

Missing Teeth and Dental Implants

by

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Ectodermal Dysplasia and a big smile, they just don't seem to go together do they, but they can! Back in 1976 at the Eastman Dental Hospital in London we began to see increasing numbers of patients with congenitally missing teeth (Hypodontia), whose treatment was being planned piecemeal. That year colleagues in Prosthetic Dentistry, Orthodontics and Children's Dentistry established a dedicated team to help these young patients. The Eastman Hypodontia Clinic was born. The intervening years have seen considerable changes and expansion in activity. The team now includes a specialist in Conservative Dentistry, and with numbers of treated cases now approaching 1,000 it has become the world's largest centre for this type of work. Some of its first patients are now bringing their own children for consultations, as hypodontia can be inherited.

Treatment combines the skills of several consultants, and has changed considerably over the years, with the increasing use of adhesive restorations and dental implants representing two of the most dramatic developments.

Modern dental implants, largely developed in Sweden, are precision devices made from very pure titanium which can become anchored to the bones, or 'osseointegrated'. It was this discovery by Prof. P-I Branemark which enabled dentists to use dental implants to anchor artificial teeth to the jaws. The implants, or fixtures, are at first buried in the jaw while they integrate, and 3-6 months later exposed and used to anchor a bridge or denture. The operation may be carried out under local anaesthesia, or general anaesthesia on a day-stay or overnight basis, although the latter is not common. The choice depends upon clinical criteria, including the patient's general health, the complexity of the procedure and the operator and patient's preference.

Implant treatment is very complex and needs to be carried out by specially trained clinicians. Of particular importance is the preliminary detailed planning, since not all patients are best helped with the technique. This includes checks on general health, and detailed analysis of the jaws and any natural teeth which are present. For implant treatment to succeed it is important that there is sufficient space to accommodate the implants, and that the bone is adequately dense to provide good anchorage. Occasionally it may be necessary to consider augmenting the jaw with transplanted bone from elsewhere, such as the hip, although this is not always feasible.

An implant is of no use if it cannot be restored successfully, and thus the planning includes a careful check on the type of prostheses which may be used. These can include fixed bridges, which only a dentist can remove, and partial or complete dentures clipped very securely onto the implants. Fixed bridges tend to be used for replacing smaller numbers of teeth, and removable appliances where large deficiencies are to be restored,

the profile needs increased support, or it is necessary to increase the height of the remaining teeth. Sometimes the teeth are also built-up in conjunction with implant therapy. This may be done by gluing a tooth coloured filling material on to them, or sometimes, particularly at the back of the mouth bonding a gold 'onlay' onto the top of the crown. These have good wear resistance. The possibilities are almost endless, no wonder treatment planning can take some time!

The initial cost of this type of therapy is relatively high, although the benefits are considerable. A figure of 600 (British Pounds) per fixture would be typical, and that's only the implant components, with technical and professional fees and materials costs in addition! Fortunately NHS funding in specialist centres is often available for suitable cases, although the longer term position in relation to this is currently less clear.

Treatment is normally deferred until the jaws have stopped growing, to avoid growth related problems, typically this means in the very late teens or early 20s. Most patients of this age are also better able to make the lifetime commitment which this type of treatment requires. Home care must be of a high standard, and regular monitoring by a suitably trained dentist is essential.

Implants are not always successful, and failure rates of 5-20% have been reported, depending on the clinical situation. Outcomes tend to be poorer in the upper jaw, while bone shape, size and composition, loading patterns and home care can all have profound effects. But then biology offers few guarantees.

Patient satisfaction is almost always very high, but expectations must be realistic; implants are not a miracle cure and need patient commitment, you can't fit and forget, and they are certainly not suitable for all. If they are not for you, don't despair, modern dentistry can offer many other solutions to your problems.

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