## CA4500

### Horizontal Bone Augmentation Using The Sausage Technique: A Case Report

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**Introduction:** This case report illustrates the application of the "sausage technique" in a patient with severe horizontal bone deficiency, demonstrating successful bone augmentation and optimal primary stability.

**Case description:** The "sausage technique" is a bone grafting method that involves tightly packing graft material within a membrane to create maintained osteogenic space. In this case healthy 45-year-old female with a horizontal width of 3.6 mm in posterior mandible was operated. A mucoperiosteal flap was elevated, then autogenous bone was collected using a bone scraper. After perforating the cortical plate, the collagen membrane (25*25mm, Bio-Gide, Geistlich) was fixed at the base with titanium pins. Then the mixture of xenogeneic (0.5g, Bio-Oss, Geistlich) and autogenous bone was placed, and the top of the membrane was immobilized. The ridge demonstrated a horizontal width of more than 8 mm after 8 months of healing, and two implants sized 4.1×10 mm (ITI, Straumann) were placed at the site of #45 and #46. After three months, the crowns were fabricated and cemented.

**Discussion:** For patients with severe horizontal bone deficiency, the "sausage technique" would be a reliable option. In this case, the ridge presented a horizontal bone gain of ≥4.4 mm after the application of "sausage technique" and implants demonstrated excellent osseointegration, primary stability, and soft tissues integrated.

**Conclusion/clinical significance:** "Sausage technique" employs the tension of biological membranes to establish a stable space for bone formation, facilitating effective bone augmentation.

*Key Words:* sausage technique, bone augmentation, implant.

https://doi.org/10.1016/j.identj.2025.105707

## CA3927

### Salvaging A Hopeless Tooth: Intentional Replantation To Rescues Lateral Incisor

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**Introduction:** Intentional replantation (IR) was used to successfully treat a maxillary lateral incisor (#22) that had failed periodontal therapy and conventional endodontic retreatment because to deep palatogingival groove and chronic apical periodontitis.

**Case description:** A 32-year-old man who had previously received root canal therapy (RCT) presented with recurrent swelling of 22. A clinical examination showed a distobuccal periodontal pocket (PD)=6 mm, a sinus tract, I° mobility, and a lingual groove that extended 4 mm subgingivally. Radiographs indicated bone loss, periapical radiolucency, and insufficient root canal filling. IR was carried out following the failure of nonsurgical retreatment and periodontal therapy (PD increased to 8 mm). The tooth showed no movement, sinus tract closure, PD decrease (2–3 mm), and periapical healing during the 2.5-year follow-up.

**Discussion:** Deep spiral pockets and severe distal/palatal bone loss indicated complex root anatomy that went beyond radiography observations. The palatal flap was difficult to access, and apical surgery carried the risk of removing too much bone. By eliminating these drawbacks and successfully treating both endodontic and periodontal pathology, IR offered a workable substitute.

**Conclusion/clinical significance:** If atraumatic extraction and a short extraoral duration (less than 15 minutes) are possible, IR can be a reliable alternative for teeth with complex anatomy when nonsurgical retreatment or apical surgery is not feasible. The promise of IR as a primary treatment, rather than a last option, is demonstrated by this example.

*Key Words:* Intentional replantation, Malformed lingual groove, Endodontics.

https://doi.org/10.1016/j.identj.2025.105708

## CA4577

### Immediate Implantation Following Palatally Impacted Canine Extraction

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**Introduction:** The management of impacted maxillary canines poses a significant challenge in diagnosis and treatment, often leading to lengthy and complex procedures. Historically, extraction followed by orthodontic alignment or prosthetic rehabilitation has been the go-to solution. However, the advent of dental implantology has opened up new avenues for immediate implantation in severely impacted or non-restorable canine sites.

**Case description:** A 31-year-old patient presented with a mobile deciduous canine and horizontally impacted upper right permanent canine, seeking a solution to maintain a fixed tooth without any period of edentulism. A multidisciplinary approach was adopted, involving the extraction of the lacteal canine, surgical removal of the impacted canine, immediate implant placement of a tapered dental implant followed by non-functional loading with a temporary crown to augment primary stability.

