matrix
- Other systems are available – Ex) sectional matrix systems

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Tofflemire Matrix System



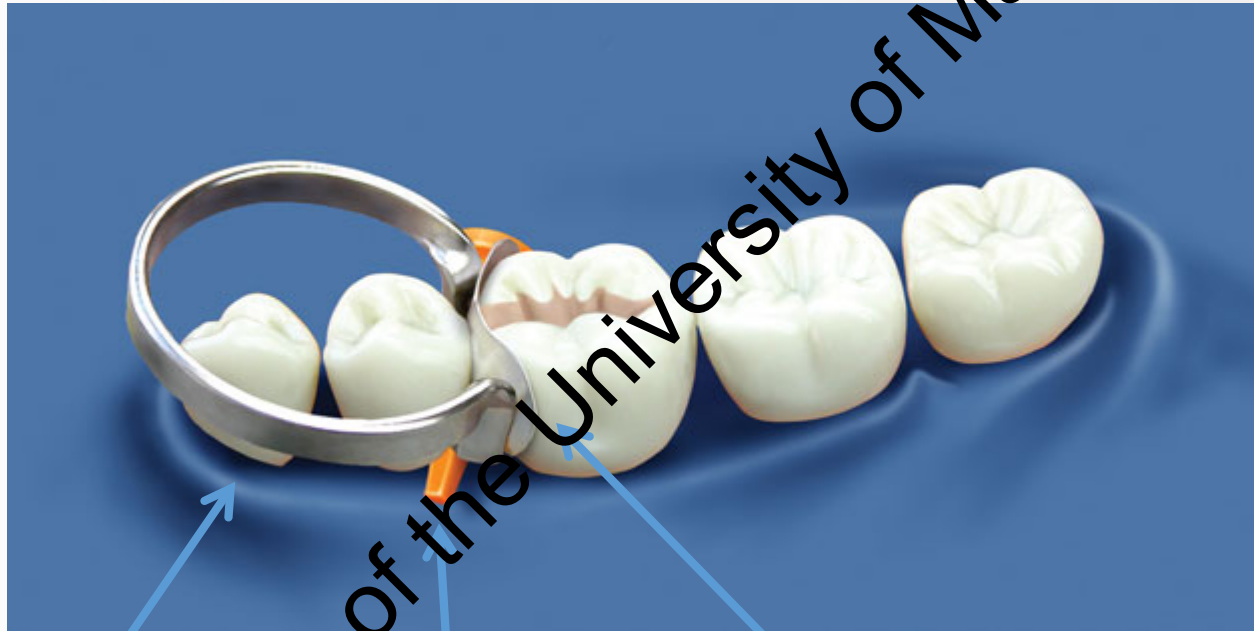
Matrix Retainer

Wedge

Matrix Band

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Sectional Matrix System



Matrix Retainer

Wedge

Matrix Band

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(1) Matrix Bands

- **Metallic**

- Mainly used for amalgam restorations but can be used for composite
 - metal sectional matrix systems are used with composite
- Variable thickness and shapes
- Mostly stainless steel or copper/brass

- **Non-metallic**

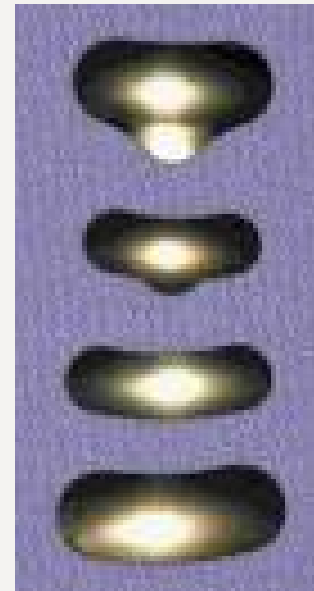
- Used for composite restorations
- Strips, rarely shaped
- Celluloid/plastic
- Light translucent

