Current Clinical Concepts in Restorative Dentistry and Implications for Trainers

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Handout – hodsollhousedental.co.uk
You are a select group - you have put your hands up to a commitment to train the young dentists of tomorrow

• Why did I do it?
• What do I have to give?
• Would I want to let my children do dentistry?
• Am I doing it well?
• Am I giving DFs what they need for their future?
• Are they teaching me new things?
.....and what do you think the DF trainees are making of all this?.....
I can think back to my ambitions – can you and have they changed?
The Learning Environment for DFs and DF trainers

- The average UK general dental practitioner is 3-3½ times more likely to be sued than the average UK general medical practitioner.
- Indeed, more than twice as often as the average dentist in the US, and 60% more often than dentists in California, Florida and New York State.
2015 Risk

• The likelihood of a UK dentist facing some kind of regulatory challenge is much greater than for:
  • Any other kind of registered healthcare professional in the UK
  • Any other dentists, anywhere else in the world
Where are the risks for trainers / trainees?

If we ask ourselves what kind of procedures leads to claims in the UK - the league table in 2015 looks something like this:
Let’s start with emergency pain control

1. Trusting the dentist 92%
2. Ensuring healthy teeth and gums 82%
3. General cleanliness and hygiene 80%
4. Treatments to solve dental problems 79%
5. Being seen quickly in an emergency 78%
6. Sterilisation and patient protection 74%
7. Special skills of dentist 71%
8. Screening for oral cancer 63%
Infective Endodontic Risk:

What is your diagnosis and what should the patient trust to be done?

Never let the sun go down on pus – knowing what antibiotics will and will not do?

Systemically unwell? - need to find out with a thermometer
Inflammatory Endodontic Risk:
We need to know and teach what antibiotics will and will not do and knowing how to use LA to numb ‘hot’ pulps

Articaine and Lidocaine Mandibular Buccal Infiltration Anesthesia: A Prospective Randomized Double-Blind Cross-Over Study

Mohammed Diab Kanaan, MPBol, DDS, John Martin Whittworth, PhD, BChD, Ian Porter Corbett, PhD, BDS, and John Gerard McCrean, BPhD, BDS

Abstract

A range of local anaesthetic drugs have been employed in dentistry, with lidocaine HCl currently considered the gold standard (1). The performance of articaine HCL introduced in the United Kingdom and the United States in 1998 and 2000, respectively, has been reported as comparable to lidocaine with epinephrine (2). Articaine is the most commonly used dental anaesthetic in Germany, Italy, the Netherlands, and Britain, Canada (5). Mandibular molars are usually anaesthetized by regional blockade of the inferior alveolar nerve. Inferior alveolar nerve blocks (IANB) are not 100% effective in obtaining pulpal anaesthesia of mandibular teeth (4). Other techniques such as intra-socket and peridental ligament anaesthesia may be used to supplement or replace the regional block (3). Another method that might be considered as a supplement technique is infiltration anaesthesia. The effectiveness of infiltration anaesthesia has not been tested extensively in mandibular molars.

The aim of the present study was to compare the efficacy of 4% articaine with epinephrine 1:100,000 (Septanest, Deproco, Kent, UK) and 2% Lidocaine with epinephrine 1:100,000 (Lidocaine, Loveloy Pharmaceuticals, York, PA) in obtaining anaesthesia of the pulps of lower first permanent molars with a labial buccal infiltration 2% volunteers.

Materials and Method

The study was designed as a prospective randomized controlled study. (E) Ended 2006/22:296–298

4 Treatments to solve dental problems 79%
5 Being seen quickly in an emergency 78%

Only 50-60 % of IDBs will fully work with hyperaemic mandibular molars – all will need top up

Queen Mary
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Anatomical Knowledge – reducing Endodontic Risk

Our dental anatomy knowledge should be comparable to a surgeon’s
Our dental anatomy knowledge should be comparable to a surgeon’s
Two tools to help DFs more safely and effectively Rx dental emergency
Where are the risks with C & B?

- Planning & Execution
- Abutment condition and prognosis
- Static Jaw Registration / Occlusion
- Impression quality & fit
- Posts / Cores – as abutments
- Aesthetics / shade / shape / margin etc
Early identification of Partial De-Cementation

Managing Failure of Conventional Bridges (Briggs et al 2013)
We must all know and be able to get a good impression 2015 – many C&B complaints relate to poor marginal fit – time = money so electro-surgery skills important for DFs to learn
The significant things to note about the UK picture compared to other countries at present are the prominence of:

- Allegations of a failure to diagnose and adequately treat periodontal disease
- Implant cases of all kinds
- Implant cases have **larger quantum than the average dental case**
- Luckily DFs will not be doing implants - but they will need to receive sensible advice from you on how they can best start to build OI training blocks
So if we put ourselves into the shoes of a DF - what does this all mean?

