

Osseodensified Crestal Sinus Window Augmentation: A Replacement Procedure To The Lateral Window Technique

Presenter: Nilesh Salgar DDS

Private Practice: Montreal, Canada



Introduction:

If an implant does not “fit” a potential site due to a deficiency of hard or soft tissue, then the clinician and patient must commit to a bone, tissue, or sinus graft to augment that site.

An innovative transcresal window sinus lift technique utilizing osseodensification, overcomes traditional limitations and drawbacks of crestal sinus augmentation and offers a safe and effective alternative, achieving vertical bone gain comparable to that of the conventional lateral window method, and may serve as a viable substitute in appropriate cases.

Methods:

A healthy patient presented with a partially edentulous posterior maxilla with large pneumatized maxillary sinus.

Preoperative radiographs and 3D CBCT imaging determined bone volume and ruled out sinus pathology prior to surgery.

A full-thickness flap was elevated with a periosteal releasing incision.

Two 5.0-mm osteotomy sites, position # 2.6 and # 2.7, were made through the sinus floor. A 3.0-mm diameter osseodensification bur in CCW mode (1100 RPM with copious irrigation) used to breach the sinus floor. The sinus membrane was visible and intact. The osteotomy diameters were increased with osseodensification burs 4.0 mm and 5.0 mm to achieve sinus membrane lift of 3 mm in 1-mm increments. Again, the sinus membrane was visible and intact. The osteotomy sites were filled with hydrated mineralized cancellous allograft. An osseodensification Bur diameter 5.0 mm was used counterclockwise at low speed (150 RPM) and with no irrigation to gently propel the allograft into the sinus under the sinus membrane.

Digital radiographs were taken during the procedure to confirm the intact Schneiderian membrane and full containment of the allograft volume.

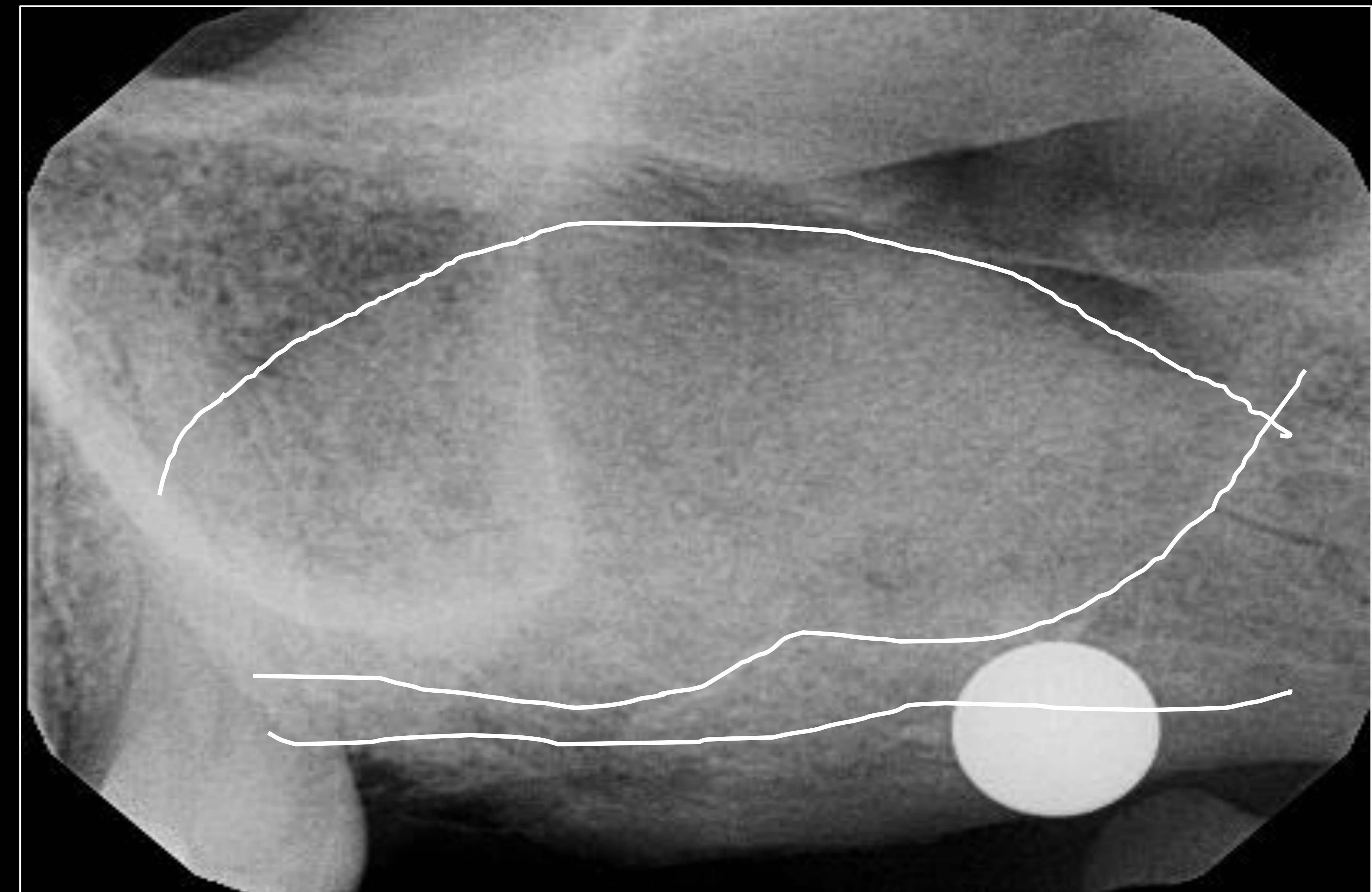
Results:

