The impact of dementia on the care of dental implants: a case report

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Abstract

This case report highlights the implication of dementia for the care of an implant-retained denture in a patient in a nursing home. This is a situation that will become an increasingly frequent complication in the oral care of older people as implants become more common.

Key words: Implants, dementia, consent, older people

Introduction

The use of implants for the retention of a lower complete denture is becoming an increasingly common technique for patients who are faced with retention and stability difficulties when treated with conventional prostheses. The rehabilitation of the edentulous mandible with an implant-retained denture is now considered as gold standard (Saha and Ray-Chaudhuri, 2009).

Dementia is the broad term for a degenerative and progressive disease of neurological tissue. The most common form is Alzheimer Disease which accounts for 50-60% of diagnosed cases, although there are a number of other causes, examples of which include alcohol abuse and rarely Creutzfeld Jacob Disease (CJD). Vascular dementia is the second most common type and occurs as a result of a cerebrovascular accident (CVA) or small blood vessel disease within the brain. Dementia is marked by a reduced ability to cope with the activities of daily living due to a reduction in cognitive ability (Fiske et al., 2006; Alzheimer’s Society, 2009). There are a number of published national guidelines for the care of dementia patients both generally and in relation to their oral care (Jones et al., 2000; Fiske et al., 2006; National Institute for Health and Clinical Excellence, 2006).

The difficulties faced by people with dementia in relation to their oral care are well documented. Cognitive deterioration can result in the loss of routine and a reduction in understanding of daily self care. This is often exacerbated by a physical inability to perform their own oral care. It has been shown that patients with moderate and advanced dementia have a poorer oral health status (Chalmers and Pearson, 2005).

This case highlights the difficulties encountered in the maintenance of implants when a change in medical status reduced a patient’s ability to care for an osseointegrated implant-retained lower prosthesis. This is, to our knowledge, the first time this has been documented.

Report of a case

The patient was an 89-year-old lady who had recently moved into a residential care home and was treated on a domiciliary basis. At 67 years of age, she had three implants placed in her anterior mandible and a bar superstructure added to retain her complete denture (Figure 1). In the intervening 22 years, the patient attended the dental hospital where the implants were placed, for regular review; during this time she had five sets of complete dentures constructed and her current set was seven years old. She had also attended the periodontal department quarterly for scaling around the implants. The patient’s health declined and, as she was no longer capable of travelling to the dental hospital for this maintenance, she was referred to the community dental services by her consultant prosthodontist. A copy of her dental hospital case notes was obtained.

On first attendance at the nursing home the patient was found to be habitually pushing her lower denture out from her mouth and staff were concerned it was loose. They also reported that she had been taking her lower denture out and leaving it lying around in varying places within the nursing home.

The patient suffered from ischaemic heart disease; pre-infarction syndrome; transient cerebral ischaemia; spondylosis and vascular dementia. Her medication included nicorandil, citalopram, gabapentine, omeprazole, GTN spray and paracetamol.

The patient was happy to co-operate for an examination. It was noted that her soft tissues were healthy and she was successfully wearing a complete upper denture. The lower denture used two clip attachments and was secured firmly onto an implant bar (Figure 2). The implants were firm although there was associated gingival recession. There were plaque deposits and probing depths of 1-2mm with bleeding.
Although the patient co-operated with dental staff for care it was thought that due to her dementia she did not fully understand the implications of her treatment and so could not fully consent to this care. As required by Scottish law, a Certificate of Incapacity was sought from her general medical practitioner (Adults with Incapacity (Scotland) Act, 2000) and this was discussed with her next of kin.

