



## ABC of oral health: Oral health care for patients with special needs

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*ABC of oral health***Oral health care for patients with special needs**

Roger Davies, Raman Bedi, Crispian Scully

People with special needs are those whose dental care is complicated by a physical, mental, or social disability. They have tended to receive less oral health care, or of lower quality, than the general population, yet they may have oral problems that can affect systemic health. Improving oral health for people with special needs is possible mainly through community based dental care systems. Education of patients and parents or carers with regard to prevention and treatment of oral disease must be planned from an early stage. This will minimise disease and operative intervention since extractions and surgical procedures in particular often produce major problems. Dental healthcare workers also often need to be educated about this subject.

In this context various conditions can lead to people needing special care, not least patients with dental phobias. Many of these patients can be treated with behavioural modification techniques, though a minority will require sedation or general anaesthesia.

This article concentrates on those who are medically compromised, mentally challenged, mentally ill, or socially excluded.

**Medically compromised patients**

The commonest problems are in patients with a bleeding tendency or cardiovascular disease, or who are immunocompromised.

**Bleeding disorders**

Dental extractions and surgical procedures, including local analgesic injections, can cause problems in patients treated with anticoagulant drugs and those with coagulation defects or severe thrombocytopenic states.

With patients treated with anticoagulant drugs, local analgesia and minor surgery (simple extractions of two or three teeth) may generally be carried out safely in general practice with no change in treatment if test results are within the normal therapeutic range (international normalised ratio  $< 3$ ). The same is true for patients with thrombocytopenia if the platelet count exceeds  $50 \times 10^9/l$ . Postoperatively, a 4.8% tranexamic acid mouthwash, 10 ml used four times daily for a week, may help.

In all but severe cases of haemophilia, non-surgical dental treatment can be carried out on haemophilic patients under antifibrinolytic cover (tranexamic acid), though care must be taken to maintain urinary flow to avoid urinary blood clot problems. Haematological advice must be sought before other procedures are undertaken. With mild haemophilia, minor oral surgery may be possible under desmopressin (DDAVP) cover. In other cases factor replacement is necessary.

**Cardiovascular disease***Ischaemic heart disease*

It is generally accepted that routine dentistry for most patients with ischaemic heart disease should be undertaken using short appointments and under local analgesia. More complex surgical procedures should be carried out in hospital with full cardiac monitoring. Elective dental care for patients who have recently had a myocardial infarct should be deferred for at least three months, and some recommend a delay of 12 months.



Appalling oral hygiene and periodontitis in a patient awaiting cardiac valvular surgery. Dental procedures involving gingival laceration or periodontal disruption (such as extraction) can produce bacteraemia of oral microorganisms, which could lead to infective endocarditis



Erythematous candidiasis, presenting as a median rhomboid glossitis, is common in patients with immune defects

**In patients with bleeding disorders**

- Surgery can be hazardous in bleeding states
- Haemophilic patients need factor replacement before most surgery
- Patients treated with anticoagulant drugs can usually safely undergo minor procedures if the international normalised ratio  $< 3$
- Thrombocytopenic patients can usually safely undergo minor procedures if platelet count is over  $50 \times 10^9/l$
- Tranexamic mouthwashes used postoperatively may help haemostasis
- Good oral care and hygiene are essential

### Cardiac pacemakers

The chief hazards from dental equipment to pacemakers are from electrosurgery and diathermy, but these are infrequently used and the risk from other equipment such as ultrasonic scalars or pulp testers is very small.

### Cardiac valvular defects

Tooth extractions and dental procedures involving the periodontium can produce a bacteraemia of oral microorganisms, especially *Streptococcus mutans* and *S sanguis*, which can lead to infective endocarditis in patients at risk. However, dental treatment precedes only 10-15% of diagnosed cases, and in real terms the risks are thought to be fairly remote.

Oral health care (including maintaining high levels of oral hygiene) should be completed before valvular surgery. It is considered prudent to provide antibiotic cover for patients at risk who are about to have extractions, periodontal surgery, mucogingival flaps raised (oral surgery), scaling, tooth reimplantation, or other procedures where there is gingival laceration. However, there is no convincing evidence for the need for antibiotic prophylaxis for most local analgesic injections or for non-surgical, prosthetic, restorative, or orthodontic procedures other than banding or debanding.

The current basic recommendations are to use a chlorhexidine mouthwash and, one hour before the dental procedure, a single oral dose of 3 g of amoxicillin (or 600 mg clindamycin for patients allergic to penicillin). Patients with a history of infective endocarditis require intravenous antibiotic prophylaxis.

### Immunocompromised patients

Oral diseases in immunocompromised people tend to be more common with poor oral hygiene, malnutrition, and tobacco use. The commonest lesions are candidiasis and herpes viral infections, but others include ulcers, periodontal disease, and malignant neoplasms. Purpura and spontaneous gingival bleeding also are seen in patients with leukaemia. Drugs such as ciclosporin can cause gingival swelling.

