Orthodontic Instruments and Emergencies

Dr Richard Lee
BDSc (Hons), BScDent (Hons), DClinDent (Ortho)
Senior Lecturer - Orthodontics

Outline

Orthodontic Instruments

- Adjustment Pliers
- Insertion Pliers
- Appliance Removal Pliers
- Special Use Instruments
- Cutting instruments
- Others

Orthodontic Emergencies

- Protruding wire
- Debonded Bracket
- Loose band
- Broken wire
- Wire out
- Periodontal inflammation / abscess
- Trauma
- Broken retainer

Orthodontic Instruments
Adjustment pliers

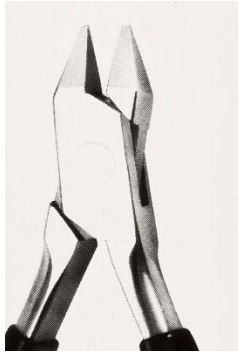
- Adam's
- Bird beak, 139's
  - Light wire
- Arch bending
- Three Jaw or three prong

Orthodontic Instruments
Adjustment pliers

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Adam's pliers

Used to adjust most if not all removable appliances

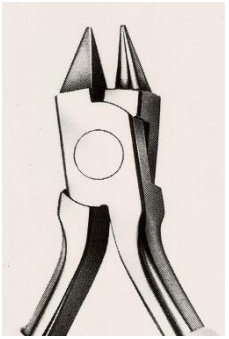






Orthodontic Instruments
Adjustment pliers

Bird beak or 139's



Used to adjust smaller wire aspects of removable appliances such as springs. Orthodontic arch wire adjustments - first, second and third order bends and bending loops.

A thinner more narrow beaked version is known as the light wire plier – designed to only bend small diameter wire.



Orthodontic Instruments
Adjustment pliers

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Arch Bending (Tweed)

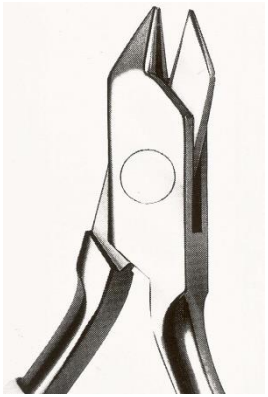
Used to bend and adjust orthodontic arch wire - first, second and third order bends





Orthodontic Instruments
Adjustment pliers

Three Jaw or three prong





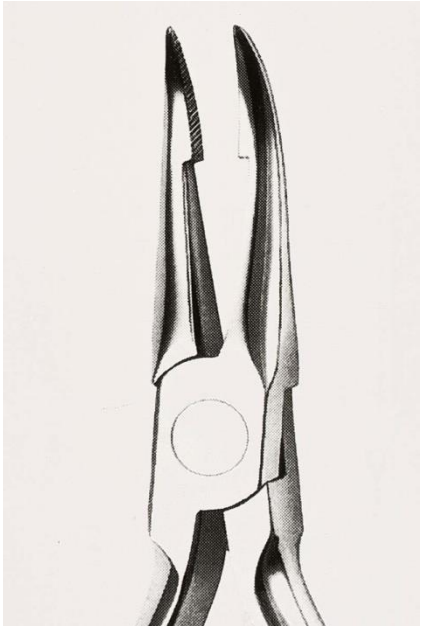
Used to adjust wire aspects of removable appliances. Can be used to make bends in auxiliary wires such as a transpalatal bar and V bends in main arch wires.

Orthodontic Instruments
Wire Insertion Pliers

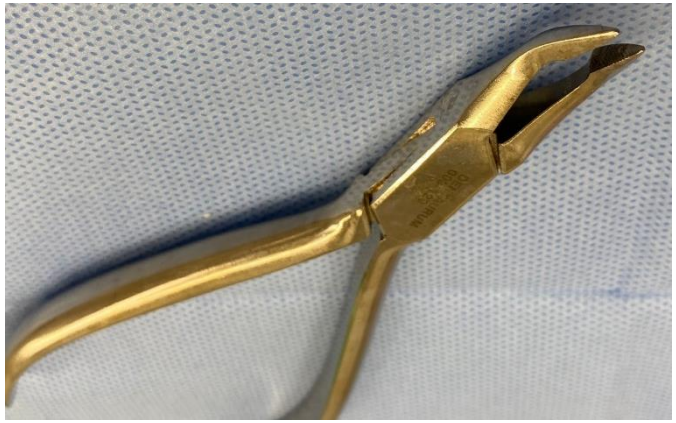
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Weingart