Matrix Bands - Metallic

Tofflemire Matrices



Sectional Matrices



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Matrix Bands – Non-Metallic

Celluloid/Mylar/Plastic Matrix



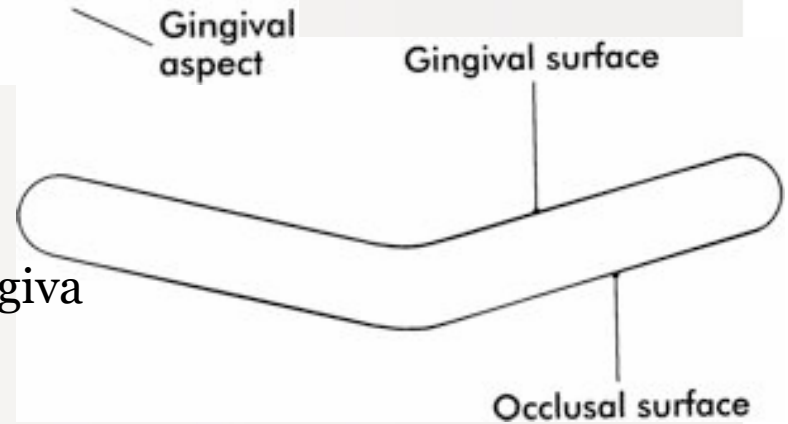
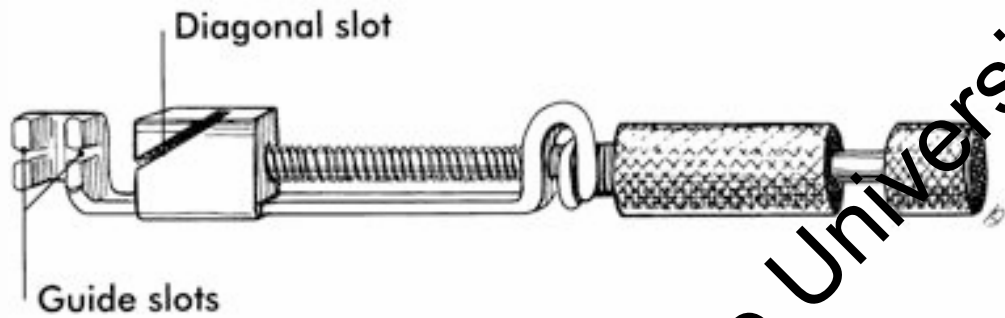
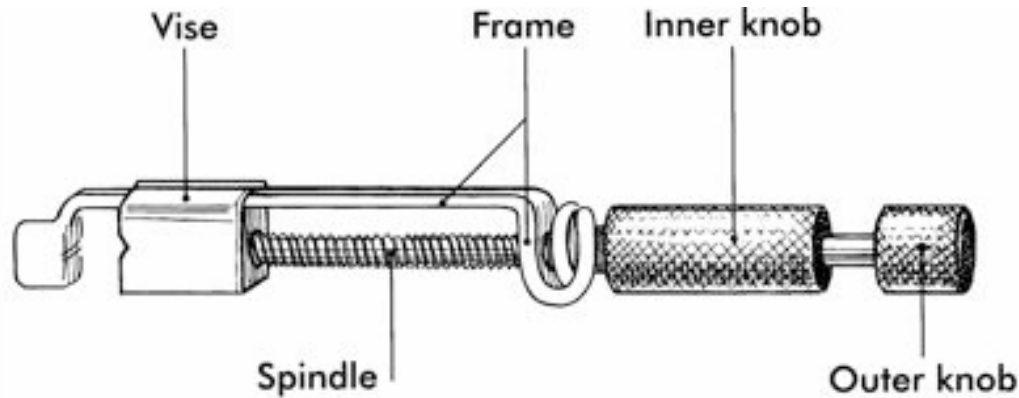
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(2) Matrix Retainer

- Used to hold the band in a stable position during placement of the restorative material
 - Should be of a simple convenient design to use
 - Should be strong enough for reliable performance



