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The importance and provision of oral hygiene in surgical patients

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Abstract The provision of mouth care on the general surgical ward and intensive care setting has recently gained momentum as an important aspect of patient care. Oropharyngeal morbidity can cause pain and disordered swallowing leading to reluctance in commencing or maintaining an adequate dietary intake. On the intensive care unit, aside from patient discomfort and general well-being, oral hygiene is integral to the prevention of ventilator-associated pneumonia. Chlorhexidine (0.2%) is widely used to decrease oral bacterial loading, dental bacterial plaque and gingivitis. Pineapple juice has gained favour as a salivary stimulant in those with a dry mouth or coated tongue. Tooth brushing is the ideal method of promoting oral hygiene. Brushing is feasible in the vast majority, although access is problematic in ventilated patients. Surgical patients undergoing palliative treatment are particularly prone to oral morbidity that may require specific but simple remedies. Neglect of basic aspects of patient care, typified by poor oral hygiene, can be detrimental to surgical outcome.

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The provision of mouth care on the general surgical ward and intensive care setting has recently gained momentum as an important facet of nursing care. Increasingly over the past few years the nil by mouth sign above the patient's bed is accompanied by an intriguing pot of pink solution or fruit juice with a pink dressing sponge on a stick for application. Aside from the potential spillage when hastily moving the patient's bedside trolley before examination, clinicians should pay more attention to this simple measure as it can alter clinical outcome.

Surgeons encounter issues regarding oral hygiene and mouth care in three broad settings: ward patients unable to

tolerate oral fluids or diet; ventilated or sedated patients on the intensive care unit or those requiring palliative care. However, many surgical patients have poor oral hygiene exacerbated by debility, xerostomia, chemotherapy and dehydration.

Oropharyngeal morbidity can cause pain, altered taste or disordered swallowing that can lead to reluctance in commencing or maintaining an adequate dietary intake.¹

Tooth brushing is the ideal method of promoting oral hygiene. Most patients will be able to perform the task adequately with the minority requiring encouragement or relying on clinical staff to brush for them. On the surgical ward, simple antiseptic mouthwashes such as 0.2% chlorhexidine are widely used as an adjunct to promote a decrease in oral bacterial loading, dental bacterial plaque and gingivitis.^{2,3} Physical inability to rinse the mouth should

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not preclude tooth brushing. Pink dressing sponges can be soaked with water or chlorhexidine and apposed against the teeth to effect delivery and aid mechanical removal of oral debris.

Fruit juices, namely pineapple has gained favour as a salivary stimulant in those with a dry mouth or coated tongue. Pineapple probably exerts its effects via a non-specific increase in salivary flow rather than the specific action of the contained proteolytic enzyme ananase.⁴ However, caution is required as such acidic substance can rapidly precipitate dental caries in those with xerostomia, especially if used for any length of time.⁵ Indeed, many would strongly discourage fruit juices in favour of regular sips of water in those deemed nil by mouth. Other effective salivary stimulants include sugar free chewing gum and mints.⁴

Oral candidiasis is usually pseudomembranous with creamy white curd-like patches which can be removed with a swab. Occasionally candidiasis is evidenced by erythematous plaques or angular cheilitis.¹ Nystatin suspension is widely prescribed, however, more refractory cases of multifactorial origin, are notoriously difficult to remedy and may require fluconazole 50 mg or guidance from an expert on oral medicine. Aphthous ulcers are commonly encountered and can be soothed with topical corticosteroids (betamethasone 0.5 mg in 5 ml water as mouthwash or triamcinolone/carmellose paste) or tetracycline mouthwash (250 mg – contents of one capsule dissolved in 5 ml water every 8 h) although these must be used with caution as they can promote oral candidiasis.^{5,1} Pain from persistent ulceration or mucositis may be eased by coating agents (sucralfate suspension or carmellose paste) or a topical anaesthetics (benzylamine mouthwash or lidocaine lozenges).¹ Herpes Simplex or Zoster, if severe, may require oral antiviral therapy with aciclovir or famciclovir, respectively.

In the intensive care setting, aside from patient discomfort and general well-being, oral hygiene is integral to the prevention of ventilator-associated pneumonia.⁶ Colonisation of dental plaque and oropharyngeal epithelial cells with respiratory pathogens such as *Pseudomonas aeruginosa* is thought to be mediated via alterations in oral physiology with depletion of the glycoprotein fibronectin facilitating pathogen adhesion.⁷ Oropharyngeal flora of critically ill patients undergoes a change from the usual predominance of gram positive streptococci to that of gram negative organisms with the potential to translocate and colonise the lung.⁸

Although provision of oral hygiene is considered to be a basic nursing practice, it risks being relegated to a lower priority when caring for the complex intensive care patient.⁹

The use of mechanised toothbrushes for a ventilated patient has been shown to be superior to sponges for

mechanical removal of dental plaque,¹⁰ although the oral cavity is often difficult to access in the critically ill due to the presence of endotracheal and nasogastric tubes.¹¹ It is possible to use toothbrushes designed for minors, however, tooth brushing runs the theoretical risk of dislodging the endotracheal tube.¹¹ If brushing is impossible, valuable alternatives include chlorhexidine soaked sponges or more controversially sodium bicarbonate mouthwash to reduce the viscosity of oral mucus to enhance removal of debris.¹¹ Mouthwashes can also be delivered with the use of a syringe and extracted with a flexible suction device with special attention to secretions pooled above the endotracheal tube cuff.¹¹ Emollients such as petroleum jelly can promote maintenance of perioral skin integrity.¹

Collectively surgical patients are prone to poor oral hygiene. Prevention of oropharyngeal morbidity should be given a high clinical and nursing priority as it not only promotes patient comfort and general well-being but can also reduce the incidence of ventilator-associated pneumonia and therefore surgical outcome.

Conflicts of interest

None declared.

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