Primarily used to insert orthodontic arch wire into slot or tube of the orthodontic appliance





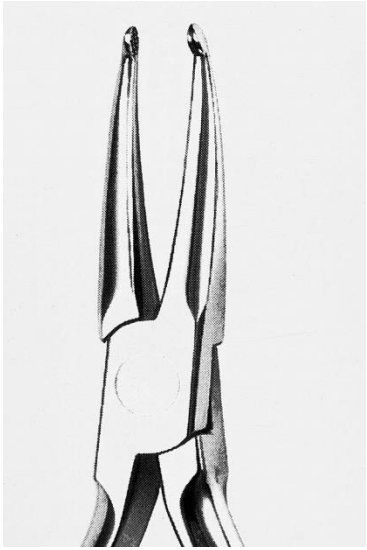


Orthodontic Instruments
Wire Insertion Pliers

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How(e) Plier

Primarily used to insert orthodontic arch wire into slot or tube of the orthodontic appliance

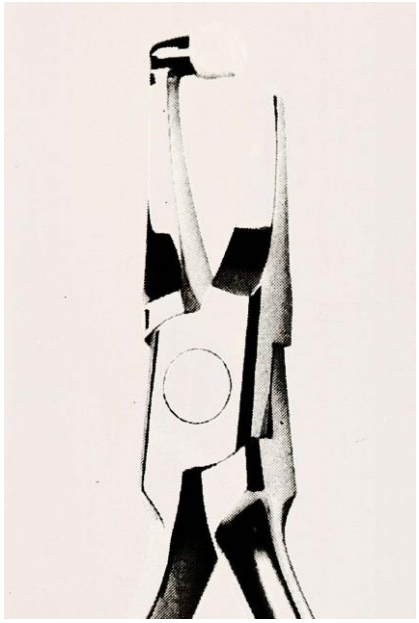




Orthodontic Instruments
Appliance Removal Pliers

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Band removing





Use - Self-explanatory

Caution to use only the plastic tip on the occlusal surface of the tooth

Orthodontic Instruments
Appliance Removal Pliers

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Bracket Removing

Use - Self-explanatory

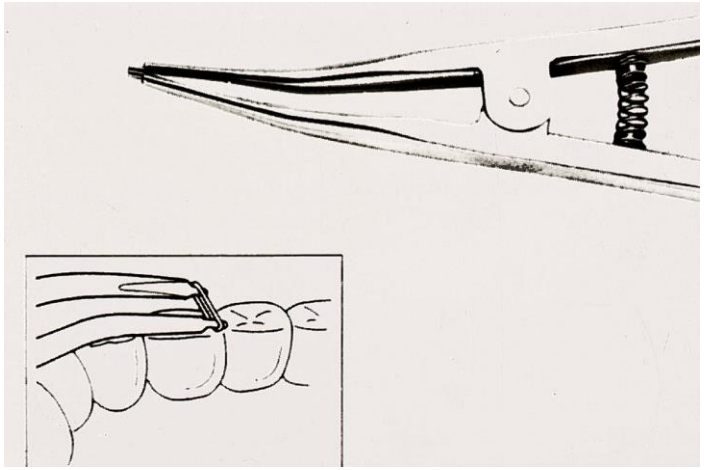


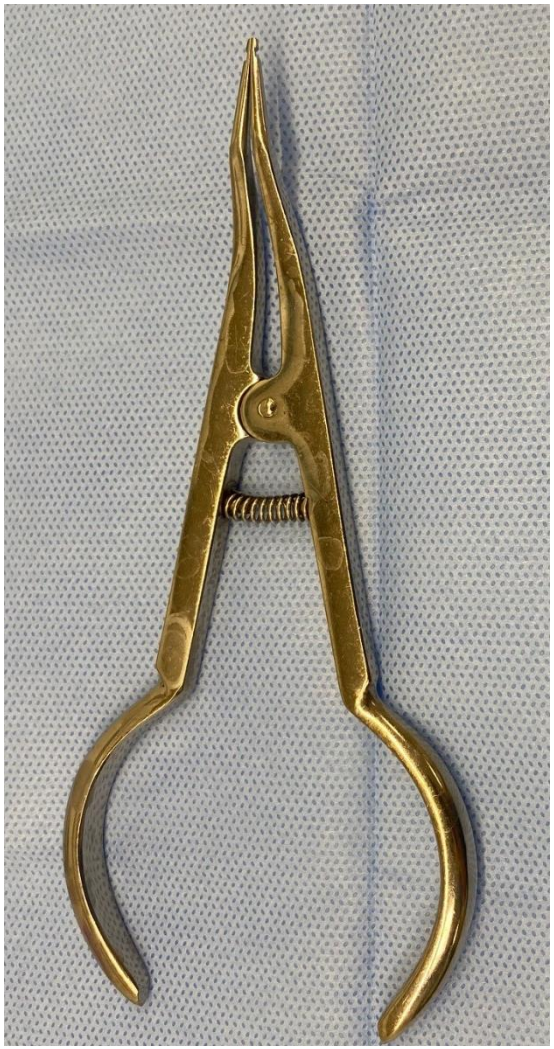


Orthodontic Instruments
Special use pliers

Separating pliers

