

Study shows dental implants may cause preventable nerve damage

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(Medical Xpress) -- Dental implants may cause preventable nerve damage, warn dental experts, as study highlights surgery risks

Experts from King's College London have warned that cases of permanent [nerve](#) damage caused by dental implants could rise further if steps are not taken to address risks and prevent injury.

Researchers from the King's College London Dental Institute carried out a case review of 30 dental implant patients who were referred to a specialist nerve injury clinic at King's College Hospital, part of King's Health Partners Academic Health Sciences Centre. The findings, published today in the *British Dental Journal*, reveal that patient consent and information, pre-operative planning and appropriate post-operative referral were inadequate in this patient group. The team has used these

findings to make recommendations for clinicians to improve practice.

Incidence of injury of the inferior alveolar nerve (IAN) has increased as a result of a rise in dental implant surgery over recent years. There are approximately 10,000 mandibular (lower jaw) dental implant procedures carried out each year in the UK, and an estimated 100 reported chronic nerve injuries resulting from these procedures per year.

This type of injury can cause severe pain and altered sensation in the face, affecting everyday activities such as speaking, eating, kissing, shaving and brushing teeth. These injuries can have a significant effect on a patient's quality of life, and can lead to depression and other mental health problems.

In 1997, approximately 10 per cent of all nerve injuries caused by dental work were associated with implants and this increased to 30 per cent in 2007. Several hundred complaints about dental implants were made to the General Dental Council last year.

Researchers reviewed 30 patients whose nerve injuries were caused by dental implants. A detailed history was taken, alongside a clinical examination and assessment of pain levels. They found that:

- Only 11 of the 30 patients were aware of signing consent forms for the implant surgery and of those eight felt they were not explicitly warned about nerve injury. Sixty-four percent of patients did not recall providing written consent.
- No radiographic evidence pre or post-operatively was provided by the referring practitioner in 15 percent of cases.
- Seventy percent of the 30 patients were referred to the specialist nerve injury clinic more than six months after surgery, despite evidence to

show removal of the implant within 30 hours significantly reduces the risk of permanent damage. As a result, only three patients were referred and able to be treated immediately post-surgery.

Professor Tara Renton, lead author from the King's College London Dental Institute, said: 'Pain and numbness from nerve damage in the facial area can have a significant impact on people's lives.

'As the number of people choosing to have dental implants is on the increase, so is the incidence of nerve injury. It is vital that patients understand the risks of this type of surgery, and clinicians must improve their systems and procedures.

'In our study of a collection of implant patients with injuries we discovered that pre-operative consent, planning and follow-up after surgery was inadequate. Clinicians must be vigilant about potential nerve damage when carrying out these surgical procedures.'

Problems caused by surgery

The study showed this group of 30 patients experienced problems associated with [dental](#) implant surgery. The review found that:

- Seventy percent of the 30 implant patients experienced problems during the procedure, such as severe bleeding and some form of pain during implant placement.
- After surgery, over half of the 30 patients suffered from constant pain and/or discomfort. Forty percent complained of numbness.
- Fifty four percent said kissing was reduced in pleasure.
- Speech was affected in 46 percent.

- Thirty percent of the implant injury patients had problems with eating, drinking and brushing teeth due to pain. Psychological problems were reported by 30 percent. This included four patients out of the 30 with diagnosed depression and two with significant depression and suicidal thoughts.

Recommendations

Following this case review, the researchers made the following recommendations for professionals fitting [dental implants](#):

- Clinicians must ensure all implant [patients](#) give adequate consent and are made aware of the risk of nerve damage.
- Sufficient pre-operative radiographic planning must be carried out.
- Use of shorter implants is suggested to mitigate risk of damaging the nerve.
- If known damage to the IAN has occurred, a referral to a specialist nerve injury clinic must take place immediately.
- Postoperative follow-up must be improved. Clinicians should recommend a patient undertakes a 'homecheck' for 12 hours after surgery. This allows them to report ongoing pain, which may dictate early removal of the implant is needed. Severe or extreme pain post surgically may be an indicator of [nerve damage](#) and must not be overlooked. A phone call to the patient four to six hours post surgery will enable the surgeon to ascertain if a referral is needed.
- Prompt removal of implants must be carried out within 30 hours if required, to minimise chances of developing chronic irreversible post surgical nerve pain.

- Clinicians are reminded of the requirements to notify the Care Quality Commission of injuries to the nervous system.

Provided by King's College London

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