Oral lesions in patients with HIV infection or AIDS are most likely to appear when the CD4 cell count is low and are often controlled, at least temporarily, by antiretroviral treatment. Anti-HIV drugs can cause oral problems such as ulcers, xerostomia, and salivary gland swelling. Oral features are now classified as strongly, less commonly, or possibly associated with HIV infection.

### Candidiasis

Thrush and erythematous candidiasis are common in patients with immune defects and are often an early manifestation of the immunodeficiency. There is an increase, especially in those with HIV infection or AIDS, in antifungal resistance of *Candida albicans* and in non-*albicans* species such as *C krusei* and new species such as *C dubliniensis* and *C inconspicua*. Fluconazole in high doses, however, is often still effective.

### Viral infections

Herpesviruses, especially herpes simplex virus, may cause herpes labialis, or oral or perioral ulcers. Hairy leucoplakia, a common corrugated (or "hairy") white lesion, is usually seen in HIV infection or AIDS but may be seen in any immunocompromising state.

### Mouth ulcers

Ulcers in immunocompromised persons may be related to aphthous type ulcers, infections (herpesviruses, mycoses (especially histoplasmosis or cryptococcosis), mycobacteria or

### In patients with cardiac valvular defects

- Good oral care and hygiene are essential
- Oral healthcare screening and treatment should be completed before valvular surgery
- Antimicrobial prophylaxis is indicated before invasive dental procedures

### WHO classification of oral lesions in HIV infection and AIDS

#### Group I. Lesions strongly associated with HIV infection

- Candidiasis
  - Erythematous
  - Hyperplastic
  - Thrush (pseudomembranous)
- Hairy leucoplakia (Epstein-Barr virus)
- HIV-gingivitis
- Necrotising ulcerative gingivitis
- HIV-periodontitis.
- Kaposi's sarcoma
- Non-Hodgkin's lymphoma virus)

#### Group II. Lesions less commonly associated with HIV infection

- Atypical ulceration (oropharyngeal)
- Idiopathic thrombocytopenic purpura
- Salivary gland diseases
- Dry mouth
- Unilateral or bilateral swelling of major salivary glands
- Viral infections (except Epstein-Barr virus)
  - Cytomegalovirus
  - Herpes simplex virus
  - Human papillomavirus (wart-like lesions)—condyloma acuminatum, focal epithelial hyperplasia, verruca vulgaris
  - Varicella-zoster virus—herpes zoster and varicella

#### Group III. Lesions possibly associated with HIV infection.

- Miscellany of rare diseases



Angular cheilitis caused by candidiasis



Hairy leucoplakia may be seen in immunocompromised patients

syphilis, or protozoa such as leishmaniasis), malignant neoplasms (see below), or drugs (such as cytotoxic or antiretroviral agents).

Diagnosis can be difficult, and biopsy with microbial studies may be needed to exclude infections such as cytomegalovirus or deep mycoses. Specific treatments are often indicated. Chlorhexidine and topical analgesics can be helpful local treatments. Granulocyte colony stimulating factor or thalidomide can be helpful in HIV related aphthous-like ulceration.

#### *Gingival and periodontal disease*

Necrotising ulcerative gingivitis and periodontitis occur disproportionately often in immunocompromised patients for the level of oral hygiene. They can be painful and cause rapid loss of alveolar bone. Improved oral hygiene, debridement, chlorhexidine, and sometimes metronidazole are needed.

#### *Malignant neoplasms*

Immunocompromising conditions predispose patients to oral leucoplakia and carcinoma (see earlier articles), Kaposi's sarcoma, and lymphomas.

*Kaposi's sarcoma* typically occurs on the palate or maxillary gingivae and presents as red, blue, or purple macules that progress to papules, nodules, or ulcers. It is associated with human herpesvirus 8. It can respond badly to irradiation but responds transiently to chemotherapy. Oral lesions are often managed with intralesional vinblastine or systemic chemotherapy if there are extraoral lesions.

*Lymphomas* are typically non-Hodgkin's lymphomas in the maxillary gingivae or fauces. They are part of widespread disease and are usually associated with Epstein-Barr virus. They are resistant to treatment, and chemotherapy is required.

#### **Immunosuppressed patients and those with indwelling peritoneal catheters**

Dental procedures are rarely followed by infection of such patients, and any infections rarely involve oral microorganisms. Thus, patients do not require antimicrobial prophylaxis before routine dental procedures unless they have a severe immune defect, there is some other indication, or surgery is to be performed.