Specifically used to place orthodontic separators.
Can also use 2 pieces of floss





Orthodontic Instruments
Special use pliers

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Crimping



Crown forming or contouring



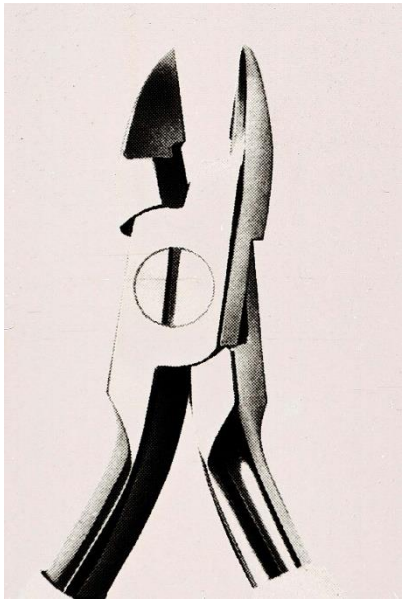
Used to form band or crimp (tighten) band on tooth

Orthodontic Instruments
Cutting

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Ligature cutter

Specifically used for very fine wires -Steel ligatures





Orthodontic Instruments
Cutting

Distal End cutter

Exclusively used for cutting orthodontic arch wires





Orthodontic Instruments
Cutting

Hard Wire Cutter

Cutting large diameter wire.



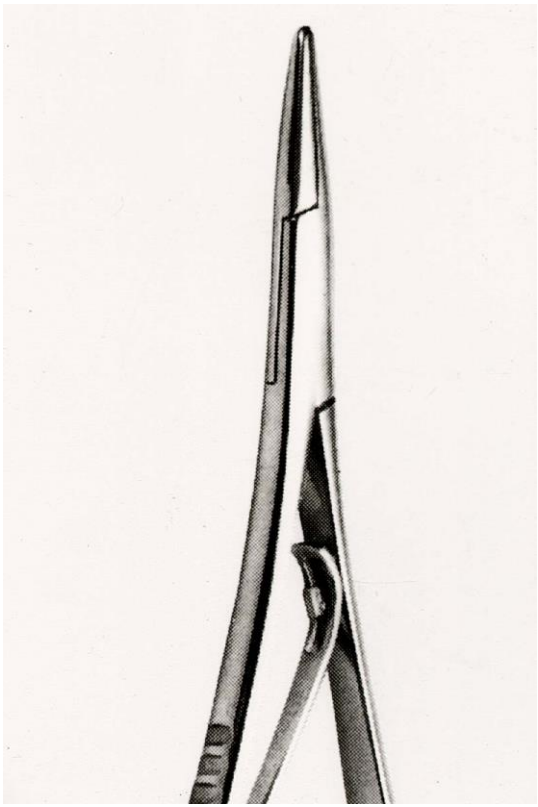
Orthodontic Instruments Others

- Mathieu Needle Holder
- Mosquito forceps
- Mershon Band Pusher
- Nylon Band seater
- Schure scaler and band pusher
- Direct bond bracket holder
- Boone gauge
- Ligature director/tucker