Healing was rapid and uneventful, with minimal discomfort, bleeding, and no swelling. No Schneiderian sinus membrane perforation or surgical complications occurred.

The initial (pre-op) bone height was 0.5 mm. The final (post-op) vertical bone gain was 17 mm.

Discussion:

The lateral window technique is traditionally used for sinus augmentation when residual bone height is under 5 mm. However, the osseodensified crestal sinus window technique may be a safe and effective alternative, depending on careful planning and surgical expertise. Further studies are needed to compare its vertical bone gain with the conventional lateral window method.



References:

1. **Fugazotto PA.** Augmentation of the posterior maxilla: a proposed hierarchy of treatment selection. *J Periodontol.* 2003; 74: 1682– 1691.
2. **Tatum H Jr.** Maxillary and sinus implant reconstructions. *Dent Clin North Am.* 1986; 30: 207– 229.
3. **Summers RB.** A new concept in maxillary implant surgery: the osteotome technique. *Compend.* 1994; 15:152, 154–156, 158
4. **Huwais S, Meyer EG,** A novel osseous densification approach in implant osteotomy preparation to increase biomechanical primary stability, bone mineral density, and bone-to-implant contact. *Int. J Oral Maxillofac Implants.* 2017; 32: 27– 36.
5. **Salgar N.** Osseodensified Crestal Sinus Window Augmentation: An Alternative Procedure to the Lateral Window Technique. *Journal of Oral Implantology.* 2021; 47(1):45-55

Osseodensified Crestal Sinus Window Augmentation: A Replacement Procedure To The Lateral Window Technique

Presenter: Nilesch Salgar DDS

Private Practice: Montreal, Canada



Osseodensified Crestal Sinus Window Augmentation: A Replacement Procedure To The Lateral Window Technique