#### **Patients with artificial joints**

Joint prostheses are only rarely infected because of dental procedures or oral microorganisms. Thus, patients with artificial joints do not require antimicrobial prophylaxis before most dental procedures unless there is some other indication, although antimicrobial use may be prudent for the first two years after arthroplasty and in patients with inflammatory arthropathies or who are immunocompromised.

## Mentally challenged patients

Mentally challenged people often have poor oral health (missing or discoloured teeth, periodontal disease, and oral malodour), which worsens their struggle for social acceptance. Barriers to dental treatment include fear (aggravated by inability to comprehend the need for treatment), the need to be accompanied, difficult access to healthcare facilities, and often a negative attitude or lack of training of the professional.

Patients with a mild to moderate disability can often be treated in general dental practice with help and encouragement from relatives and carers. Recent guidelines issued by the General Dental Council on minimum standards for general anaesthesia will probably lead to a decline in the availability of this in general practice. Those who require additional resources

#### **In immunocompromised patients**

- Oral candidiasis is common, and antifungal drugs are indicated
- Oral hairy leucoplakia is common in patients with AIDS; Epstein-Barr virus is implicated, but treatment is rarely indicated
- Mouth ulcers are common, and a wide range of aetiologies is possible
- Kaposi's sarcoma, lymphomas, and carcinomas may be seen



Kaposi's sarcomas in typical sites in the palate

#### **In immunocompromised patients or those with prosthetic joints**

- Good oral care and hygiene are essential
- Antimicrobial prophylaxis is not usually necessary before dental procedures



Poor oral condition in a mentally challenged person

are often treated in the community dental service. For the most severely affected patients, dental care may have to be performed under general anaesthesia or intravenous sedation, often only available in the community dental service or hospital.

## Patients with mental illness

People with mental illness often avoid dental care, and their oral hygiene may be impaired, with consequential periodontal disease and caries. Their medication may produce adverse oral effects, especially xerostomia (with increased risk of caries) and dyskinesias. Dental management commonly involves ensuring good oral health care (which may involve the support of a carer), delaying treatment until there is relative psychiatric equilibrium, keeping appointments short, and oral or intravenous sedation as required.

## Socially excluded patients

Overall, oral health in UK children has been improving, and these benefits should soon be reflected among adults. However, the inequalities in oral health and in the use of services have increased between affluent and deprived groups, especially socially excluded groups (institutionalised elderly people, homeless people, refugees and asylum seekers, those engaged in substance misuse, etc).

*Institutionalised elderly people* are more likely to have fewer teeth but more gross caries and root caries than other elderly groups.

*Homeless people* often are not registered for dental care, make little use of dental services, miss dental appointments, have poor oral health, and are at increased risk of oral cancer.

*Refugees and asylum seekers* often find access to dental services difficult.

*People who engage in substance misuse* often have poor oral hygiene; tend to prefer sweet foods and sugar (especially methadone users), leading to caries; have damaged or lost teeth because of convulsions; and make little use of dental services, about which they have high anxiety.

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The ABC of oral health is edited by Crispian Scully and will be published as a book in autumn 2000.

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### In mentally challenged patients

- Good oral care and hygiene are essential
- Access to care is often limited
- Preoperative sedation may be needed



Uncleaned denture in a person with psychiatric illness

### In socially excluded people

- Oral health is often poor
- Access to oral health care is impeded
- Good oral care and hygiene are essential

### Further reading

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## One hundred years ago Hindu Teeth

Pessimistic prophets declare that future generations of humanity will be toothless. There can certainly be no doubt that civilisation has brought with it, from one cause or another, a great increase in dental troubles, and that the number of people nowadays whose teeth are either lost or diseased at an early age is very large. To a great extent this must be ascribed to neglect. Some observations on the teeth of the Hindus by Dr. Egbert, which are interesting in this connection, were recently quoted in the *British Journal of Dental Science*. In his experience natives of all castes, from the Brahmin to the pariah, have uniformly large, strong, and exceptionally well-developed teeth, with the third molars and lateral incisors developed proportionately to the other teeth. In the hundreds of dentures which he has examined among Indian natives, he has never seen a single malformed molar or lateral

incisor, and these teeth were always present. The Indian people are remarkably exempt from caries, and do not often lose their teeth from this cause. There can be little doubt that this immunity is largely due to the fact that careful and regular cleaning of the teeth is a universal habit in India. It is strictly observed, because it is laid down as an important part of religious ritual. Very exact rules for its performance are given in the great book of Brahmin ritual, called *Nitia-Karma*. To clean his teeth the Hindu uses a small twig, one end of which he softens out into the form of a painter's brush. Squatting on his heels, and always facing either east or north, he scrubs all his teeth well with this brush, after which he rinses his mouth out with fresh water. There is, indeed, much in the personal habits of the Indian races which might with advantage be imitated by Western peoples. (*BMJ* 1900;iii:311.)