Orthodontic Instruments
Others

Mathieu Needle Holder

Placement of elastomeric ligatures/chain and steel ligatures



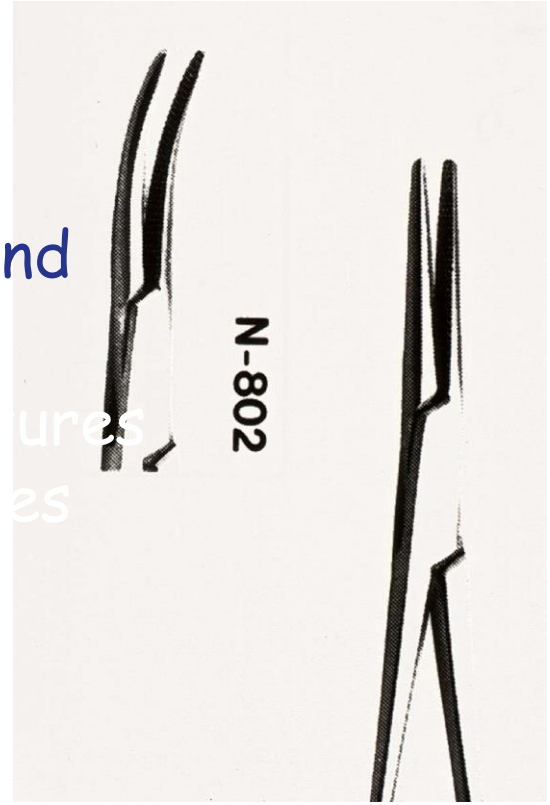


Orthodontic Instruments Others

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Mosquito forceps

Placement of elastomeric ligatures/chain and steel ligatures



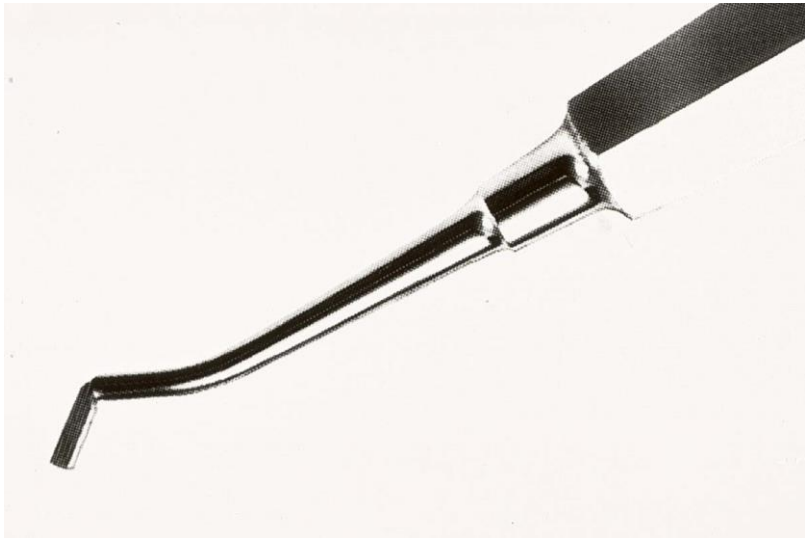


Orthodontic Instruments
Others

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Mershon Band Pusher

Specialised instrument to force band down at contact areas of adjacent teeth





Orthodontic Instruments
Others

Nylon Band Seater

Specialised instrument to force band down at contact areas of adjacent teeth

Caution to only use edge of triangular portion of the head on the metal band!



