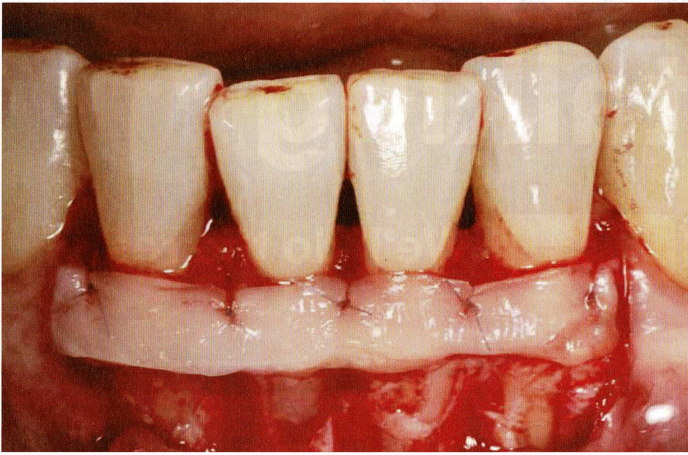


## Peri-implant health

A look at the factors which can cause dental implants to fail.



**D**ental implants are a hugely successful solution for restoring aesthetics and function to edentulous patients. Although the procedure is increasingly successful, failures do still occur, and a number of factors can be to blame, including the health and age of the patient, habits like smoking or poor dental hygiene, the quality of bone and soft tissue, or systemic disease, often in combination. The leading cause of implant failure, however, is avoidable infection.

As soon as an implant surface is exposed to the oral cavity, it becomes colonised by oral microorganisms, forming a microbial biofilm. Conventional treatment for managing peri-implant diseases has in the past tended to disregard

the contributory characteristics of dental implant design and materials, following evidence available for the treatment of periodontitis. However, the design of the implants, combined with various surface modifications of titanium, may foster increased plaque accumulation, resulting in faster bacterial biofilm formation than on natural teeth.

Microorganisms most commonly associated with implant failure are spirochetes and mobile forms of Gram-negative anaerobes. Diagnosis is based on colour and appearance changes in the gingiva, bleeding and probing depth of peri-implant pockets, suppuration, radiographic evidence of bone-resorption, as well as the degree and extent of gradual loss of bone height around the tooth. Peri-implantitis, the plaque-

associated, site-specific infection, is characterised by inflammation in the peri-implant mucosa and consequent gradual bone loss. The condition is a progressive and largely irreversible disease of the hard and soft tissues surrounding the implant and is accompanied with bone resorption, decreased osseointegration, increased pocket formation and the presence of purulence.

### Non-surgical management of peri-implant disease

In some cases, with the correct management, it is possible to regain osseointegration non-surgically. For non-surgical treatment to be effective, early detection and accurate diagnosis makes all the difference. The prosthetic itself

should be checked for any ill-fitting components or design flaws that impede oral hygiene. Effective plaque control by the patient is paramount for implant success. If inflammation persists regardless of low plaque scores, further investigations addressing the patient's general health may be warranted, and the prosthetic might need to be modified or replaced.

Once any contributing factors have been eliminated, like poor oral hygiene, smoking, or mechanical problems with the implant, the first priority is to control the infection.

Mechanical debridement can effectively reduce bleeding on probing (BOP) by 20-50 per cent. In cases of mild peri-implant disease, debridement by air-polishing devices, YAG lasers, or curettes can reduce pockets by around 1mm.

The addition of antiseptic therapy to mechanical debridement has not been proven to provide additional benefits where the pocket depth is less than 4mm but may help with deeper peri-implant lesions. The addition of systemic antibiotics can also improve outcomes.

### Surgical techniques for peri-implantitis

In conventional surgical management of peri-implantitis, the damaged implant is thoroughly debrided and decontaminated with the use of a surgical flap. Surgery often involves using autogenous bone grafts, with a control access flap procedure.

Resective surgery has been shown to be effective in reducing symptoms of peri-implantitis. This entails using osteotomy and osteoplasty techniques combined with bacterial decontamination. Outcomes are improved by combining resective therapy with implantoplasty – a process of smoothing and polishing the supracrestal implant surface.

Studies have indicated that combining resective therapy with bone grafting procedures can provide a significant improvement to peri-implant health for about six months to two years after surgery. However, over time, bone-loss can still occur.

### Learn directly with the innovators

World-renowned periodontologist, Professor G Zucchelli, has published

widely on soft tissue management around teeth and implants. He leads an advanced course on the subject at the Academy of Soft and Hard Tissue Augmentation (ASHA) this autumn, alongside highly respected clinician in the field, Selvaraj Balaji. This one-of-a-kind, two-part course – entitled 'Soft tissue management around teeth & implants' – combines theory and practice to equip participants with the newest research, unique techniques and exciting innovations to manage soft tissue around teeth and implants.

Infection can threaten the survival of implants at any point after their placement. When preventative measures and non-surgical therapies have not been effective, surgical intervention is the only option. By maintaining proficiency in the most advanced techniques and theory in the field, clinicians can offer their edentulous patients more support, and more options, leading to happier and healthier outcomes.

References available on request.

