Practical Dental Local Anaesthesia Teaching: Current Models and Controversies

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Introduction

• Effective LA administration crucial
• Emotive experience for undergraduates
• Various models:
  – Student-to-student administration
  – Electronic models
  – Cadavers
Student-to-Student Administration

- 61% European dental schools\(^1\)
- Almost \(\frac{3}{4}\) dental schools in UK\(^2\)
- 4 UK schools no longer use:
  - “Ethical approval not given”
  - “Consent and ethical reasons”
  - “Unnecessary use of medicines”
  - “Decision made by school not to allow practice”

Controversies?

• Complications associated with LA
• Syncope, haematoma, trismus, oedema, paraesthesia, facial nerve paralysis, pain, through and through IANB³
• Nerve injury – permanent risk
• Other controversies reported:
  – Soft tissue anaesthesia
  – Peer pressure
  – Wrong site surgery

Electronic Simulation Models

• Indicate when needle in correct position

• Mixed reviews:
  – Self reported students’ confidence not improved\(^4\)
  – Self reported confidence improved and decreased adverse events\(^5\)
  – Improved theoretical knowledge\(^6\)

• Limitation – soft tissue landmarks

Cadaver Models

• Thiel embalmed cadavers\textsuperscript{7}
• Significantly improve self-reported understanding and confidence\textsuperscript{8}
• Limitation – 1 in 10 find cadaver teaching difficult

Local Practice, Evidence and Reflections
What do we do?

• Stage 1 anatomy
• Stage 3 clinical introductory course:
  – 5 lectures
  – Small group seminar
  – *Voluntary* student-to-student practical
• Informed written consent
• Small groups, closely supervised
• Techniques and solutions used
Student Feedback

- **US**: 9
  - 79% agree with student-to-student administration
  - 84% believe student-to-student administration ethical

Newcastle Student Feedback

• “I know we’re told what it feels like to have an injection or to be numb, like your lip will feel numb and feels really swollen and big, but I actually appreciate what that feels like now, and you tell us the palatal infiltration is painful, but it really is quite sore, so it’s good to be aware of that”
Newcastle Student Feedback

• “You have no idea how it feels to be numb, and [the practical] makes you realise how it feels, how self-conscious you can feel when you’re talking, and patients do say that so I know what they mean, it puts you in their boots a little bit”
Newcastle Student Feedback

• “I understand why it’s not compulsory, but it should be, it needs to be”

• “It’s definitely something we should be doing”
Conclusion

- Student-to-student administration favoured by dental students
- Not without its potential complications
- Other models available
- Future – virtual reality, haptics?
- Further research needed
Thank you