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PAPER

Stroke

and oral health

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Oral health is a standard of health which enables an individual to eat, speak and socialise without active disease, discomfort or embarrassment. This contributes to general well being and allows people to eat nutritious foods. A clean mouth feels good and the practice of oral hygiene is a crucial factor in maintaining the health of the mouth.¹

Stroke in the UK

In the UK stroke is the third commonest cause of death and is the most common cause of severe disability. Every year, an estimated 150,000 people have a stroke and 20-30% of them die within a month. More than 250,000 people live with stroke disabilities. Most people affected are over 65 but around 1,000 people under 30-years-old have a stroke each year.² Stroke costs the National Health Service (NHS)

and the economy about £7 billion a year – £2.8 billion to the NHS, £2.4 billion in informal care costs and £1.8 billion in income lost to mortality, morbidity and benefit payments. Stroke patients occupy over 2.6 million hospital bed days per year.³

Stroke types and symptoms

Stroke or cerebrovascular accident (CVA), its full name, is due to partial or total obstruction of blood flow to the brain.

Ischaemic stroke

This is the commonest type of stroke and happens when a clot blocks an artery that carries blood to the brain. It may be caused by a cerebral thrombosis, when a blood clot (thrombus) forms in an artery to the brain. Another reason may be a cerebral embolism, when a blockage caused by a clot, air bubble or fat globule

(embolism) forms in a blood vessel somewhere else in the body and is carried via the bloodstream to the brain. Or it can be a blockage in the tiny blood vessels deep within the brain, called a 'lacunar stroke'.

Haemorrhagic stroke

This is when a blood vessel bursts, causing bleeding into the brain. It may be due to a sub-arachnoid haemorrhage, when a blood vessel on the surface of the brain bleeds into the area between the brain and the skull, the subarachnoid space.

TIA

A TIA is a transient ischaemic attack, known as a mini-stroke; this occurs when the brain's blood supply is briefly interrupted. The symptoms are similar to a stroke but are temporary, disappearing completely within 24 hours.

The risk of recurrent stroke in a patient with a history of stroke or TIAs is greater than the risk of a first stroke in a person with no prior history of stroke.⁴ To reduce the risks a patient should eat healthily, exercise and take medications as indicated.

The common signs that someone has had a stroke are sudden and the effects on the body immediate. Symptoms include numbness, weakness or paralysis on one side of the body; signs of this may be a drooping arm, lower eyelid, or a dribbling mouth.⁵ The patient may have slurred speech or difficulty finding words or understanding speech, or sudden blurred vision or loss of sight. The patient may also have problems in thinking, memory, concentration and alertness, which may frequently lead to difficulty with communication and follow-up with dental instructions.

These patients often experience depression, anxiety, mood swings and extreme tiredness, which may result in failure of patients to keep their dental appointments, appreciate treatment objectives or comply with oral hygiene instructions.⁴ Patients may also be confused and unable to recognise the use or function of everyday objects related to oral health care or to their dentures.⁶

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Oral care

People who survive stroke need to go through rehabilitation. This is aimed at helping people regain as much independence as possible by relearning skills. This involves processes including: physiotherapy, occupational therapy, speech and language therapy, help with swallowing, vision, psychological changes, support at home and rehabilitation in the community.²

Oral care can be a challenging task for those who have any impairment and loss of motor function. In stroke, patients have both sensory and motor deficits.⁷ Oral care is often overlooked during stroke rehabilitation. Physical weakness, lack of coordination and the cognitive problems that can accompany a stroke may prevent a person from maintaining good oral hygiene on their own.⁸

The loss of senses, weakness of facial muscles and side effects of medications can put stroke patients at a high risk for dental problems. Paralysis of the tongue and mouth can leave patients not recognising that food has been left there from meal times, until the next oral cleaning.



To summarise, the common problems in the oral cavity associated with stroke are: gingivitis, periodontitis, tooth loss, halitosis, ill fitting dentures and xerostomia.

Prevention

People with special needs, like stroke patients, have more dental disease and more difficulty obtaining dental care than other segments of the population. Once care is accessed and obtained often there is inadequate attention to preventing dental disease in these populations. The combination of this with a greater disease burden, scarce treatment resources and more difficulty in performing treatment results in pain, suffering and social stigma in these populations beyond that found in other segments of society.¹¹



Nutritional supplements prescribed during rehabilitation can be cariogenic. Oral sensorimotor impairment may result in neglect of oral hygiene on the affected side, which predisposes patients to caries, periodontal disease and halitosis. Caries susceptibility is exacerbated by xerostomia inducing medications used in the management of stroke.⁴

Post-stroke paralysis in facial muscles may lead to poorly fitting dentures which can lead to denture stomatitis.⁹

In severe stroke cases, if a person cannot eat by mouth special feeding techniques might be used such as naso-gastric feeding or percutaneous endoscopic gastrostomy (a feeding tube that goes into the stomach directly through the abdominal wall). Oral care is important for patients with tube feeding as oral muscular tension often prevents them from receiving the appropriate oral care.¹⁰



The barriers to prevention of dental disease for stroke patients can be classified into: informational, physical and behavioural.

Informational barriers

These include a lack of understanding among individuals and caregivers about effective prevention practices. Dental professionals can have an important role in passing on this information in dental practices, community

situations and in institutional care settings.¹¹ According to a Cochrane review, stroke survivors and their carers often feel they have not been given enough stroke information. It may not be adequate to provide only written information but also to give educational presentations to hospital staff which may be more effective. Future research should aim to deliver information which meets the needs identified by patients and carers.¹²

Physical barriers

Some people have an understanding about what needs to be done but lack the musculature, dexterity or coordination to do it. There are various adaptations and aids that can help; again dental professionals can play a pivotal role in educating caregivers about the use of physical adaptations, such as modifying oral hygiene products, to make it easier for patients.

‘Communication with other healthcare professionals is essential in the management of patients with special needs.’

Behavioural obstacles

With a view to preventing dental disease, there can be resistance to performing oral hygiene for a variety of reasons in stroke patients, such as communication. This could be improved by structuring the environment; picking a place or time of day that is more conducive to the patient may gain their cooperation.¹³ The next step would be to involve the individual – maybe simply letting the patient choose when to brush their teeth – to ensure their participation. Encourage caregivers to give praise to motivate the patient to become more independent in oral hygiene.

After a stroke, there is a reduction in food intake which leads to dysfunction in the salivary glands through disuse. As a consequence xerostomia is a problem for stroke patients but the use of artificial saliva or chewing gum can improve salivation. Even if some salivary

secretory nerves are damaged, gum chewing may increase salivary secretion.¹⁴ An additional advantage of the saliva substitute is that the moist film aids denture retention. It is worth considering if the dentures need to be modified for easier placement and removal; a dentist could advise on this.

If a patient aspirates, this will go down their trachea and if the patient’s oral hygiene is poor then an aspiration can result in pneumonia, poor nutrition and dehydration which will have a negative impact on daily activities and quality of life and result in eventual death.¹⁵ Maintaining good oral care might be useful to reduce respiratory infections due to pharyngeal aspiration in some elderly patients.¹⁶

Conclusion

A standard evidence-based protocol for dental management of stroke patients is not available; current recommendations are based primarily on intuitive extrapolations from medical literature.⁴ Medical staff and carers of patients require improved education about oro-dental problems and prosthetic care. Communication with other healthcare professionals is essential in the management of patients with special needs. Due to the limited guidance available the author has identified that stroke patients need to receive support and formal guidelines to improve management of oral health and notes a need for further research.

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