

# Dental Implants: the Good, the Bad and the Downright Dangerous

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## Editorial

This article is written by a board certified Oral and Maxillofacial Surgeon with over 12 years of experience in the specialty. The author has been involved in the placement of thousands of dental implants of all types and has particular expertise in managing “salvage” or multiply operated patients who have had failed implants placed by other providers. The author also has expertise in the surgical management of temporomandibular joint disorders and complex infections of the head and neck region. The author has appointments at several well-known academic institutions.

The use of dental implants to replace missing teeth and in fact replace a patient’s entire dentition has become more commonplace over the past several years. One only has to turn on the television to notice that there are multiple facilities offering “teeth-in-a-day” or cheap implants, to replace ones missing dentition. These commercials, although alluring, can be very confusing for prospective patients and may lead to inadequate research being done not only into the procedure, but also into the clinician performing the procedure. Dental implants are safely placed by multiple specialties within the realm of dentistry and good outcomes are not specifically dependent on one’s specialty training but more contingent upon actual clinical experience.

In regards to litigation, there are some relatively clear cut cases that point to negligence leading to potential patient harm. For example, a 35 year old female patient comes in for evaluation for implant placement at site #19, and the doctor uses a periapical film to evaluate the area and plan for the length of implant to be placed. On the day of surgery the dentist plans on placing a 5.0 mm (width) x11.5 mm (height) implant. During preparation of the implant site, the dentist drills his osteotomy, encounters significant bleeding, and the patient has sudden pain radiating into the lip and chin area. The dentist gives the patient more local anesthetic and proceeds to place the implant. The patient is discharged home with pain medications and antibiotics. On post-op day #1 the patient calls the office and states that she cannot feel her lip and chin area and is still having significant “nerve pain”. The dentist suspects that the Inferior alveolar nerve may have been injured during the procedure and promptly refers the patient to an Oral and Maxillofacial Surgeon for evaluation. The surgeon obtains a cone beam CT scan which shows the implant has violated the canal and is likely causing compressive injury to the nerve. The surgeon removes the implant and places the patient on high dose steroids. At six months the patient continues to have loss of sensation and pain and is referred to a microneurosurgical specialist for evaluation. The patient is deemed to have a severe nerve injury (Sunderland Grade V) and is declared a candidate for reconstructive nerve surgery. She undergoes autogenous Sural nerve harvest with Inferior Alveolar nerve reconstruction and at 6 months post-op has improvement in her pain and some return of sensation. The patient files a lawsuit against the dentist who placed the implant with the main justification being that had the dentist obtained the appropriate pre-op imaging the issue of nerve injury could have been significantly decreased if not completely avoided.

Another example of inadequate training/knowledge which leads to a poor patient outcome is in the relatively new phenomenon known as MRONJ or Medication Induced OsteoNecrosis of the Jaws. This condition arises in patients whose medications to decrease bone breakdown either due to osteoporosis or metastatic cancer with spread to the bone have been shown to affect healing of the jaw bones after invasive dental procedures. For example, there is the case of a 67 year old male with a history of metastatic prostate cancer that had over 15 doses of IV Zoledronic Acid (Zometa) for treatment of bone metastasis to the ilium and spine. The patient presented to his dentist for evaluation of a decayed and non-restorable tooth #30(lower right first molar). The patient had no pain and no signs or symptoms of infection. The dentist not realizing the significant difference in potency between orally administered bisphosphonates used for osteoporosis, e.g. Alendronate (Fosamax) and the IV forms of the drug used for metastatic disease, proceeded with extraction and bone grating with cadaver bone, in preparation for implant placement. The patient returned for his two week follow up appointment at which time the dentist noted that the site looked as though it had not undergone any healing. He prescribed the patient another two weeks of antibiotics and scheduled a two week follow up. At the patient’s return visit the site had not changed and

now the patient stated he was noticing a bad taste and some pain was present. A repeat X-ray showed signs and symptoms consistent with osteomyelitis. At this time the patient was referred to the local University's department of Oral and Maxillofacial surgery. Given the patient's medical and medicinal history, a diagnosis of MRONJ was made and after failing several months of conservative therapy with antibiotics and minor chairside debridement the patient developed a pathologic fracture of the right mandible with osteolytic changes of the entire right side of his jaw. He subsequently underwent resection of the affected portion of the mandible with microvascular free fibula flap reconstruction, which ultimately alleviated the progression of his MRONJ. The patient succumbed to his metastatic disease 3 years later.

The issue of MRONJ could have likely been avoided by bypassing any invasive dental treatment (extraction of tooth #30 and bone grafting) and merely treating the tooth to avoid future infection.

In conclusion, although dental implants are a very safe and reliable option for the replacement of missing teeth, patient selection and thorough knowledge of the patient's medical history is a key for an ideal outcome. With the reliability of new imaging techniques e.g., Cone Beam CT scans, the risk to local vital structures has also been decreased and clinicians should use these advanced modalities, when indicated, to decrease the chance of harm to patients.