

## The extraction and re-implantation of teeth for the difficult laryngoscopy

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### Abstract

We describe two cases where it was necessary to remove teeth to biopsy the larynx for malignant disease. Immediate reimplantation of the teeth proved successful.

**Key words:** Laryngoscopy; Tooth extraction; Tooth replantation

### Case reports

#### Case 1

A 56-year-old male was seen with an 11-month history of dysphonia and heavy smoking. General hyperaemia of the larynx was reported on indirect laryngoscopy but the anterior commissure could not be seen. Direct laryngoscopy was found to be difficult due to cervical spondylosis and only the posterior part of the larynx was visible. Fibre-optic nasopharyngolaryngoscopy revealed a tumour on the free edge of the anterior third of the right vocal fold. Biopsies were attempted with a flexible bronchoscope but failed to obtain an adequate sample of tissue. It was decided to remove two teeth for direct examination. To give a general anaesthetic blind endotracheal intubation was required and two incisor teeth were extracted and put in blood. The Negus laryngoscope fitted the gap (Figure 1) and the larynx could be easily visualized and the lesion removed. The teeth were reimplanted and held in place with an acrylic transplant splint for four weeks. Histology showed the tumour to be a squamous cell carcinoma and the patient underwent a radical course of radiotherapy and remains well with no sign of recurrence four years later. Six months after reimplantation one incisor was found to require a root canal filling. Four years after operation both teeth are asymptomatic and nontender to percussion. They are non-vital to ethyl chloride but otherwise healthy on X-ray.

#### Case 2

A 47-year-old male was seen with a four-month history of a hoarse voice and years of heavy smoking. Indirect laryngoscopy showed a right vocal fold polyp and direct laryngoscopy was required. This was very difficult due to prominent teeth and a bull neck and such a poor view of the larynx was obtained that the examination had to be abandoned without a biopsy. A second laryngoscopy was carried out following extraction of one incisor and two more teeth. A clear view of the larynx was then obtained revealing a T1b tumour of the right vocal fold which was biopsied without difficulty. The teeth were reimplanted and held with an acrylic transplant splint for four weeks. Histology confirmed the tumour to be a squamous cell carcinoma and after a radical course of radiotherapy the patient remains well with no sign of recurrence three years later. He has required no further dental attention and the three teeth are asymptomatic and firmly in place.

### Discussion

A satisfactory direct laryngoscopy depends upon good general anaesthesia, the correct instrument, the skill of the laryngologist and the anatomy of the patient. The anatomical causes of difficulty include prominent, unstable or reconstructed teeth, a large tongue or swelling of the floor of the mouth, a short, narrow-angled mandible, trismus, a stiff cervical spine or bull neck, an overhanging epiglottis or neck contractures following burns or major surgery (Clark and Groves, 1979). It is not uncommon to have difficulty in visualizing the anterior commissure. In difficult cases a slim instrument such as the anterior commissure laryngoscope or slimline microlaryngoscope may allow direct vision and instrumentation. A 30° telescope may allow a precise, albeit, indirect view (Benjamin, 1990). Despite Chevalier Jackson's assertion that 'the larynx can be directly examined in any patient whose mouth can be opened', (Jackson and Jackson, 1934) there exists a small group of patients in whom it is not possible. The use of the flexible fibre-optic endoscope usually

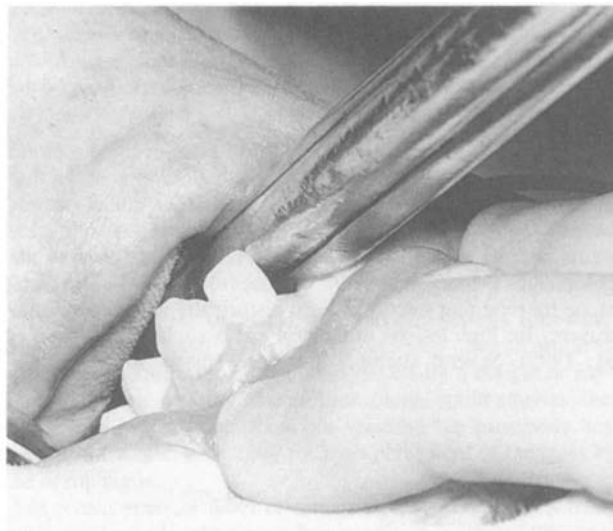


FIG. 1

Laryngoscope being passed through gap created in teeth.

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allows visualization but adequate biopsies of tissue are difficult. Removing and reimplanting the incisor teeth is recommended in cases of difficulty.

When a permanent tooth is avulsed and reimplanted the prognosis for survival of the pulp and periodontal ligament is dependent upon: (i) the length of time the tooth is out of its socket; (ii) the treatment of the tooth while it is free of the jaw; (iii) the state of development of the tooth at the time of injury.

Healing is best achieved with a short period out of the socket and a physiologically compatible medium, such as blood, saline, milk or saliva. Younger teeth with incompletely formed roots (open apices) have a better prognosis than those which are fully formed, due to the greater potential for revascularization. Revascularization begins about the fourth day post-implantation and proceeds at the rate of approximately 0.5 mm per day (Andreasen and Andreasen, 1990). Gingival reattachment occurs within one week of injury and by the end of the second week the periodontal ligament has reached approximately 2/3 of its full strength.

Where there is damage to the periodontal ligament some superficial cavitation of the root surface may occur due to local resorption. This continues if pulpal necrosis occurs as the bacterial toxins are able to permeate through the dentinal tubules to the root surface and if untreated may lead to root resorption which may proceed to exfoliation of the tooth. This process may be halted by root canal treatment (Andreasen and Hjørting-Hansen, 1966).

We recommend the use of this technique if other methods have failed and a biopsy is required. It is necessary, however, to warn the patient that the tooth may need subsequent root canal treatment.

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