Treatment

As the patient appeared comfortable when the lower denture was not in place it was decided that her care staff would leave the lower denture out but ensure it was in place before any meals to aid mastication. This policy had varying success as different staff did not always remember to clip the denture in before meals and on mornings when the patient requested her lower denture be placed in her mouth, at the same time as the upper denture, the lower denture was inserted. The patient was reassessed after a few weeks. There was no trauma noted to any of the soft tissue below the upper denture as a result of occluding on the implant structure. At the same time, the patient, who was on a soft diet, was assessed by a dietician and found to be achieving her nutritional needs. Anecdotally, care staff had not noticed any difference in time spent over a meal or volume consumed regardless of whether the lower denture was worn. This meant the patient was able to achieve an adequate diet and was not traumatising her soft tissues by eating without her lower denture in place. Subsequently, it was decided that if the denture was lost it would not cause her physical hardship and so it should not be withheld if she wanted it in place outside of mealtimes.

Outcomes

Implant compatible hand scalers were ordered and the community hygienist now carries out three monthly scaling of the implants on a domiciliary basis. The hygienist also provided training for staff in the home, specifically on dental implants and their care. Care staff were also shown how to place and remove the denture from the bar. The nursing home care staff now carry out daily oral hygiene measures to clean the superstructure and the implant gingival margins. Superfloss is often used to clean under the bar superstructure. In addition, a small-headed toothbrush is utilised as alveolar recession has resulted in adequate access. The patient’s denture(s) is removed at night and placed in a discharge sodium hypochlorite solution. Her oral care requirements are documented in her overall care plan. The patient was reassessed after a few weeks. There was no trauma noted to any of the soft tissue below the upper denture as a result of occluding on the implant structure. The longer term implications of the situation on the stability of the implants is not yet known but will be monitored.

Discussion

The patient’s cognitive ability had diminished to the point that she was no longer able to maintain her strict oral hygiene routine which, it is assumed, she must have employed in order to have successfully retained integrated implants for over 22 years. As is often the case for dementia patients, she is now reliant on others for daily oral hygiene (Zasshi, 2006). Therefore, it is important that care staff have the basic skills required to clean around an implant. This case also shows the importance of dental staff having an up-to-date knowledge of implants and the maintenance care required even if they do not carry out implant placement themselves.

Different treatment plans were considered. One alternative was to remove the suprastructure and place caps upon the three implants at gingival level. This may have proven problematic as different implant manufacturers use different tools and fittings and the implant type was unknown. Taking the potential difficulties of removing the suprastructure and the patient’s medical history into consideration, this was an unappealing option. Additionally in the author’s opinion this line of treatment would have severely tested the patient’s compliance.

Another option to be considered was making a replica copy of the current denture so that a replacement could have been fabricated, in the event of the original being lost. Matching the implant clip attachments may have caused some difficulty due to variation between implant manufacturers. If matching the clip attachments was possible then it would mean the patient’s appearance would have been maintained. Due to the patient’s cognitive decline and consequent communication problems it is difficult to determine whether not having a lower denture in place had a negative affect on her self-esteem. However, as the patient was regularly removing the denture and leaving it in inappropriate places in the nursing home, it was concluded that, if it was lost, any replacement was likely to suffer the same fate.

In this case study there were a number of complex patient factors such as reduced physical dexterity, impaired sensory function, cognitive defects, communication and behavioural problems that were associated with the patient’s dementia. Subsequently, a simpler treatment plan was developed and followed. Encouragingly, the patient was able to eat successfully by occluding on the implant bar and upper denture. The longer term implications of the situation on the stability of the implants is not yet known but will be monitored.

Conclusion

The literature contains much on the maintenance of dental restorations in the patient whose health is failing and informative oral advice available for carers and those suffering from dementia (Fiske et al., 2006; Zasshi, 2006; Alzheimer’s Society, 2009). Unfortunately, most of this guidance focuses on the natural dentition or conventional dentures and there is little mention of implants. The management of cases such as this will increasingly become an issue for those providing dental services to older people, due to the popularity of implant-retained lower dentures and an ageing population.
**Figure 1. The implants in situ**

![Image of the implants in situ]

**Figure 2. The lower denture showing clips**

![Image of the lower denture showing clips]

**References**

*Advis with Incapacity* (Scotland) Act 2000


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