

Management of a hospitalised patient with dementia – a lesson learned

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Abstract

This report describes the multidisciplinary management of an 80-year-old patient with dementia who developed severe ulceration to her lower lip as a result of habitual lip biting whilst in hospital. The ulceration was of such an extent it prevented the patient from being able to eat and drink, caused a rapid deterioration in oral health, contributed to a four-month ward stay and may have been a cause of hospital acquired pneumonia. The aim of this report is to raise awareness of the importance of oral health as part of general health of vulnerable hospitalised patients.

Key words: *Special Care Dentistry, lip biting, dry mouth, pneumonia, mouthcare*

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Introduction

There is well-established evidence regarding the link between poor oral hygiene and systemic disease, particularly the occurrence and progressions of respiratory diseases including aspiration pneumonia, ventilator assisted pneumonia and hospital acquired infections amongst high-risk elderly adults (Scannapieco 1999; Azarpazhooh and Leake 2006; Shi *et al.*, 2013). However, hospitalisation is associated with deterioration in oral health and this may in turn lead to poor nutritional intake, longer hospital stay and increased care costs (Terezakis *et al.*, 2011). Many hospitals do not have policies in place for routine oral health practices and patients' oral health is not being assessed (Sousa *et al.*, 2014). There are several documented barriers to nurses providing oral care including a lack of knowledge or training, no equipment for providing oral care and time constraints (Adams, 1996; Preston *et al.*, 2006).

Hospitalised patients often develop dry mouths during their stay due to a variety of reasons, ranging from dehydration to polypharmacy (Pajukoski, 2001). Oral hygiene provision has previously been ranked low on a list of priorities by nursing staff (Grap *et al.*, 2003), this aversion to closely monitoring and managing oral health combined with xerostomia presents problems to hospitalised patients.

Case report

An 80-year-old female patient with moderate stage dementia and well-controlled hypertension was initially taken to the Accident and Emergency Department at East Surrey Hospital following a fall at home. She was admitted to enable further testing for any acute medical conditions and ten days following admission, preparations were made to discharge her from the hospital to an appropriate care facility. During her hospital stay the patient developed a traumatic habit of grinding her lower lip into her upper incisors and it was this continuous action that resulted in severe ulceration and swelling of the lower lip. She started to refuse food and drink which led to a rapid deterioration in physical and mental health.

A written referral was made by the Physician Associate to the Oral and Maxillofacial team three days after the lesion on the lip was initially noticed. At this point in time, the patient had been diagnosed with a suspected urinary tract infection and hypoactive delirium. On assessment, the Oral Surgery staff grade dentist found that the patient was unresponsive, and resistant to examination. An internal referral was made to the Special Care Dentistry service to facilitate a general anaesthetic for examination and extraction of upper anterior teeth.

The Special Care team received the referral two days later and the patient was seen urgently. The patient was very frail

and not coherent and despite reservations by her medical team due to the associated risks was now being fed via a nasogastric tube.

Extra oral examination showed large ulceration of the lower lip with an erythematous inflamed border (*Figure 1*), showing that the patient was pushing her lower lip into space created by a missing central incisor and repeatedly grinding it into her teeth. The patient was mouth breathing and the lips and soft tissues were extremely dry with thick stringy saliva. There were thick plaque deposits, post haemorrhagic residue, and acute gingival inflammation. The patient's tongue was sticking to her palate and she had signs of oral candida. The patient had the majority of her natural teeth; they were firm and minimally restored.

There was no oral health assessment or record of mouth care in the hospital notes and the patient's toothbrush was very dry indicating it had not been used. The risks of a general anaesthetic to this medically compromised patient were high and not indicated as first line treatment and a decision was made to treat the lesion more conservatively.

The patient was prescribed hydrocortisone cream 2.5% to be applied externally to the lip, 2.5mg muco-adhesive hydrocortisone tablets to be placed intraoral adjacent to the ulcer and benzydamine hydrochloride spray 0.15% spray for pain relief. A degree of clinical holding was necessary to obtain a good upper alginate impression to enable construction of an upper soft mouth guard to minimise the lip biting. The management of the dry mouth and importance of providing oral hygiene was discussed with the nursing and medical team. They were provided with dry mouth moisturising gels and were shown how to massage it into the lips and soft tissues on a two hourly basis. The staff were advised to moisten the mouth using a small-headed toothbrush either with water or dry mouth gel. A mild flavoured non-foaming (sodium lauryl sulphate free) toothpaste and a small headed toothbrush were provided to be used for tooth brushing as the patient was a high aspiration risk due to her low level of understanding. The nursing staff welcomed the bed side training by the dental team as they thought it was better to abstain from tooth brushing as there was severe ulceration.

Figure 1: Initial assessment, unable to take intra oral photograph as patient uncooperative.



Figure 2: Mouth guard being fitted – taken at the same time as Figures 3 and 4.



That evening the patient's general health deteriorated. The medical emergency response team was called out and the patient was diagnosed with hospital-acquired pneumonia. The results from a swab of the lip lesions came back as MRSA positive, and the patient's overall health declined to

Figures 3 and 4: Following a week of steroid and moistening agent application improvement in soft tissues enabled better manipulation and examination. The full extent of the intraoral lesion is visible.



Figures 5 and 6: Healing ulceration following two weeks of treatment.

the point that the family were contacted and a 'Do Not Resuscitate' form was completed.

A soft mouth guard was fitted the next day (*Figure 2*); it was retentive and not considered an aspiration risk. The nursing staff were shown how to insert and remove it and advised to clean it daily. The regular application of dry mouth gels had made the soft tissues much softer. This enabled the lower lip to glide off the upper incisors with the mouth guard in place.

