Dental Aspects of Scleroderma

Oral Manifestations

Scleroderma can have a significant adverse effect upon the health of the mouth. A wide variety of different problems can arise that may result in increased liability to dental decay, gingivitis and difficulty with dentures. These oral problems, in particular xerostomia (mouth dryness) and microstomia (limited mouth opening) can reduce the quality of life of affected individuals.

Xerostomia

Xerostomia (oral dryness) can be a complication of scleroderma, specifically in those individuals with secondary Sjogren's syndrome causing dry eyes and dry mouth. The oral dryness may be worsened by the use of drugs such as antidepressants and anti-hypertensives which individually can cause xerostomia. The resultant xerostomia causes dryness, and possible soreness of the lining of the mouth. In addition there is an increased liability to dental decay, gum inflammation, possibly fungal infections (e.g. thrush) and loss of retention of the denture - particularly the upper denture. Patients with oral dryness may also have reduced or altered taste sensation, oral malodour and reduced quality of sleep.

Microstomia

This is probably the most significant oral consequence of scleroderma, giving rise to limited mouth opening and as a result difficulty with eating and perhaps speech. The limited mouth opening can also make it difficult for affected individuals to insert and remove dentures and undergo routine dental care.

Other Features

Some drugs used in the treatment of scleroderma may give rise to oral manifestations, for example gingival enlargement (e.g. calcium channel blockers). Telangiectasia (dilated blood vessels) can occur on the oral mucosa, lips and face. Some skeletal changes of the face can arise although these are unlikely to give rise to symptoms. It has recently been suggested that scleroderma may increase the risk of mouth cancer. This would be likely to present as a non-healing mouth ulcer (e.g. more than 3 weeks) or an unusual white/red patch of the lining of the mouth.

Adverse side effects

Some patients may have mobility issues that prevent them from easily attending a dentist. Likewise systemic disease and multiple hospital appointments can limit attendance at a dentist. The increased liability to common dental disease may be worsened by any reduced manual dexterity such that it is difficult to maintain good oral hygiene. Finally, the microstomia may make it difficult for patients to clean their mouths with toothbrushes and clean between the teeth with floss and related agents.

Maintaining oral health

While scleroderma can have a significant adverse effect upon the mouth, there are a number of strategies that can be undertaken by the patient and the health care professionals to lessen the adverse oral effects of scleroderma. These principally comprise lessening any xerostomia and ensuring the maintenance of a standard of oral hygiene that reduces any risk of dental decay and gum disease which are the main causes of early loss of teeth and oral malodour.

Prevention of dental decay and gingivitis

Patients with scleroderma are at increased risk of dental decay and gum disease as a consequence of the oral dryness and difficulty of mouth opening. It is important to lessen the risk of long-term consequences of these oral diseases (e.g. abscesses, extractions, tooth mobility and loss of teeth). A number of simple measures should be considered including exercises to keep the mouth and face more flexible..

Diet

It is important that all patients have a diet that avoids frequent and/or excess sticky/sweet foods. These foods increase the accumulation of dental plaque and in turn increase the risk of dental decay. Savoury foods are much less likely to cause dental decay than sugary ones.

Teeth cleaning

Teeth should be cleaned at least twice daily. It can be difficult for individuals with scleroderma to clean their teeth as a consequence of the poor mouth opening and fibrous nature of the linings of the mouth. It would therefore seem best to use a toothbrush which has a small head with soft nylon bristles as this will allow the toothbrush to clean all parts of the mouth. Handles of conventional toothbrushes can be modified to enable people with reduced manual dexterity to hold the brush easily. Advice on appropriate modifications can be obtained from a dentist, hygienist or therapist. Electric toothbrushes do allow teeth to be cleaned very effectively, particularly as they have a small head, but some of them are slightly heavy due to containing a battery within the handle. Toothpaste that contains fluoride should be used as this hardens the outer surfaces of the teeth. Additionally fluoride mouthwash (e.g. Fluoraguard®) used weekly or better still daily, helps to harden up the outer surface of the teeth. Fluoride tablets are not of notable benefit to adults.

Inter-dental cleaning

Toothbrushing only cleans the outer surfaces of the teeth. Fluorides do not give rise to any adverse side effects - provided of course they are used correctly. It is important, if possible, to clean between the teeth (inter-dentally). Inter-dental cleaning can be undertaken using floss, of which there are many varieties and dental brushes or wood sticks. Electric flossers (e.g. Oral B Hummingbird) are also available. Wood sticks and inter-dental brushes should only be used where there are spaces between the teeth, as forcing brushes or sticks may result in trauma to the gingiva.

Gingivitis is lessened by the teeth cleaning methods mentioned above. In addition regular use of antimicrobial mouthwash that contains chlorhexidine, triclosan or any other similar antimicrobial can further reduce the risk of gingivitis. Chlorhexidine can give rise to staining of the teeth and can have an unpleasant taste, although the former may be reduced by using the mouthwash immediately following tooth cleaning.

Oral malodour

Oral malodour can be lessened by keeping the mouth wet and maintaining good tooth cleaning. There is little evidence to suggest that tongue cleaning will improve oral malodour, but some individuals may find some benefit from this. Finally it may be possible to lessen oral malodour by using a specific mouthwash (e.g. Dentyl pH®).

Denture problems

Patients with microstomia can have difficulties in inserting and removing their dentures from the mouth. In addition the microstomia can make it difficult for impressions to be taken during the construction of dentures. These difficulties can be overcome by the construction of dentures that comprise two parts, thus allowing the appliance to easily pass into the mouth. Likewise impressions can be undertaken in sections.

