Use or Lose in 2015

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Current Clinical Concepts in Restorative Dentistry and Implications for Trainers

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Dealing with dental disease / failure of strategically important teeth
Can you objectivise decision – making on restorability?

Is this predictable to restore?
Use it or lose it?
Tooth Investigation – referred case for re-restoration or extraction and implants LL67. No other major problems with an otherwise intact dentition
Let's explore

- ODS wants to know the best thing to do with the symptomatic LL67
- Both teeth RCTd many years ago
- Then ‘crowned’ with PFM s – defective crown margins
- Caries visible LL7
- Periapical / furcation area LL7
- What do we think of the endodontic quality
What further Investigation / tests would you request and why?

Use it or lose it?
Tooth Investigation – referred case for re-restoration or extraction and implants LL67. No other major problems with an otherwise intact dentition.
Use it or lose it?
Tooth Investigation – I always like to use a bitewing as you can get a perpendicular view of the coronal perio-crown interface of the teeth.
Coronal Height above the Alveolar Crest
bitewing gives you the best representation of this
What makes a molar strategically important?

• Function – occlusal value
• Aesthetic role – smile width
• Attitude of Patient
• General dental health, condition and motivation of the patient
Use it or lose it?

What is the reason for symptoms / infections

Coronal Leakage:
Ray & Trope 1995
Briggs & Bishop 1995
Briggs & Scott 1997

Van Nieuwenhuysen et al 1994 IEJ 27:75-81
Use it or lose it?
Tooth Investigation

• We need to strip down to the remaining tooth tissue to confirm or deny the amount of sound tooth tissue above the alveolar crest.
• A coronal evaluation and restorative decision should precede any re-endo and post removal.
• If endodontic Rx necessary we need to find root canal(s) and obturate them
• Our endodontic technique needs to preserve tooth-tissue
Strip down, investigate - plan restorative strategy/core/coreal coverage

**Tooth Restorability Index**

*McDonald & Setchell. Dental Update. 2005;32:343-348*

**Tooth Structure Remaining**

<table>
<thead>
<tr>
<th>Clinical Decision</th>
<th>Tooth Structure Remaining</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acceptable</td>
<td>Tooth with TRI of 12 and greater</td>
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<tr>
<td>Questionable and dependent on number of sextants with a score of 3. Acceptable if 2-3 sextants have achieved a comfortable 3 score.</td>
<td>Teeth with scores of 9-12</td>
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<tr>
<td>Unacceptable to retain a plastic core. Consider: crown lengthening; cast post and core.</td>
<td>Score &lt; 9</td>
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**Height & width of axial dentine after restoration removal + crown prep**

- 0 = None (no axial dentine above finishing line)
- 1 = Inadequate (dentine walls <1.5mm thick or more than 2x as high as their thinnest part)
- 2 = Questionable (between 1 and 3)
- 3 = Adequate (adequate height, thickness and distribution of axial dentine walls)
What did I do and why?

• Following crown removal and microscopic examination of both teeth with caries removed I felt that LL7 could be re-restored with cores and new crowns (after endodontic infection control)
What I did and why?

• I feel that these restorations in combination with good OH & carbohydrate control will perform well – The amount of remaining tooth tissue above the alveolar crest is the key to my decision
With good patient motivation, good OH & diet carbohydrate control (frequency) the teeth should perform well – The amount of remaining tooth tissue above the alveolar crest is the key to my decision

Van Nieuwenhuysen et al. 1994 IEJ 27:75-81
Cores – which and why?
Visible Cosmetic Zone

A 50 year old female with a symptomatic UL1 past post crown – can I resolve the ‘infection’ problem and still have a predictably restorable tooth?
Assuming the root intact, no deep localised pockets and treatment done well (5mm GP / decent post and crown) then one is looking at a very high survival of single and multi-rooted teeth supporting single fixed restorations (Salvi et al 2007).

Creugers and Mentink


The amount, height, thickness & ferrule of remaining tooth structure is the most important factor on outcome - much more so than the type & length of post and the type of core.
A Briggisy tip (Abbott 2004)

Never ever use the presence of a post to drive decision-making – it should be the strategic worth, what you are asking of the tooth, amount of caries, remaining supragingival tooth tissue present and the risk to reward of the other options.
Greater risk of periapical infection when there is a radiographic space between the root filling and the post
(Moshonov et al 2005)
We need to get the cement right down the root and not just place on the post to wipe up coronally when you insert the post!
Coronal tooth quality, periodontal pocketing, apical periodontitis, likely fracture perforation & periodontal problems - a real game changer
Are people beginning to worry about how this is all going to go in the long term?
What about fixed Restorations?

Repair, Re-treat, Restore or Replace?
How would you take a jaw registration to ensure that your chosen crown for the strategically important LR6 conforms to the existing occlusion?
Beauty wax (or equivalent) over the occlusal surface of distal molar refine with Temp-bond

Mrs R – Repair or Re-Treat

Case Discussion
Mrs R

- Fit & well 45 year old female
- Existing maxillary bridges 10 years old
- Bridges have never felt comfortable but no acute pain
- In recent months fracture of porcelain off both bridges - metal now visible and unsatisfactory
Mrs R

- Why do you think that the porcelain has fractured?
- What solutions can you suggest?
- What and where are the problems?
- How predictable will it be?
Evaluation of alternative intra-oral repair techniques for fractured ceramic-fused-to-metal restorations

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SUMMARY  Ceramic fractures are serious and costly problems in dentistry. Moreover, they pose an aesthetic and functional dilemma both for the patient and the dentist. This problem has created demand for the development of practical repair options which do not necessitate the removal and remake of the entire restoration. Published literature on repair techniques for fractured fixed partial dentures, concentrating on the data obtained both from in vitro and in vivo studies, reveals that the repair techniques based on sandblasting and glazing are the most durable in terms of adhesive and cohesive failures compared with those using different etching agents.

KEYWORDS: Fracture, ceramics, Intra-oral repair
Mrs R
Porcelain fracture

- Lack of metal support of porcelain
- Occlusal problem?
- Parafunctional activity?
Mrs R
Removing UL bridge

- Patients warned that we never know what might be found beneath the bridge(s)
Removing PFM – never tap off

Long diamond for the ceramic

Clinical Examples
Redo, Re-treat, Restore or Replace?

• Where you are re-treating short teeth with limited retention – consider PolyF as your temp cement of choice.
Mrs R

Removing UR bridge

• Why has this happened and what’s the treatment?
Last molar cases
when removing / replacing occlusal coverage restorations

• Try and copy what you started – pre-op Index
• Leave a little bit of the occlusal part of tooth and remove at crown fit
• Do teeth in front first (if you can)
• Prepare more off the terminal teeth to create the room?
• Cement in high?
Mrs R

Try in & Fit of UL bridge

- Be prepared to adjust restorations in excursive movements
- However the static occlusal contacts should be very close / near
Face Bow – do we need one and why?

Repair or Re-Treat
Clinical Examples

Face Bow – do we need one and why?
Do we need to take a jaw registration and if so why?
Clinical Examples

Do we need to take a jaw registration and if so why?
Learning point: If the stool falls down you need to put something between the teeth to ‘prop-it-up’ when the natural teeth are together in ICP
Principles of Working Static Jaw Registrations

- Always taken at the vertical dimension you plan to place your restoration(s)