implantology

The third dentition

Osteo-Ti define what they mean by this.

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is an Implantologist.
The Dentist

●Fig1: Range of tapered implants.

Modern dental implantology is no longer limited to the functional rehabilitation of the edentulous but has evolved into the aesthetic driven replacement of the natural tooth or the third dentition.

Placement of an implant immediately after extraction replaces not only the lost tooth but also helps preserve crestal bone and interdental soft tissue. New placement techniques together with the advent of new tapered implant designs mean it is possible to offer patients predictable immediate tooth replacement of almost any tooth with success levels comparable to traditional implant protocols (fig1).

In some cases it is even possible to early load an immediate implant 'immediate substitution'. In view of the proven long-term high success and benefits afforded by implant therapy it is perhaps time to reappraise our past attitudes towards treatment planning.

Implantation must be seen as a means to obviate initial bone atrophy.

The status of a tooth could once be considered as hopeless if it were not restorable or had inadequate support or unmanageable periodontal disease. But consideration should be given to the possibility that keeping a questionable tooth could in the long term make implant replacement and restoration very much more difficult or preclude it all together. Delaying extraction and implant placement may necessitate more complex specialist restorative and surgical procedures taking implantology outside the domain of the general dental practitioner.

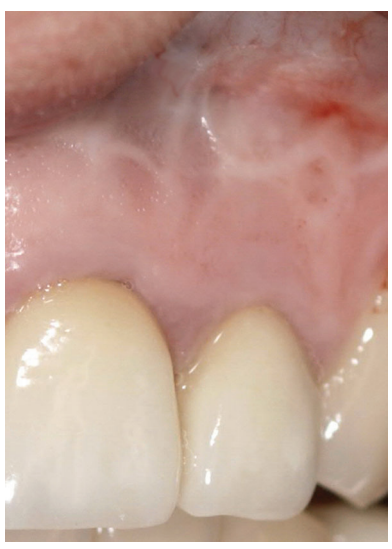
Following tooth loss the pattern and degree of alveolar-ridge resorption depends on the region from which the tooth was lost and the amount of time that has elapsed since extraction.

Atrophy is most severe after the first few months of tooth loss progressing rapidly over the next two years. Continued atrophy of the alveolar processes leads to vertical bone reduction and a transverse malposition of the alveolar ridges producing a corresponding loss of lower facial height adversely affecting the facial profile.

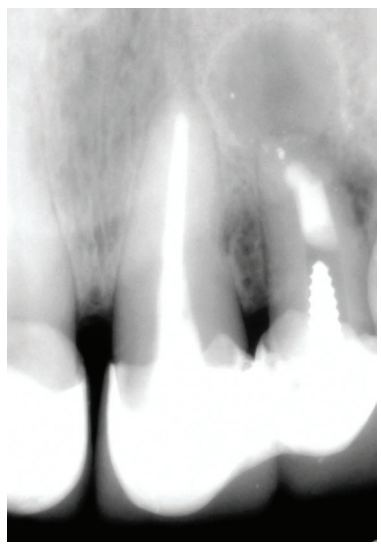
Early or immediate implantation can preserve the alveoli and the surrounding jawbone.

Implantation should not be regarded as a fall back position reserved for when 'conventional' restorative methods fail but must be seen as a means to obviate initial bone atrophy.

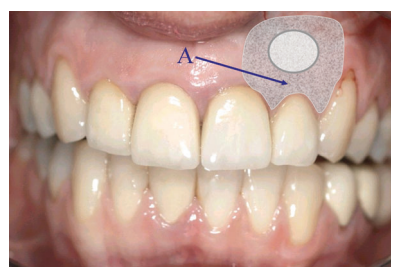
The main advantage of the method is the gain of time and thus bone volume. A reduction in bone resorption helps prevent the formation of the buccal concavity so often seen after extractions and offers the possibility for➲



●Fig 2: Severe visible soft tissue scarring following several apicectomies.



●Fig 3: Radiograph showing apical pathology.



●Fig 4: (A) Buccal plate perforation.

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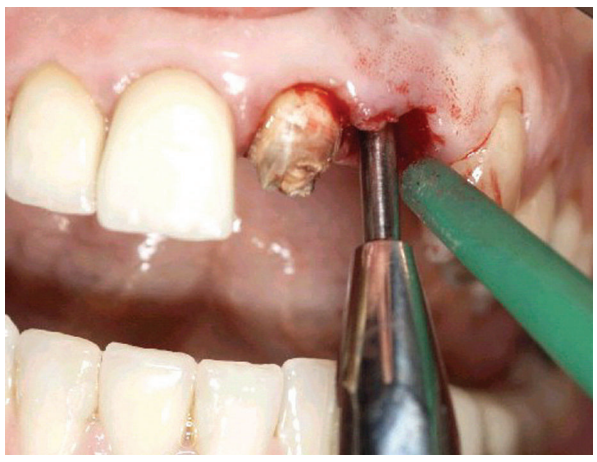


●Fig 5: 'Site former' hand instrument being used to extend the socket and form the osteotomy site.

