

PCC 146.04

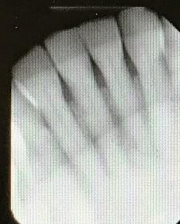
Case Presentation

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COE

- Patient presents for COE with CC of needing crowns on root canal treated teeth
- Med Hx: Noncontributory
- Allergies: NKDA
- Last dental cleaning: 1 month ago
- Patient has history of regular dental care
- Root canal (#4 and #5) completed 1 month ago.

FMX 2/10/2016



COE Completion

- FMX showed no obvious caries
- Patient did not want to replace missing #12 and was not interested in anything removable.
- Only crowns on #4 and 5 were treatment planned at this time.

Literature of why we need to crown endo treated teeth

- Placement of crowns on posterior teeth with sufficient coronal tooth structure *prevents fracture when occlusal forces attempt to separate the cusp tips*. (Goodacre and Spolnik 1994)
- Crown placement on RCT teeth is significantly associated with the long-term survival rate of those teeth. (Aquilino and Caplan 2002)
- Preservation of tooth integrity and strength is important for the long-term survival of endodontically treated teeth - full coverage restoration significantly improves the survival rate. (Baba and Goodacre 2014)

Literature for why we should crown posterior RCT-ed teeth and not necessarily anterior RCT-ed teeth

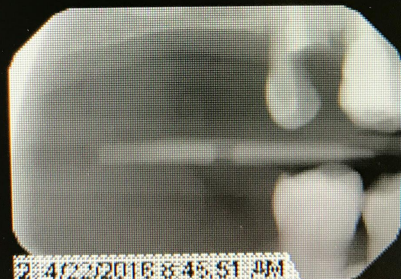
- It's the *standard of care* that RCT posterior teeth should be covered with a crown or onlay to prevent fracture. Coronal coverage does not significantly improve the success of anterior RCT. (Tikku et al. 2010)