Xerostomia can cause the upper denture to become easily dislodged. This can be lessened by placing synthetic saliva on the fitting surface of the denture. Osseo-integrated implants are a means of ensuring the retention of dentures. These are titanium screws that are placed within the jaw bones, the bone eventually uniting with the titanium of the implant. It is then possible to construct either dentures that clip onto the implant, or bridges that firmly attached to implants. There are no major contra-indications to the placement of implants in patients with scleroderma.

Management

It is important that patients avoid agents (e.g. alcohol and tobacco) that will worsen any existing oral dryness. Patients often attempt to substitute saliva by sipping water or non-sugary drinks. It is best however, to avoid sugary agents as these will increase the risk of dental decay, and non-sugary drinks (e.g. fizzy drinks) give rise to mild chemical erosion of the outer surfaces of teeth.

A number of synthetic salivary substitutes are available as sprays and/or mouthwashes. These agents are mildly viscous, may contain fluoride and interestingly can be slightly acidic and thus might increase the risk of dental erosion. There is no one particular salivary substitute that seems to be better than another - each patient has his or her own preference. Several gels have been suggested to lessen oral dryness, in particular BioXtra® and Oral Balance®. It has been suggested that Oral Balance® may reduce the burning sensation associated with oral dryness and also aid eating and swallowing.

Sucking sweets can cause some increase in salivary flow but this increases the risk of dental decay. Diabetic sweets which do not contain sucrose can be helpful but the sorbitol that is present in these products can cause gastrointestinal upset in some individuals. Chewing gum can be beneficial. Pilocarpine prescribed by doctors and dentists can specifically increase salivary function again but this agent has a number of adverse side effects, in particular gastrointestinal upset or increased sweating. As a consequence of the microstomia and oral dryness, some individuals with scleroderma find that their upper lip becomes adherent to the upper anterior teeth. It is possible to lessen this by applying a lubricating jelly (e.g. KY jelly®) to the inside of the lips and upper teeth so that the lips glide over the teeth. A wide variety of alternative agents have been suggested to be of benefit but there is little evidence that they will help.

Conclusion

Scleroderma has the potential to have a significant adverse effect upon the mouth, however, affected individuals are generally predisposed to the common diseases of the mouth - dental decay and gingivitis. It is important that all persons with scleroderma maintain an adequate standard of oral hygiene to lessen the risk of complications of such disease - particularly early tooth loss. Individuals with scleroderma are strongly advised to obtain appropriate specialist advice via their doctors or medical specialists. Finally, in view of the possible increased risk of oral cancer, all persons with scleroderma should avoid smoking tobacco and excessive alcohol consumption.

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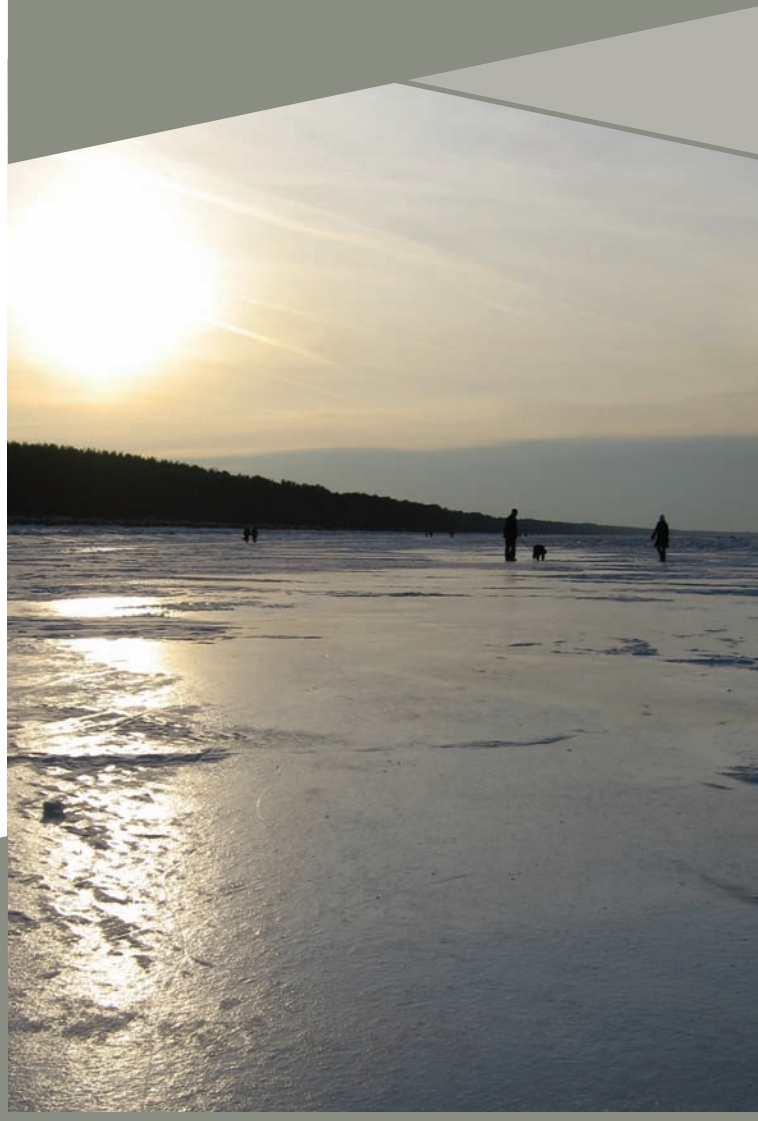
An Informative Leaflet



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