➲placing the implant in an optimal position.

Preserving socket marginal bone maintains soft tissue architecture ensuring long-term peri-implant stability and excellent soft tissue aesthetics.

Advantages

The advantages of immediate implant placement:

- soft tissue preservation and improved aesthetics.
- preservation of bone height and width.
- extraction socket guides implant placement.
- simplified surgical and restorative procedure.
- reduced treatment time.
- cost effective.

The high success rate for osseointegrated implants draws into question the efficacy of saving compromised teeth by all means possible.

- greater patient acceptance.

Contra-indications are:

- absence of primary fixation- implant stability at insertion is an absolute prerequisite for integration.
- history of difficult extractions - root ankylosis predisposes to bone fracture resulting in deformation of the root socket.

Although all kinds of ingenious techniques exist to restore the dentition the high success rate for osseointegrated implants draws into question the efficacy of saving compromised teeth by all means possible. In the long-term early extraction and immediate implant placement may prove more predictable and cost effective. This approach is demonstrated by the following cases which are based on the principle that the preservation of bone and soft tissues are of greater importance than the sanctity of a tooth.

Case report 1

The patient, a smart lady in her mid-thirties, was very keen to preserve the upper left lateral incisor which had previously received extensive restorative treatment. Soft tissue aesthetics were of paramount importance to her and to make things worse she had a high lip which covered her forehead on smiling. Fig 2 shows the amount of highly visible soft tissue scarring which has occurred following several courageous attempts at apicectomy.

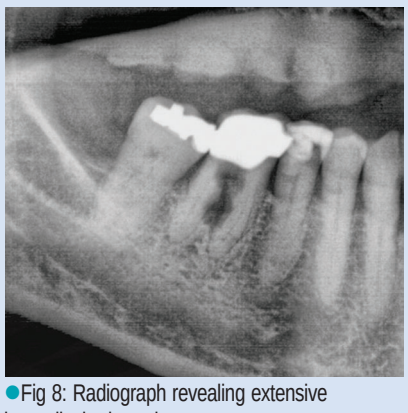
Unfortunately the end result of these failed procedures is revealed by a radiograph which shows a cystic area and perforated overlying labial plate (figs 3, 4). Previous experience of treating such defects has shown that raising a large buccal flap exposing the perforation will most certainly result in resorption of the fine crestal bone bridging the defect.

Loss of this bone is disastrous for soft tissue aesthetics as the gingival margin loses its skeletal support resulting in excessive gingival recession.

With this in mind it was decided that an immediate substitution of the lateral incisor should be made. This technique entails the atraumatic removal of the tooth and its immediate replacement with a dental implant which is immediately restored with a provisional crown (fig 5). The rationale for this approach is that the implant preserves the➲

●Fig 6: Finished crown after only six weeks.

●Fig 7: Radiograph showing resolution of apical area.



●Fig 8: Radiograph revealing extensive interadicular bone loss.

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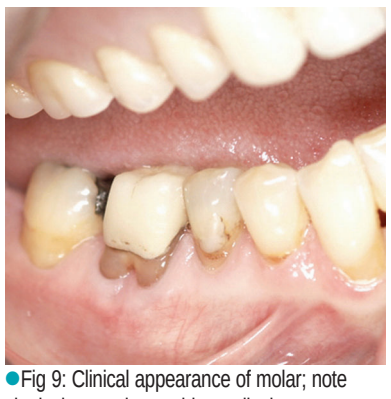

●Fig 9: Clinical appearance of molar; note gingival recession and interadicular exposure.

●Fig 10: Implant abutments in position on integrated implants. Note healthy appearance of gingival tissues.

➲bone while the provisional crown maintains and supports the delicate soft tissue (figs 6 ,7)

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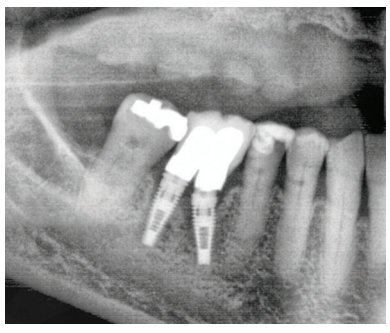
Case report 2

A middle-aged lady had undergone extensive restorative and surgical treatment in order to preserve a periodontally infected lower right molar with furcation involvement. The net result of this time consuming, expensive and painful treatment is shown radiographically clearly demonstrating the amount of interadicular bone destruction which has occurred (fig 8).

The problem now is not just one of replacing the diseased tooth but also of repairing the damage to the surrounding bone (fig 9)). Fortunately it can be far easier to regenerate bone around an implant than the natural root. The infected molar was extracted and two immediate implants inserted with simultaneous grafting material (Resorb) to regenerate the lost interdental bone (figs 10 and 11).

Summary

The decision to electively remove a tooth and replace it with a dental implant is far from easy; but if delaying the decision results in the loss of bone compromising future implant placement, then serious consideration should be given to its early extraction.■



●Fig 11: Radiograph showing regeneration of bone.