



Abstract

In 1991, a practically edentulous patient received two maxillary implants (positions 13 and 24) to stabilize a removable partial denture with the 3 remaining natural teeth. Both implants were Straumann 4,1mm and 12mm in length, hollow perforated cylindrical screws. Implants supported ball attachments. In April 1994, the ball attachments were replaced by a bar anchorage retained on the teeth and implants.

On the March 3, 1995, the patient came into the dental office with implant 24 fractured and subsequent loss of the bar structure. The May 10, 1995, an exploratory map demonstrated that the embedded portion of the implant was osseointegrated. Two additional implants were placed in positions 22 and 25. (22:SS10+/25:SS8+).

Before these implants could be loaded the implant in position 13 fractured (September 6, 1995). Similarly the treatment consisted in placing two implants adjacent to the fractured implant (12:SS12 and 14:SS10). All the implants were subsequently equipped with magnetic retention systems. From 1996 to 2006 magnets were damaged 5 times and the prostheses relined and repaired. Due to the relatively high cost and frequency of maintenance, bone grafting and 6 more implants were placed followed by a fixed bridge. The fractured implant portions were left in place and have since been covered by bone.

Background and aim

Implant fracture is a relatively rare occurrence; however it is:

- 1) potentially difficult to resolve,
2) time consuming for patients and clinicians alike.

This report documents the outcome of poor diagnosis and underestimation of risk factors. It concluded about consequences on implant and prosthesis prognosis.

Conclusions

On retrospect, this patient presented many risk factors, such as bruxism and occlusal overload, that are now recognized as potentially leading to implant fracture. Considerable time and cost were wasted and would have been avoided, if all the risk factors had been identified and taken into account. Nonetheless, this case shows that fractured implants do not need to be explanted if they do not jeopardize an ensuing treatment. A timely more complex and global treatment may have avoided all these complication and would have led to increased satisfaction of the patient and less risk to the implants and the prosthesis.

References

1.Balshi TJ. (1996) An Analysis and Management of Fractured Implants: A Clinical Report. Int J Oral Maxillofac Implants 11:660-665.
2.Conrad HJ, Schulte JK, Vallee MC. (2008) Fractures Related to Occlusal Overload With Single Posterior Implants: A Clinical Report. J Prosthet Dent 99:251-256

Case report

Patient: 54 year old. Remaining teeth: 11, 21 and 27 .

1991

Two implants in site # 13 and # 24 were placed. Both were Ø 4.1mm x 12mm hollow screw ITI Bonefit Straumann implants; they supported a ball-anchored removable partial denture (RPD).

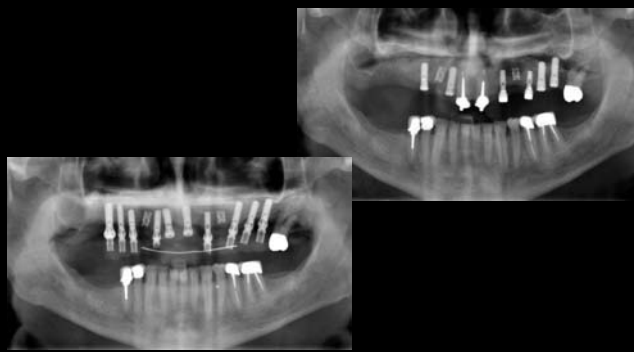
1995

Both implants fractured at the first row of hollows and the osseointegrated embedded portions were left in situ. Subsequently, 2 implants were added mesially and distally to each fractured implant. To retain the RPD, all 4 implants were equipped with magnets (Titanmagnetics, Steco System Technik GmbH, Hamburg, Germany).



1996 - 2006

All magnets have been replaced 5 times because of wear and fracture ; the RPD was also relined. Due to the high frequency of complications and because of the subsequent failure of the remaining teeth, additional implants were placed after a bone grafting procedure.



2008 - 2009

Relying on 10 implants, a fixed complete prosthesis was cemented.

