JOI study: Surgical techniques compared for reconstructing the jaw for dental implants

For a successful dental implant, the first step for some patients is reconstructive surgery of the jaw. A bone graft to augment the upper jaw can now be achieved by several methods. To assess these methods, their risk of sinus perforation and the best evaluation technology, researchers put these procedures to the test on 20 human cadaver specimens.

The Journal of Oral Implantology presented a pilot study comparing transcrestal techniques for maxillary sinus floor elevation. This is a surgical procedure that increases bone volume and prepares the upper jaw for dental implants. The study sought to determine if any of the techniques carried a greater risk of surgical complications.

Perforation of the sinus membrane is the most common surgical complication associated with maxillary sinus floor elevation. Perforations have been linked to acute or chronic sinus infection, edema, bleeding, loss of bone graft material and failure of the implant.

The conventional method for this procedure is the lateral approach, which gains surgical access through the zygomatic bone bordering the maxillary sinus cavity. While this is an invasive technique, there is a low incidence of complications.

A less invasive procedure uses a crestal approach through the osteotomy prepared for dental implant placement. However, this is a sensitive technique that restricts the surgeon’s direct visual examination.

The current study used 20 human cadaver specimens with 40 intact sinuses, as test subjects for three transcrestal surgical techniques. One experimental group used the DASK kit, which features specially designed surgical drills to apply mechanical and hydraulic pressure. Another experimental group received a surgical protocol that permitted entry into the sinus through crestal bone that had been eliminated during site preparation. A control group was treated with the osteotome/crestal sinus membrane elevation, or OCSME, technique.

Postoperative assessment of the specimens determined whether membrane perforation had occurred. Direct visual endoscopy, cone-beam computerized tomography, and periapical radiographs were used.

While the study found endoscopy to be the preferred form of detecting membrane perforations, no significant differences were found in the rate of perforations among the surgical techniques used.


About Journal of Oral Implantology
The Journal of Oral Implantology is the official publication of the American Academy of Implant Dentistry and of the American Academy of Implant Prosthodontics. It is dedicated to providing valuable information to general dentists, oral surgeons, prosthodontists, periodontists, scientists, clinicians, laboratory owners and technicians, manufacturers and educators. The Journal of Oral Implantology distinguishes itself as the first and oldest journal in the world devoted exclusively to implant dentistry. For more information, visit www.aaid-implant.org/index.html.
ITI Congress Canada: Analyzing the risks and benefits of emerging technologies

This year’s International Team for Implantology (ITI) Congress Canada took place in September in Toronto. Close to 250 professionals in implant dentistry attended the congress that undertook to analyze the risks and benefits of emerging technologies in implant dentistry and scrutinize them against the backdrop of current best practices. The two-day congress included top-class lectures given by specialists from Canada and abroad.

The first day was devoted entirely to Urs Belser and Daniel Buser (Switzerland), who presented an evidence-based rationale for early implant placement and contour augmentation, handling of esthetic failures, fixed implant restorations in the esthetic zone, treatment planning principles for the esthetic zone, the use of provisionalons on new esthetics and more.

The second day brought together Canadian clinicians from across the country and beyond to discuss topics ranging from technology transfer to each and every step along the digital workflow. For the first time, the ITInet Global Forum came into play for the question period after each session.

“We were extremely gratified by the response of the attendees, all of whom were very satisfied knowing that we had provided them with a superb encapsulation of emerging technologies, put them under the microscope and provided the tools to evaluate them,” said Robert Carmichael, education delegate of the ITI section Canada.

The ITI Congress Canada was also the setting for the presentation of the Andre Schroeder Research Prize 2012 to Dr. Cornelius von Wilmowsky, a PhD dentist, oral surgeon and researcher at Friedrich Alexander University of Erlangen-Nuremberg, Germany. The ITI’s 13,000th member, Dr. Adam Kaplan, was also welcomed during the congress.

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created and prepared by Dr. John Russo and includes a diversified and international faculty. Some of the topics covered included cone-beam CT diagnosis and treatment planning, the use of growth factors including stem cells; digital impressions from the perspectives of the clinician and the laboratory; and diagnosis, prevention and treatment of soft-tissue esthetic complications.

In addition, more than 100 implant dentistry-related exhibitors brought to the ICOI exhibit hall the newest and most advanced products and technology available on the market.
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