**Discussion:** The study aimed to investigate the feasibility of achieving primary stability in a reduced amount of bone through under-preparation of the osteotomy site. In

a case where bone availability was limited, all visible palatal implant threads were grafted to enhance retention and fill the bone defect. The definitive prosthetic restoration was placed after 3 months. Digital periapical radiographs 9 months later, demonstrated peri-implant bone loss of 0.62 mm.

**Conclusion/clinical significance:** Immediate implantation in the impacted maxillary canine post-extraction site presents a promising approach to streamline treatment and optimize both functional and aesthetic outcomes. The technique may offer a viable alternative to traditional treatment methods, reducing the need for multiple interventions and improving patient satisfaction.

*Key Words:* dental implant, impacted canine, extraction, immediate implantation.

https://doi.org/10.1016/j.identj.2025.105709

## CA4572

### Allogeneic Bone Plugs In Anterior Dental Implanting: A Case Report

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**Introduction:** The maxillary anterior region is the aesthetic area of human teeth, and often faces the problem of insufficient bone volume after loss, making its restoration treatment highly challenging.

**Case description:** This case report describes the implant restoration treatment process of a patient with significant bone loss in the anterior region due to trauma and the extraction of impacted supernumerary teeth in the area of the maxillary anterior region. During the surgery, an allogeneic bone plug (BIO-DBM, OSTEOLINK BIOMATERIAL Co., Ltd.HUBEI) was used for Guided Bone Regeneration (GBR), and implants were placed simultaneously. The osteogenic effect was observed after more than half a year post-surgery, and histological evaluation was conducted. Ultimately, a satisfactory bone augmentation effect was achieved, and the provisional restorations were shaped to achieve good red-white aesthetic results.

**Discussion:** Allogeneic bone, as a bone graft material, possesses good osteoconductive and osteoinductive capacity, while bone plugs have excellent plasticity and support capabilities, providing a good osteogenic space, thus allogeneic bone plugs offer another option for patients with significant bone defects.

**Conclusion/clinical significance:** This demonstrates that the use of allogeneic bone plugs in patients with significant bone loss in the anterior region shows good bone augmentation effects, but the long-term outcomes remain to be observed.

*Key Words:* Allogeneic bone plugs, Anterior teeth, Bone defect, Dental implants.

https://doi.org/10.1016/j.identj.2025.105710

## CA4529

### Split-Thickness Design In Ridge Augmentation During Implant Therapy

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**Introduction:** Ridge augmentation is frequently necessary before or during implant placement to address bone deficiencies. Successful augmentation depends on primary closure. Conventional flap passivation techniques, such as periosteal releasing incisions, partially compromise vascular supply and may increase postoperative morbidity.

**Case description:** In a posterior mandibular case with buccal ridge collapse, split-thickness flap design was performed by sharp dissection of the mucoperiosteal flap into outer mucosal and inner periosteal layers to achieve sufficient flap advancement. Following implant placement and horizontal ridge augmentation, the periosteal and mucosal layer were sutured independently to ensure tension-free wound closure. Postoperative outcomes were favorable, with minimal discomfort, negligible swelling, and no instances of wound dehiscence or membrane exposure. The stable ridge augmentation and satisfactory function were maintain at the 12-month follow-up.

**Discussion:** The split-thickness design can be widely applied in both horizontal and vertical ridge augmentation: Minimal flap advancement - Split-thickness flap creates a periosteal pocket, often obviating the need for barrier membranes and optimizing cost-effectiveness. Extensive flap advancement - Split-thickness flap combined with vertical releasing incisions. Shallow vestibular depth, high frenum attachment, or inadequate keratinized tissue – The Partial-Split K-incision Flap technique. Maxillary posterior region - The Coronally Positioned Palatal Sliding Flap Passivation. Thin gingival biotype - precise periosteal separation for double flap.

**Conclusion/clinical significance:** The split-thickness flap passivation technique in simultaneous ridge augmentation ensures adequate coronal flap advancement, protect vascular supply, promoting primary wound closure. This approach establishes a stable graft space while significantly minimizing postoperative complications, including swelling and pain.

*Key Words:* dental implants, ridge augmentation, mucoperiosteal flap, split-thickness design, primary closure.

https://doi.org/10.1016/j.identj.2025.105711

## CA4419

### Double-Window Technique For Lateral Approach Maxillary Sinus Floor Elevation

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**Introduction:** Maxillary posterior tooth loss can lead to resorption of the alveolar ridge and continuous