The dental team reviewed the patient twice weekly and observed improvements in her general health and noted that the lip lesions were resolving (*Figures 3-6*). Prior to discharge from the hospital eight weeks later, the patient was reviewed by the Special Care team; she was sitting in the bedside chair, responsive, able to feed herself and watching television. The marked improvement in her general well-being was such that the dental team initially thought they had entered the wrong room. The mouth guard had been successful in breaking the patient's habit, and by correctly managing the xerostomia, it was no longer required (*Figures 6-8*).

Discussion

This case report describes how delays and failure to treat an oral condition led to a severe deterioration in the general

physical and cognitive health of an older, vulnerable patient and potentially led to a life threatening situation. There is evidence to support that the causes of these failings, as described below, are common problems in many hospitals.

Delays in communication

The patient received initial treatment by the hospital based Special Care Dentistry team five days after the lip ulcer was noticed by medical staff. During this time the patient stopped eating and drinking and became severely dehydrated. There was a clear delay in communication between the various teams that has since been addressed by the dental department obtaining a bleep, and arranging high profile meetings within the trust to raise awareness.

Dry mouth on hospital wards

Dry mouth (xerostomia) is a multifactorial problem for hospitalised patients in general, and is known to have a pronounced negative effect on the quality of life of frail older patients (Hahnel, *et al.*, 2005). It can be caused by dehydration, pharmaceutical treatment, systemic diseases and exposure of saliva glands to radiation (Guggenheimer and Moore 2003). The patient in this case report had an

Figures 7 and 8: Healing ulceration five weeks following commencement of treatment.

Figure 9: Healing ulceration following two weeks of treatment.

extremely dry mouth as a combined result of dehydration, mouth breathing and the xerostomic side effects of her regular antihypertensive medication, amlodipine. The xerostomia is likely to have exacerbated the traumatic ulceration and pain experienced by the patient, who was unable to communicate this to the medical team.

Lack of knowledge of doctors and nurses

There was an apparent lack of knowledge of the links between oral health and general health, including the links between poor oral health and hospital-acquired pneumonia, within the ward team.

The authors cannot prove a direct link in this case between the patient's oral health and the development of her pneumonia, especially as having a nasogastric tube in an immobile patient is also a risk factor, however the absence of oral hygiene should certainly ring alarm bells, when risk assessing an immobile and vulnerable patient. Reduced oxygen saturations were noted and accepted by the medical team after placing nasal oxygen, due to the patient persistently mouth breathing. No link was made between a dehydrated, immobile, mouth breathing patient, who was effectively nil-by-mouth, and the possible discomfort and risks that a dry mouth poses.

Pneumonia is the most common cause of mortality from hospital acquired infection in older patients with very high mortality rates (NICE, 2014) with mortality rates of up to 25% (Niederman, 1993). Providing good oral hygiene measures such as regular removal of plaque with a toothbrush may prevent approximately 1 in 10 cases of death from pneumonia in dependent elderly people in care homes (Sjogren *et al.*, 2008).

Lack of training

Following a discussion with the nursing staff, it was apparent that they did not know how to support this high-risk patient with suitable mouth care. A survey was carried out at the hospital, which showed that less than 45% of registered nurses had had any form of mouth care training during their nursing career. The majority of mouth care is provided by nursing assistants of whom fewer than 10% have had mouth care training (Survey of mouth care practice, East Surrey Hospital).

Oral health risk assessments

There was no oral health risk assessment recorded in the hospital notes. Completed oral health risk assessments and

oral health plans would help to identify patients that require additional support with mouth care and indicate when further dental / medical advice was necessary. Studies in Intensive Care Units have shown an improvement in oral health with the introduction of oral health assessments (Wyatt, 2009).

Plan to solve these failings

The case and discussion highlight the need for training for both nursing staff and doctors in mouth care and oral health. A programme called 'Mouth Care Matters' has been devised by Surrey and Sussex Health Care trust in associations with Health Education Kent, Surrey and Sussex (HEKSS) and links with the HEKSS 'Improving the oral health of older persons' initiative. In order to resolve the failings in patient care experienced by this patient and others, the programme will incorporate the following:

- Interactive small group teaching with nursing staff addressing the importance of oral health
- Patient centred ward based training by a team of dental care professionals
- Improvement of links between the Dental department, Speech and Language Therapy, Dietetics, Pharmacy and Occupational Therapists providing a holistic approach to oral care
- Training for junior doctors in common mouth care conditions in the wards including fungal infection and mouth ulcers
- Introduction of mouth care champions for each ward that have enhanced training in oral health
- Evaluating the use of a dental departmental 'bleep' and raising awareness of the dental department within the hospital, to reduce time taken to receive/respond to a referral
- Ensuring staff have access to the 'right tools' for providing mouth care for example small headed tooth brushes, dry mouth gels and non-foaming toothpaste. Removing the pink foam sponges currently being used, as there have been safety concerns of foam detachment (Gov.uk, 2012). The team has started to substitute foam sponges with 'MouthEze' a device with soft filaments to enable ward staff to hydrate mouths with water or dry mouth gels, removed dried saliva secretions and clean coated tongues (Figure 9).

Conclusion

The importance of dental input of the multi-disciplinary ward team cannot be understated, and this case highlights

the very real consequences of incorrect management. Although this has focused on one patient treated in secondary care the application to patient care in other settings can be readily drawn. In vulnerable patients seen in primary care or in the community, the effect of a dry mouth should not be overlooked. It is crucial that within our hospitals patients have regular mouth care assessments and care carried out by trained nursing professionals.

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