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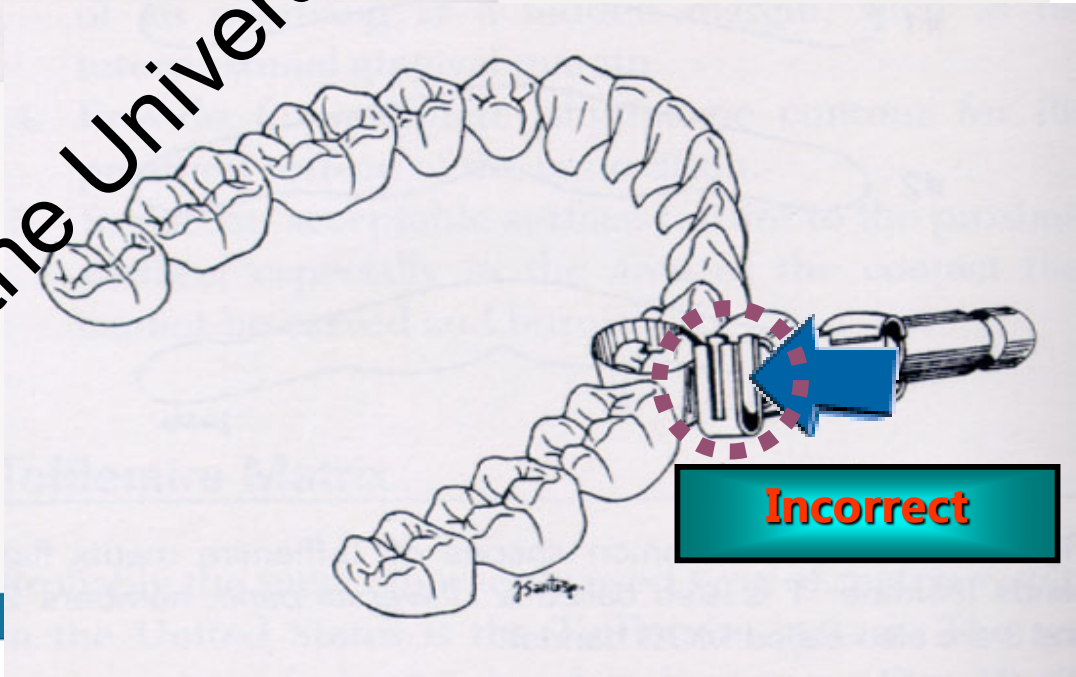
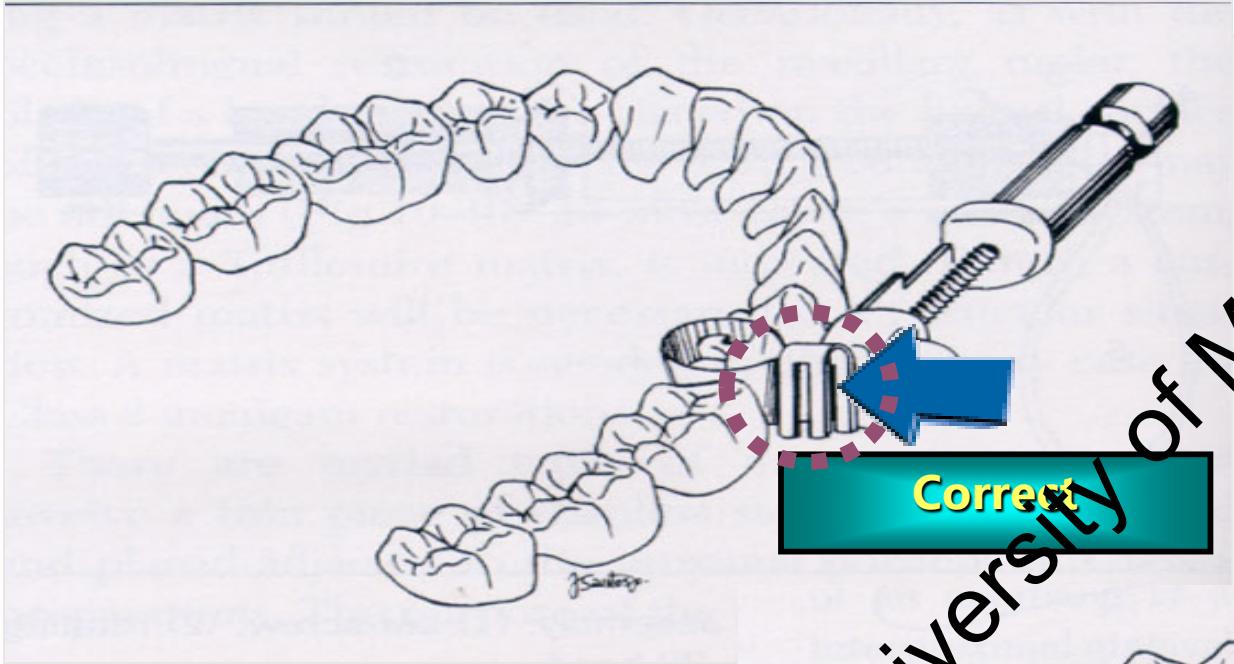
MATRIX RETAINER: Guide slots – towards gingiva

