

IN BRIEF

- Highlights a potential link between tonsillar infections and non-vital teeth.
- Demonstrates the dangers of 'blind' prescribing of antibiotics.
- Suggests an alternative method of sampling bacterial infections in root canals.

Case report: teeth and tonsils: the use of culture and sensitivity testing for antibiotic prescribing in dental infection

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This case report highlights the usefulness of bacterial culture and sensitivity testing in the prescribing of antibiotics for dental infections, demonstrated by the management of a 10-year-old child with a non-vital upper central incisor and, reportedly, associated recurrent tonsillitis.

CASE REPORT

A 10-year-old boy was referred by his general dental practitioner to the Child Dental Health Department at the Bristol Dental Hospital (BDH) with an apical one-third root fracture (Fig. 1) to his upper right central incisor of three weeks' duration. The tooth was originally extruded and although the dentist had attempted to replace the coronal fragment, the discomfort felt by the patient prevented full repositioning. Since that time, the patient had been prescribed two courses of Penicillin V.

At the initial consultation the tooth was found to have discoloured and was unresponsive to cold. The remaining, necrotic, pulpal remnants were removed and the tooth dressed with calcium hydroxide.

When reviewed six weeks later, the patient stated that over the previous month he had suffered with recurrent tonsillitis that had restricted him to only three consecutive days at school. Four more courses of antibiotics (two Amoxicillin, two Penicillin) had been prescribed but with limited effect. His mother felt very sure that there was a direct link between the injury to his tooth and the onset of the tonsillitis.

The tooth was re-accessed (with rubber dam placed) and dried. Paper points were used to take a sample of the pulpal canal contents for bacterial culture. The tooth was then re-dressed with calcium hydroxide. Concurrently, the patient's medical practitioner took a swab from the tonsillar bed.

Culture and sensitivity of the bacteria present on the paper points showed the presence of a Group A, beta haemolytic streptococcus, sensitive to erythromycin and Penicillin G. The tonsillar swab confirmed the presence of the same bacteria. Erythromycin (500 mg) was prescribed for three days, three times a day.

Reviewed a month later the patient had not missed one day of school since the end of the course of antibiotics and

his mother was not keen to have any treatment to the tooth in case it flared up again. Radiographs showed the presence of bony infill at the level of the fracture (Fig. 2).

The tooth will be maintained with calcium hydroxide and, given the guarded long term prognosis, is to be kept under review with a view to a possible homologous transplant in the future.

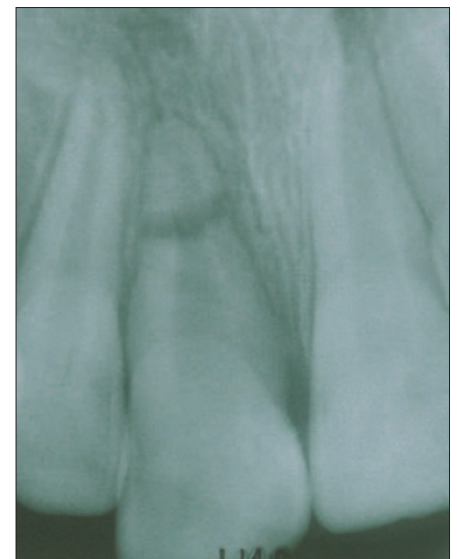


Fig. 1 Periapical radiograph of an apical one-third fracture of upper central incisor, following attempted repositioning by GDP

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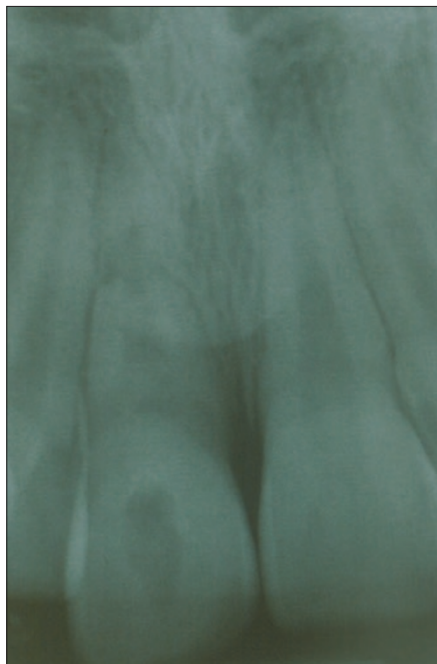


Fig. 2 Periapical radiograph taken six months later following extirpation and dressing with calcium hydroxide (incomplete) – some bone infilling at the fracture site visible

DISCUSSION

Considerable concern has been voiced recently over the therapeutic prescribing of antimicrobials being suboptimal, especially in general practice.^{1,2} The inappropriate prescribing of antibiotics increases the risk of drug resistance, therefore limiting the clinician's

treatment options.³ The drugs' increased use raises the likelihood of potential harmful side effects, including possible fatal allergic reactions. Whilst in the field of endodontics the indications for the use of antibiotics are well documented and circumscribed; their prescribing is enormous.⁴ Suggestions that the duration of antibiotic therapy could be reduced to minimise the risk of resistance have also been supported.⁵ It is clearly recognised and stated that their use must be limited to cases where they are appropriate and specific to the bacteria the antibiotic is targeting.

Beta haemolytic streptococcus is a common cause of tonsillitis⁶⁻⁸ but there is limited evidence to support its being the cause of dental infections. Whilst it would seem likely that the two samples are related, DNA sampling – which was not requested at the time – would be necessary in the end to establish this point. This does not detract from the main thrust of our findings, however, which is that bacterial culture and antibiotic sensitivity testing revealed that previous prescriptions had been inappropriate. Blind prescribing, as in this case, not only fails to resolve the systemic symptoms but also increases the risk of potential harmful sequelae. The use of sterile paper points as a

sample carrier is a very useful aid to the dentist where acute or chronic infections fail to settle with recommended local measures.

This paper aims to highlight the benefit in the use of culture and sensitivity, where the use of antibiotics is clinically indicated, in order to reduce the potential harmful effects in inappropriate antibiotic prescribing.

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