Orthodontic Instruments
Others

Schure Scaler and Band pusher

Specialised instrument for scaling away cement and to use as a small band pusher

Also commonly used to position brackets





Orthodontic Instruments
Others

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Direct Bond Bracket Holder

Used to hold and transfer orthodontic brackets from tray to tooth

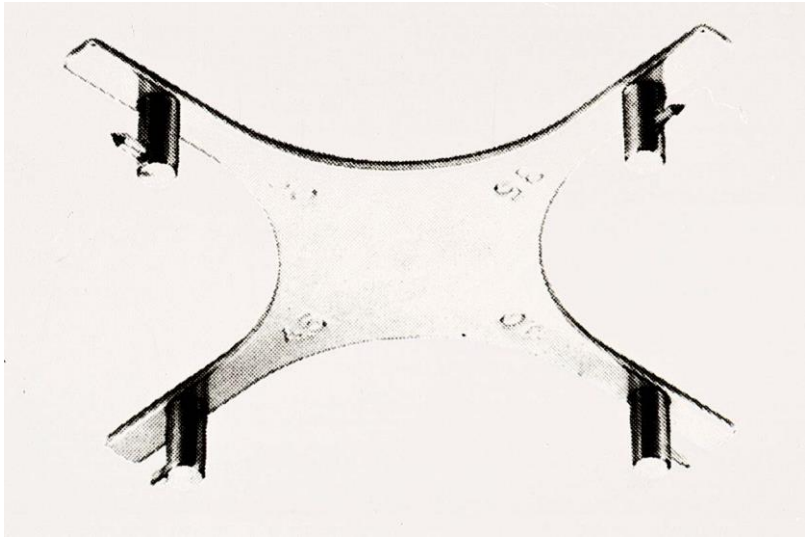


Orthodontic Instruments
Others

Boone gauge

Used to check
bracket heights
-3.5mm
-4.0mm
-4.5mm
-5.0mm





Orthodontic Instruments Others

Ligature Tucker / Director

Used to turn ligature ends in. Can be used to assist turning in the ends of the orthodontic arch wire

