

Failure Analysis of Fractured Dental Implants

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Abstract : The success and predictability of titanium implants for long durations are well established and there has been a tremendous increase in the popularity of implants among patients as well as clinicians over the last four decades. However, sometimes complications arise, which lead to the loss of the implant as well as the prosthesis. Fracture of dental implants is rare; however, at times, implants or abutment screws fracture and lead to many problems for the clinician and the patient. Possible causes of implant fracture include improper design, overload, fatigue and corrosion. Six retrieved fractured dental implants, with varying diameters and designs, were collected from time to time to examine by scanning electron microscope (SEM) to characterize fracture behavior and assess the mechanism of fracture. In this investigation, it was observed that fracture of the five dental implants occurred due to fatigue crack initiation and propagation from the thread roots.

Keywords : titanium, dental, implant, fracture, failure

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