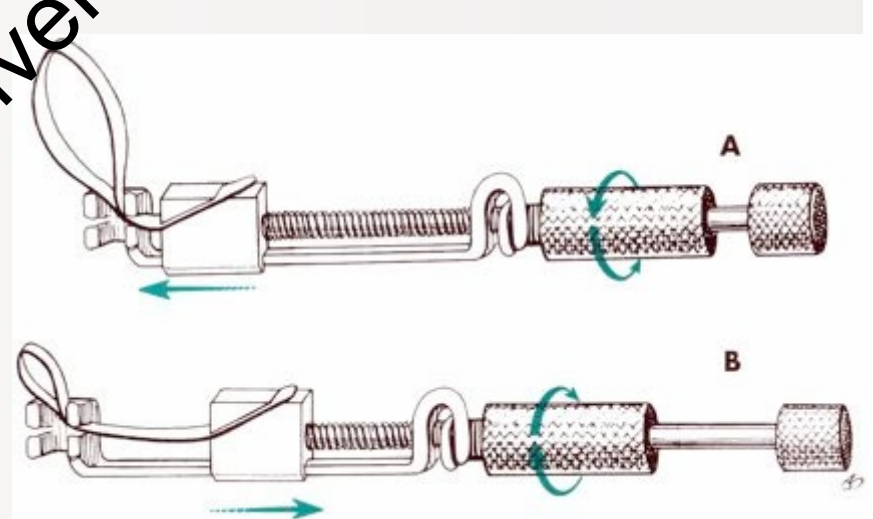
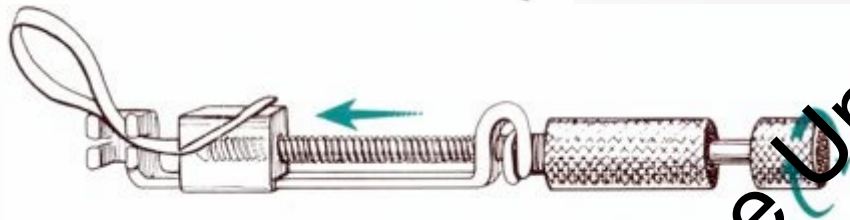
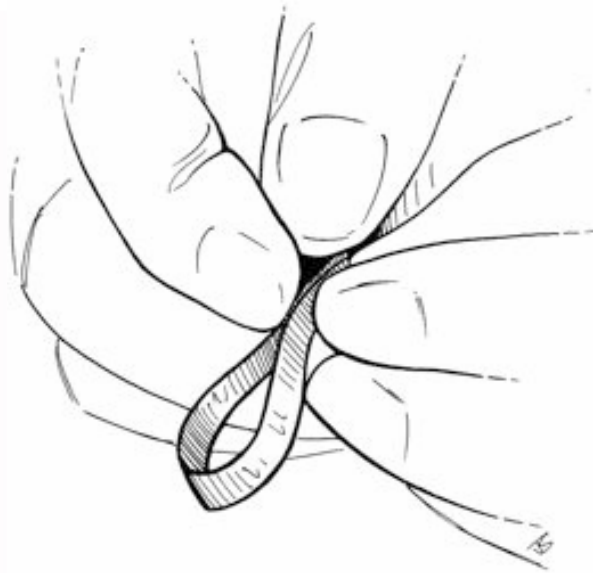
BAND: Narrow side – towards gingiva

Finkbeiner, Betty Ladley Finkbeiner. *Comprehensive Dental Assisting*. 1995: Elsevier, 1995. 27.5.1).