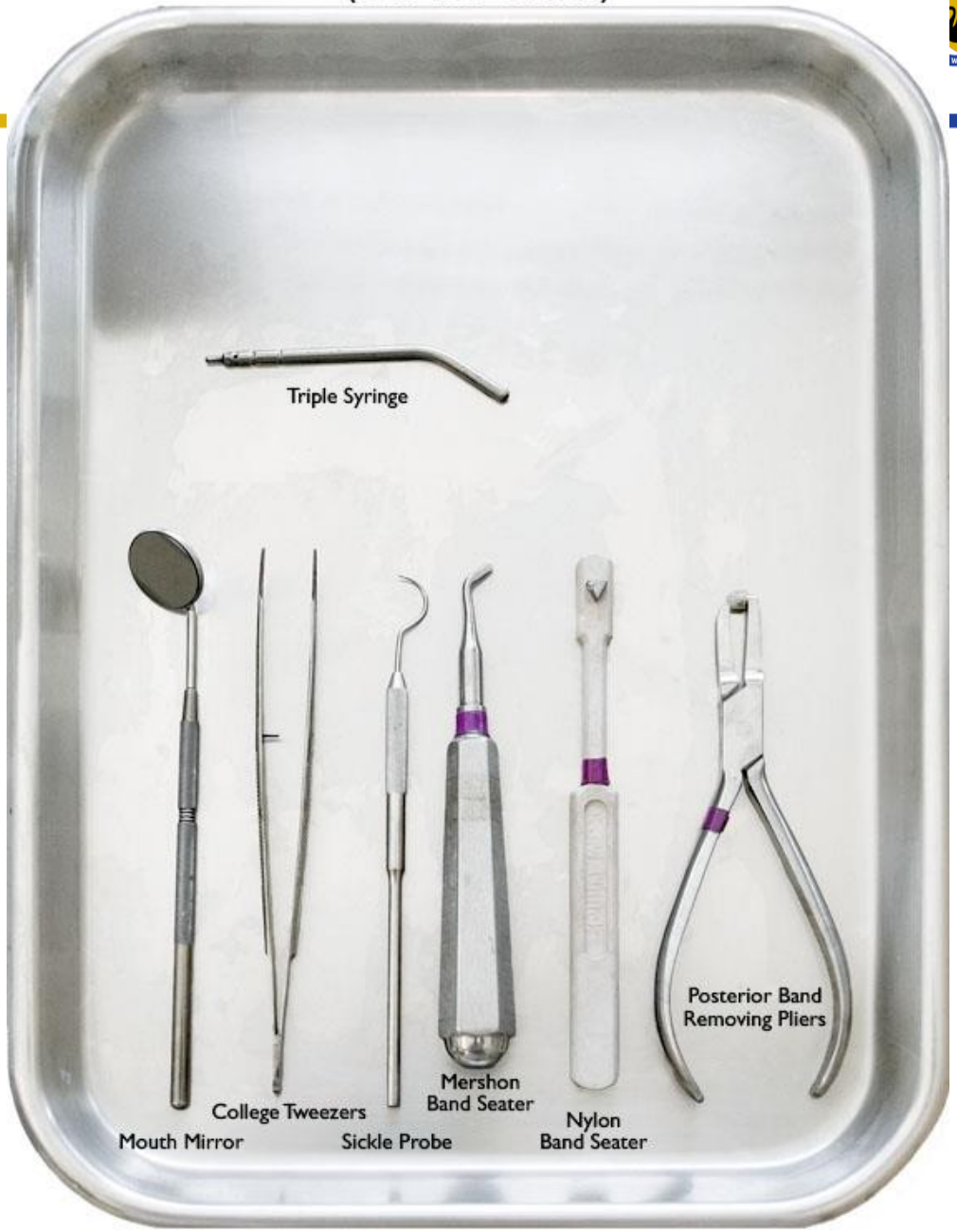


Orthodontic Instruments Others

Do Not stop here! Go to the Post-Graduate clinic and review the instruments in the orthodontic instrument trolley

BAND TRY IN SETUP
(ON BRACKET)

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BAND CEMENTATION
(DCA MIXING BENCH)



Orthodontic Band Cementation

OPTIBAND™

BAND CEMENT

OptiBand is a resin-based band cement formulated in a two-paste dual syringe system that eliminates messy powder and liquid mixing. With a consistent mix every time, OptiBand delivers reliable band cementation and the dual cure feature also gives you the choice of light curing or self-curing.



OPTIBAND™ ULTRA

Single-Paste, Light-Cure Band Cement

OptiBand Ultra is the ideal choice for reliable and convenient banding.

- Quick-Setting, Single-Paste, Light-Cure Formula means no more mixing and no more mess
- Disposable Tips allow application directly into the band for no waste and reduced risk of cross-contamination
- Optional blue color helps make cleanup of excess adhesive easier at both banding and debanding appointments



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BAND CEMENTATION SETUP
(ON BRACKET)

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DEBAND SETUP
(ON BRACKET)

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Orthodontic Emergencies

Most Orthodontists would prefer to complete their own repairs for their patients.

Sometimes this is not logistically possible

- After hours
- Distance from clinic
- Patient has moved

Orthodontic Emergencies

Protruding wire or hook



Most commonly the treatment is to trim, cut away or polish offending wire. Occasionally a hook on a band or wire or loop on a wire will need an adjustment to reduce the soft tissue irritation.

Orthodontic Emergencies

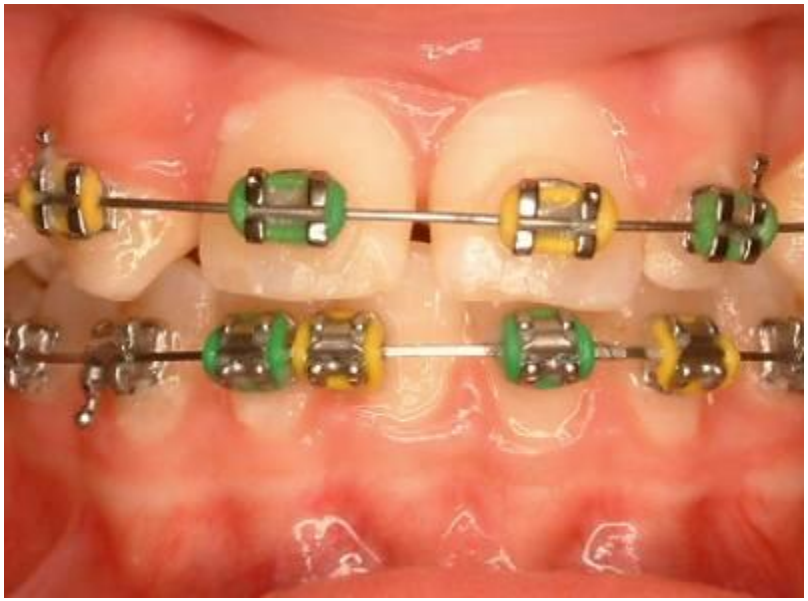
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Debonded Bracket

Loose Band

Broken Wire

Wire out of Tube



Most Orthodontists would prefer to complete their own repairs for their patients.