- How do I learn and make my mistakes in clinical practice in the UK without running into trouble?
- If I accept that I will have my share of cock ups then - how can I minimize the chance of my patients making a complaint against me?
- Is there any non-clinical things that I and my trainer can do to help?
As we all know, the UK population is living longer and retaining more of their teeth into later life. The ‘baby boomer’ generation is the ‘heavy metal’ generation – they will require most dentistry.

For patients under the age of 45 - I will need to develop biological / prevention skills (biological).

For older patients I need to learn and skill-up in the CRAFT (technical) dentistry and be able provide predictable quality – particularly for strategically important teeth.
So in an environment of risk is there any good news about how I can learn to do contemporary restorative dentistry and make my mistakes without trotting up and down Wimpole Street to the GDC?

Yes
• Professor John Adams of the Adam Smith Institute (in his 1999 book “Risky Business” - ISBN 1902737067, 9781902737065) suggests that we all have a “default” approach to risk
Adventurous Souls – Risk taker

Dangers:

• *May be a little overconfident on occasions*
• *Too dismissive of the risks – I can always re-do it*
• *The challenge - as always - is to find the right balance*
• *Achieve balance that serves the best interests of the individual practitioner as well as that of the patient*
Adventurous Souls – Risk taker
- What’s the problem I can always re-do it -

Foundation (perio / endo), core design, preparation, impression , static jaw registration, temporisation, crown construction, try-in, cementation and polish
Agreed Team Standards

E-max Monolith UR6 – single strategic RCT’d tooth
The two groups on the left are essentially problem solvers and see no need to do anything until a problem arises.

**Problem Solvers**

**Egalitarians**

**Individualists**

**Hierarchists**

Are organised in their approach to risks (and to life). They adopt a scientific approach to assessing and prioritising risks, and managing them.

Are cautious and sometimes fearful of risks, making them risk averse (avoiding risky situations). They don’t understand risk seeking behaviour.

**AND BE a risk-taker**
• So much so that they are so confident of their **problem solvers** skills they will give anything a go as they can mechanically repair any complication - *what will be will be!*  

• The two groups on the right anticipate and plan to avoid risks and complications (**problem finders**).
What does this mean to DF trainers?

- You need to understand where you sit
- You need to observe & understand where your DF sits
- Work out how you can help them to develop skills to work across both sides

Fatalists / Individualists – Hierarchists / Egalitarians
If however you remain only on the right you will remain so scientific-processed & risk adverse that you will not be able to ‘Skill-Up’.
What has this to do with risk and learning environment for DFs Peter?

Deviation / Perforation – 20% of posts deviate

Fatalists / Individualists – Hierarchists / Egalitarians
Drilling a post channel is a high risk procedure – particularly for a DF
Bunting and others, have found that most complaints are triggered not just by the actual event – *perforation of root* ("predisposing factors"). It will be triggered where the patient is tipped over the edge by a succession of “precipitating factors” – because other things had already happened to create doubts and concerns at the time of the *predisposing incident*
Predisposing factors included: poor communication, a perceived lack of interest, rushing and not listening, rudeness, financial or a lack of respect. You will note that these are “people” issues that have little or nothing to do with clinical dentistry.
Post-op pain

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1. Trusting the dentist 92%
Controlling Predisposing factors:
Post treatment / instrumentation pain - how big is the problem?

*A good subject for a tutorial I would suggest*


- The prevalence of post-obturation pain within 48 h after treatment was **40.2%**
- Less than **12% of patients experienced severe pain** (VAS 4 or 5) on either day 1 or day 2.
- **Gender, tooth type, size of periapical lesion, history of post-preparation pain or generalised swelling and number of treatment visits**
Controlling Predisposing factors
Evaluation of NSAIDs for treating post-endodontic pain
A systematic review
ANDREA HOLSTEIN, KENNETH M. HARGREAVES & RICHARD NIEDERMAN
Endodontic Topics 2002, 3, 3–13

• Ibuprofen 800mgs is the gold standard against which others should be tested

• NSAIDs are most effective for treating acute endodontic pain
DF STEP ONE: Develop and hone skills on the right

- If only a precipitating factor is present (e.g. a perforated root) - with no major predisposing factors beforehand
- Then only 2% of patients will make a complaint to the practice, NHS, GDC or litigate when you have made a significant clinical mistake (e.g. post perforation)
......on its own can this be managed...
Then it is for the DF and trainer(s) to make sure that the mistake does not happen again

Post / Crowns
Never use the post drill first – always start with ‘a measured’ Gates Glidden Burs
In a multi-rooted tooth use only one root canal

Parapost burs create signif greater deviations from the centre of canals than Gates Glidden (Gegauff et al 1988) Therefore safest to use the GGs first to remove (mostly by heat) the GP and then prepare / cut a post channel within the root
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.
Metal or Glass-Fiber?