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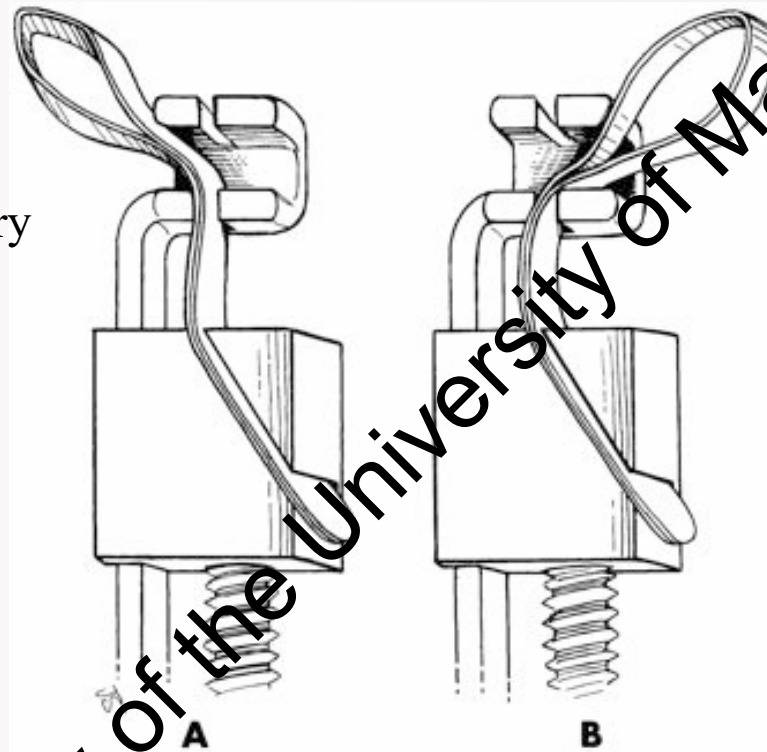
Finkbeiner, Betty Ladley Finkbeiner. *Comprehensive Dental Assisting*. 1995: Elsevier, 1995. 27.5.1).



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A - Retainer and band prepared for the maxillary left and the mandibular right.



B - Retainer and band prepared for the maxillary right and the mandibular left

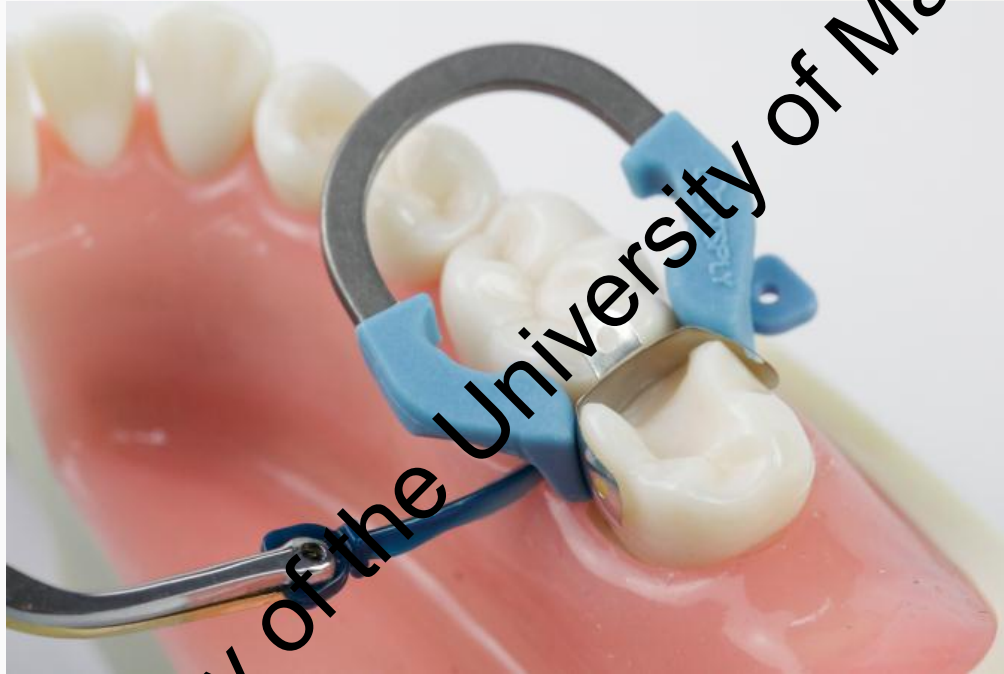
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Matrix Retainers - Sectional