Orthodontic Emergencies

Periodontal Inflammation

Periodontal Abscess



Treatment: Air water spray debridement and scale and clean as required and usually requires removal of offending bracket or band. Savocol rinses 3 times per day for no less than 1 minute.
Occasionally antibiotic coverage – extremely rarely required.

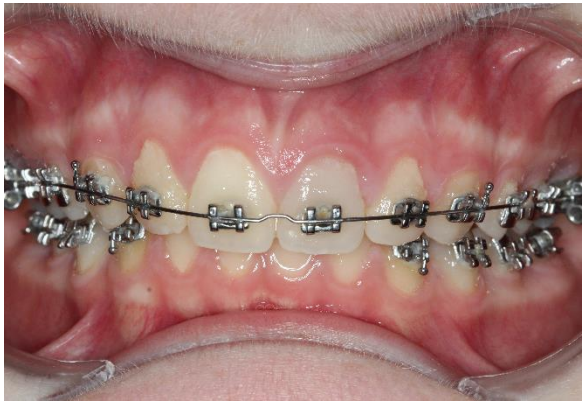
Orthodontic Emergencies

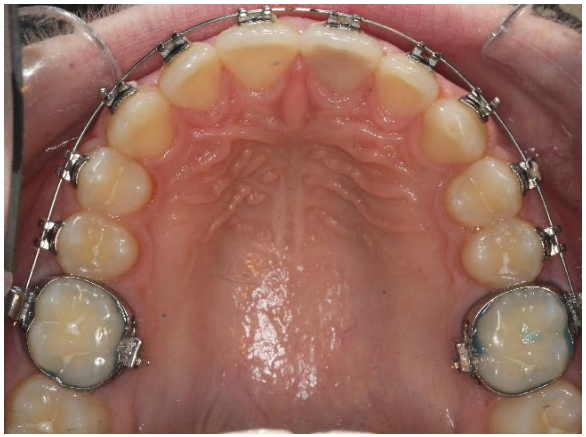
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Dental trauma



21 Days Later



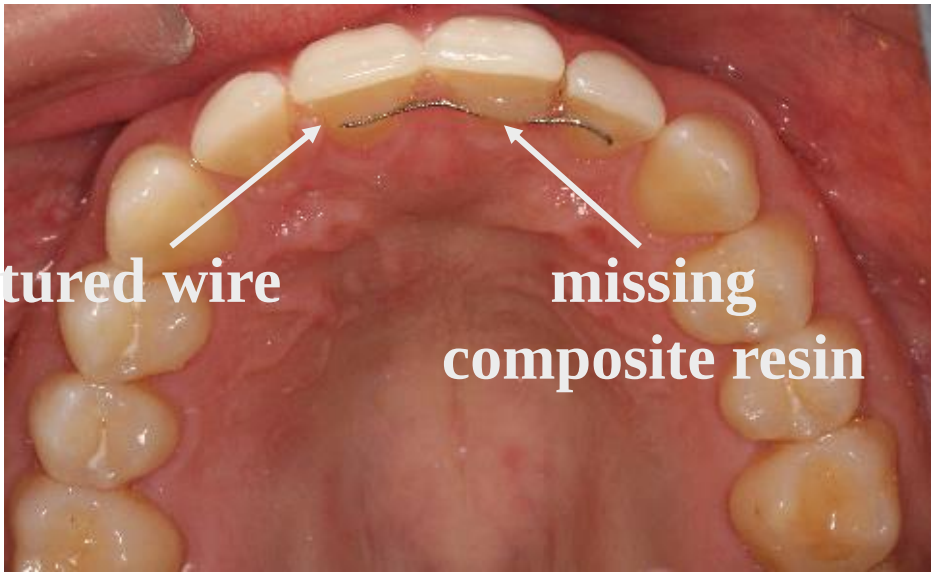


Orthodontic patients have a ready made splint we only need to re-bond any de-bonded brackets and change to a very light NiTi wire to construct a splint

Orthodontic Emergencies

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Debonded lingual or palatal retainer



Most Orthodontists would prefer to complete their own repairs for their patients even many years after treatment.

Thank you to
Associate Professor Mike Razza

Questions???

Come find me in clinic or email
Richard.lee@uwa.edu.au