- The less tooth-tissue you have remaining – the more you need an indirect core
- Survival better for glass fiber posts and all ceramic crowns if you have 3 or 4 remaining walls of tooth tissue
- If you have less go for an indirect arrangement and optimise ferrule
Maximise Ferrule
Post core to support one tooth (not lost friends) Performance better if they have anterior and posterior contact (bounded saddle)
Why is cementation and passive seating of posts so important?
The ‘Moshonov’ Gap to be avoided

The effect of the distance between post and residual gutta-percha on the clinical outcome of endodontic treatment.

Moshonov J¹, Slutzky-Goldberg I, Gottlieb A, Peretz B.

Abstract
To determine whether the distance between the post and the residual gutta-percha influences the clinical outcome of endodontic treatment, 94 endodontically treated teeth following post and core restoration were evaluated radiographically. The teeth were divided into three groups: (I) no gap between the gutta-percha and the post; (II) a gap of >0 to 2 mm; (III) a gap of >2 mm. Treatment outcome was evaluated in follow-up radiographs, taken 1 yr after treatment and up to 5 yr posttreatment. In group I, 83.3% of the teeth were evaluated normal, 53.6% of group II, and only 29.4% of group III. A gap between the gutta-percha and the post was related to an increased rate of emerged disease in endodontically treated teeth restored with a post and core.
Greater risk of periapical infection when there is a radiographic space between the root filling and the post (Moshonov et al 2005)

No Gap - 83.3% PAH normal
GAP 0-2mm - 53.6% PAH Normal
GAP greater than 2mm - 29.4% PAH Normal
We need to get the cement right down (or up) the root and not just place on the post to wipe up coronally when you insert the post!

DFs need access to a Spiral Filler and a nurse who can mix PolyF
Predictable Stuff

- Good endodontic and periodontal health
- Good ferrule
- Good post fit
- No gaps
- Single teeth
- Favourable loading
Professionalism - predisposing factors

- Be careful calling people by their Christian name – it may not go down well with some
- Do not get too chummy with patients – they want you to be their dentist (professional) not a chummy friend
- Be careful how you look, dress and behave
- Remember the 90 year old war veteran test
DFs - what are your responsibilities?

• **At start of career - STEP ONE** - learn the communication skills and professional approaches of the people on the right so patients trust you and know that you have done your best & that you have been kind to them. Understand what patients expect of you as a medical professional.

• **Create few predisposing factors**

• **My trainer must observe and feedback to me my progress on right-sided skills** – and bear this in mind before telling me to speed up and speak less to patients.
As DFs what are our responsibilities?

- When I make a mistake – I must be able to look the patient, my trainer, my nurse, my mother & father in the eye and admit it, apologise and vow to learn from it.
- Believe the patient - they are usually right.
- Aesthetics – the patient has the last word – I will not argue with them – if they do not like it then it is not right for them.
- Do not charge for suboptimal work – it will only make things worse – discuss with trainer - money back if possible.
DF STEP TWO - Careful and Informed Decision-Making – followed by technical execution

(learned from repetitive skill experience)

Fatalists / Individualists – Hierarchists / Egalitarians
The most successful dentists treat people - not teeth! – they realise that their interests come before their own.
• If you remain only on the left without developing skills from the right – you are dangerous (you have no insight)
Many dentists believe that they are in the dentistry business, or the tooth business, the implant or the veneer business.

They are not – we are all in the people business, and people buy people - before they buy any implants, bridges or veneers from them.
So how do DFs develop Clinical Skills on the left?

MATTHEW SYED

- Syed believes that innate talent is not always necessary if you are prepared to put in the work and the hours
- This should be a very empowering prospect for anyone at the start of their dental career
Developing competence

MATTHEW SYED

• Sign up to the mission and criticism
• Learn from mistakes (reflective learning)
• Learn from others better than you
DAVID DUNNING and JUSTIN KRUGER
Their work published in 1999 demonstrated that less skilled and less competent people tend to overestimate their level of competence and expertise, while those who are truly expert sometimes underestimate their true level of expertise.

Socrates may have been quoted as saying ‘that the one thing he did know was that he knew nothing’.
So your bar of competence will increase the better you get

• True experts (10,000 hours of training) soon learn not to ‘charge in’ – because they better understand what is in the best interest of their patient

• They will want to ‘buy time for the patient’ – using less aggressive and cheaper treatment plans – as they understand the implications of complications (as they are trained to deal with them)
• I am naturally scientific and cautious – I know what can go wrong – and realise the sense of buying time

• Something has to make overwhelming logical sense for me to do it

• I naturally occupy ground to the right but when I have made a decision can move with commitment to the left

• If things do not go as planned – I return to the right to think – Why?
Successful trainees treat people - not teeth! – they firstly must learn the skills of the right – and then move conquer those of the left.