Prophy

- Patient had an appointment for a prophy and presented with a broken build up



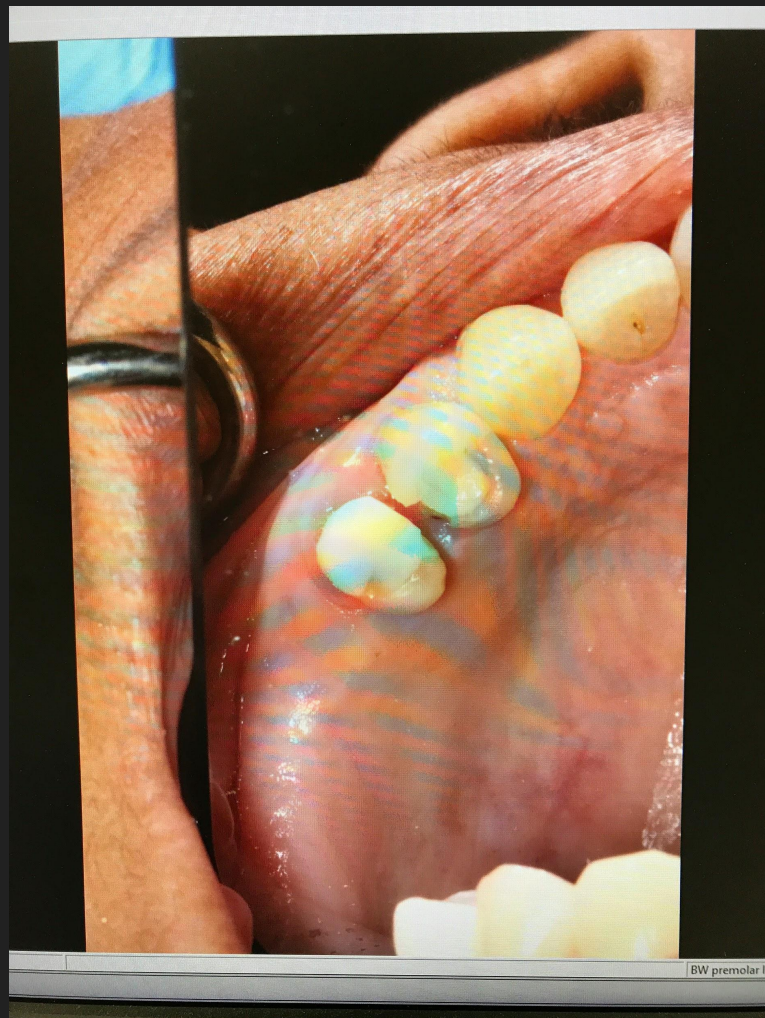
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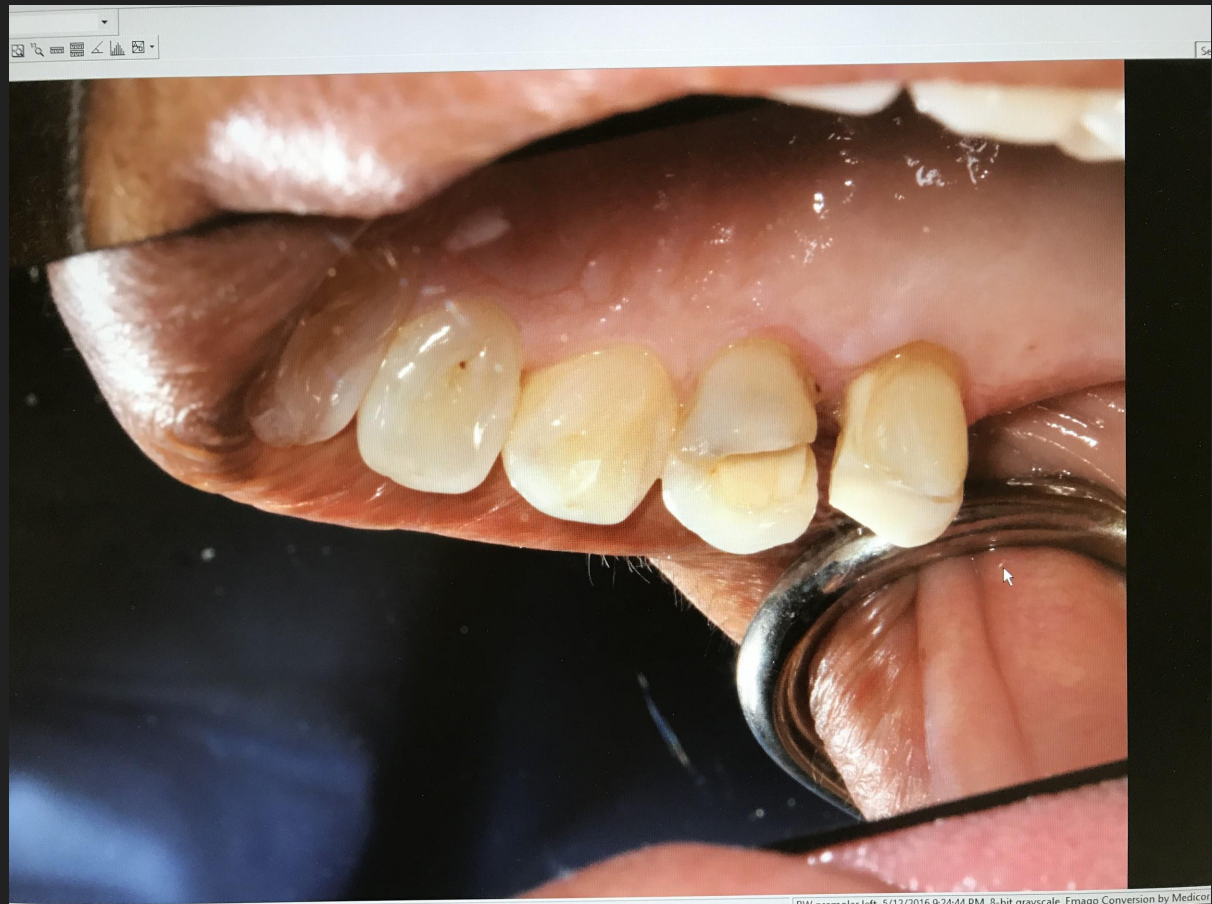


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Photo after build
up







Literature regarding the selection of direct buildup materials

- Literature shows that out of visible light cured composite, polyacid modified composites, resin modified glass ionomers, high copper amalgam, and silver cement, amalgam and resin composite demonstrated best long term prognosis (Shivrayan, 2015).



Referral for crown lengthening

Before patient was excused, attending wanted to refer patient for crown lengthening, and study models were poured up.

Crown lengthening result



Literature about crown lengthening

Crown lengthening can be performed to establish adequate amount of tooth structure for crown placement after RCT and avoid biologic width violation by the restoration (Moghaddam et al., 2014)

Crown prep appointment:

- Attending said that now crown to root ratio is equal
- Both teeth are endo treated (weakens teeth)
- Most posterior teeth --> higher load
- All three present as red flags for possible failure

Literature about premolar occlusion

In shortened dental arches, premolars may exhibit higher probability for occlusal wear compared to those in complete dental arches (Zhang et al., 2014).