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(3) The Wedge

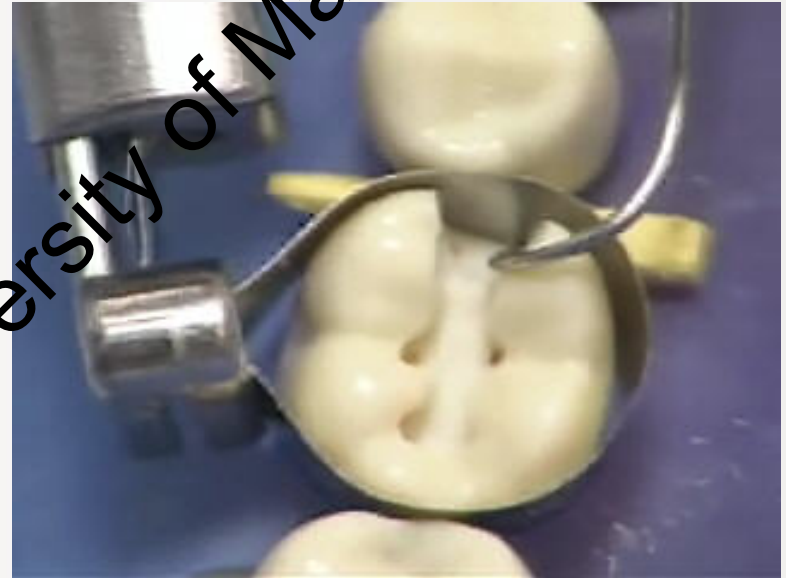
- Usually made out of wood
 - recently some synthetic wedges are available
- Shaped like a wedge, triangular in cross section
- Can be inserted from the buccal or lingual
- Available in different sizes
 - Appropriate size selection is important
 - Some embrasure spaces may require more than one wedge



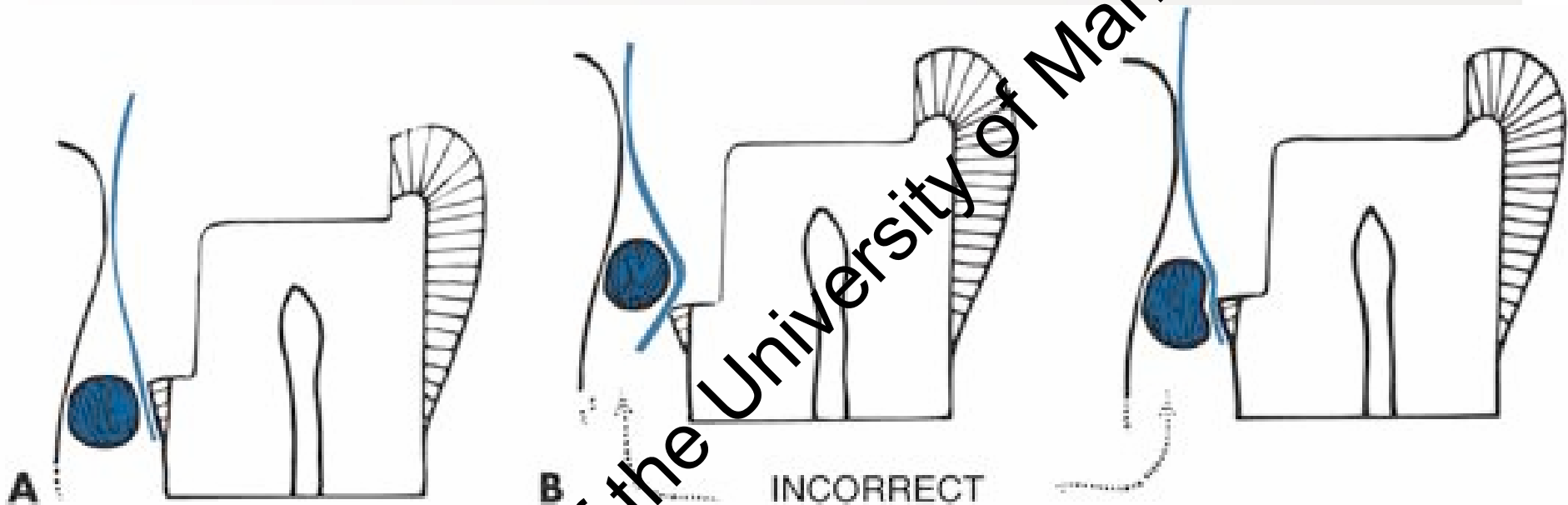
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The Wedge

- Functions:
 - Supports the matrix band
 - Provides slight intra-dental separation
 - Tightens the band against the tooth to prevent formation of overhang



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Finkbeiner, Betty Ladley Finkbeiner. *Comprehensive Dental Assisting*. 1995: Elsevier, 1995. 27.5.1).



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Summary

- Documentation
 - Importance
 - Restorative Dental Hygiene Documentation
- Isolation Techniques
 - Rubber Dam
 - Advantages and Disadvantages
 - Placement Technique
- Matrix Systems
 - Components: retainer, band, wedge
 - Types of Matrix Systems

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