Prosthodontist consult & Patient management

- Prosthodontist informed patient about situation and explained how splinting teeth can make it stronger
- Patient understands and is surprisingly not angry

Literature about splinting crowns

- Fixed splinting can decrease the periodontal load on premolars with reduced periodontal support, but may increase the load on the splinted tooth. (Wakabayashi et al. 2010)

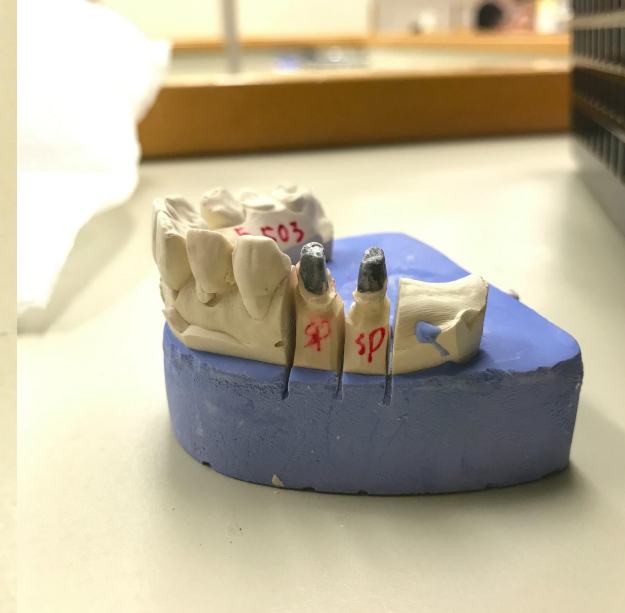
Final impression



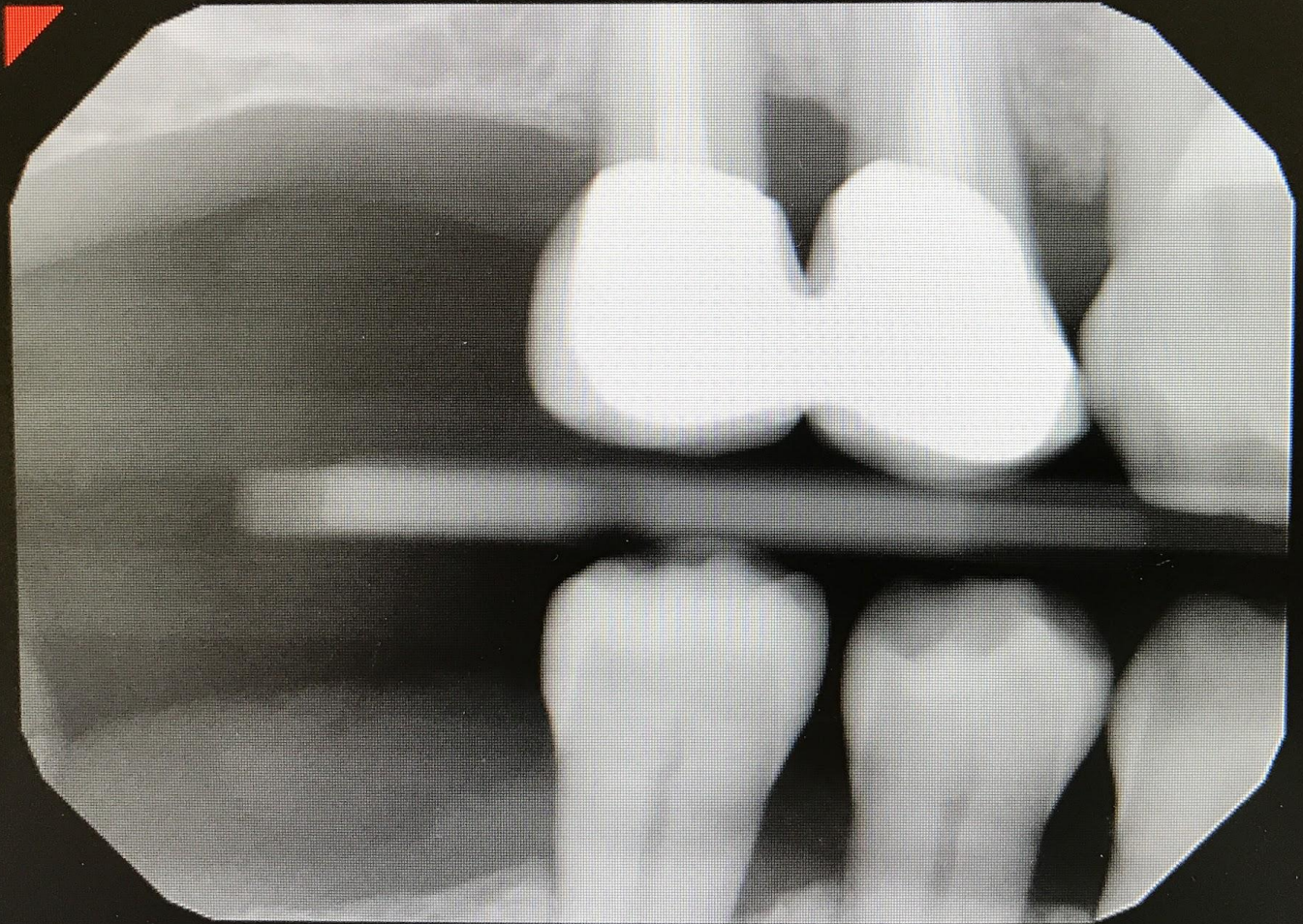
Color matching



Lab pour ups



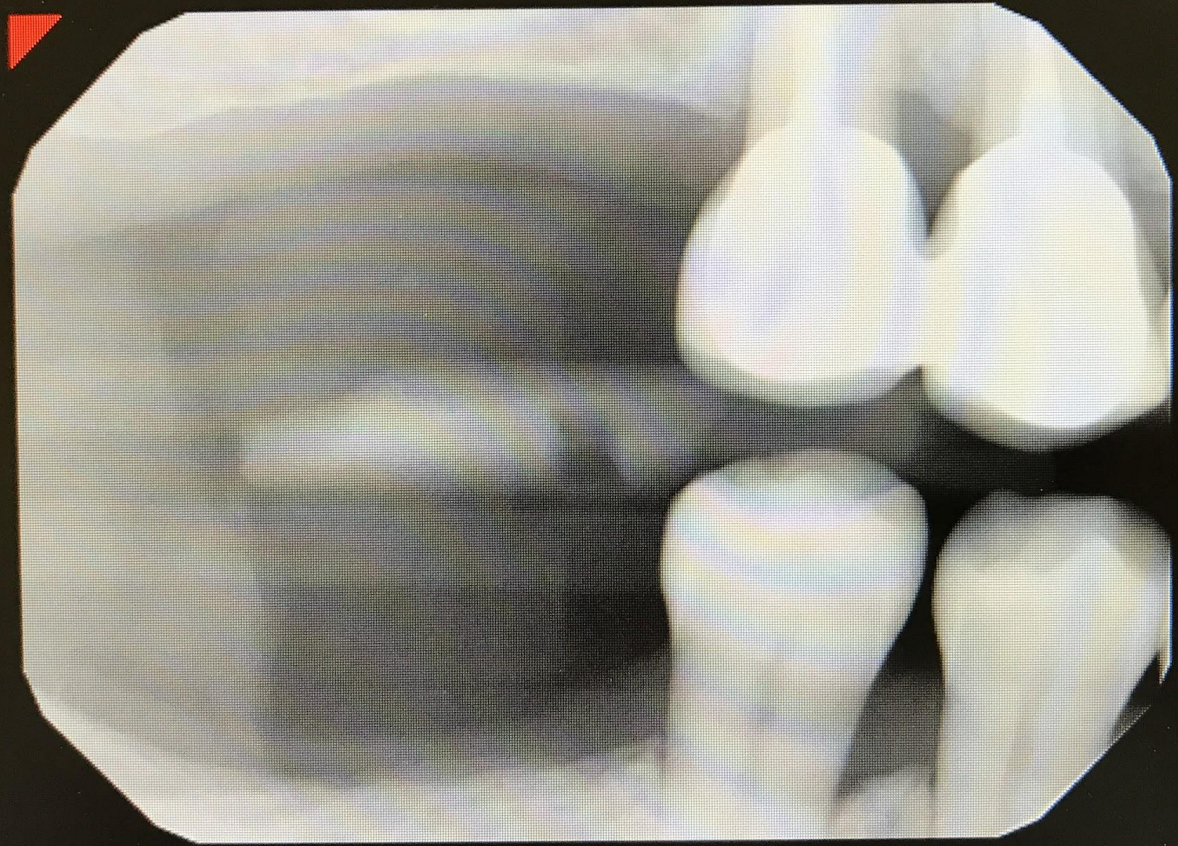
Pre
cementation
shows slight
open margins
on mesial of
#4 and distal
of #5. How do
we close that?



How to close interproximals of splinted crowns

- Check fit of the crowns before the appointment for any blebs that may prevent the crowns from seating all the way.
- Check the margins of the splinted crowns on the die.
 - Ensure that the interproximals of the splinted crowns are NOT open on the die. If it is open on the die and open on the patient's tooth, the lab may have over polished the crowns. These crowns will need to be sent back to the lab.
- Before placing the splinted crowns, make sure that teeth margins are clear of debris and gingival tissue that may prevent the crowns from seating all the way.
- Ensure that contacts are not too tight. If the contacts are tight, the crowns will have trouble seating all the way down. If the crowns rock buccal-lingually, the contacts are probably too tight.
- Check the margins of the crowns for any blebs that is NOT part of the preparation of the teeth.
- If your splinted crowns are still not seating, reduce the mesial margin of the distal crown (#4) and the distal margin of the mesial crown (#5). This will help close the interproximals of the splinted crowns.
- Still doesn't work? Should have taken better impressions for your lab :)

After
adjustments/
post
cementation
X-ray



References

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