Presenter: Nilesh Salgar DDS

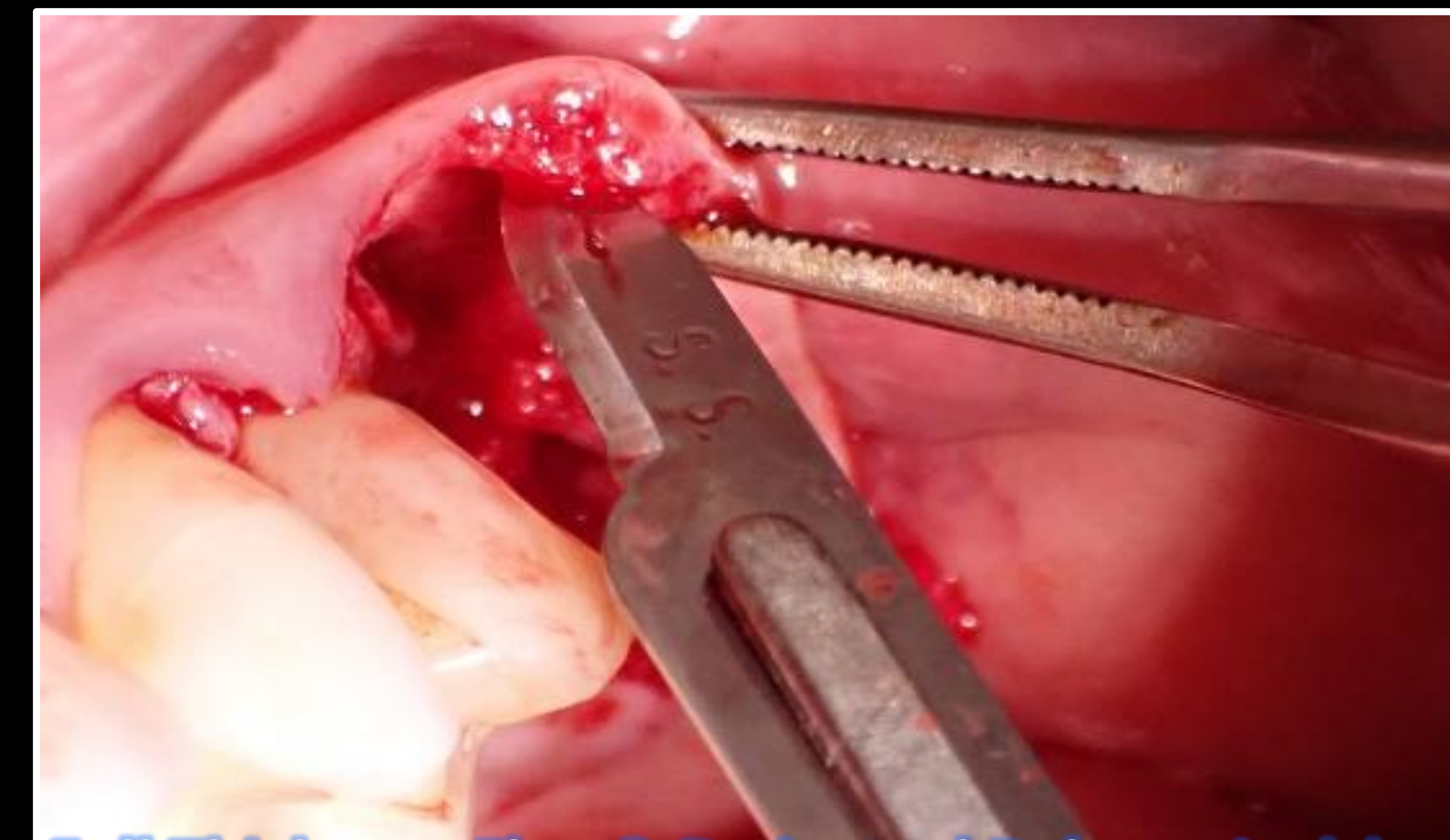
Private Practice: Montreal, Canada



Pre-Operative X-Ray
2.6 RBH = 0.5 mm / # 2.7 RBH = 2.5 mm



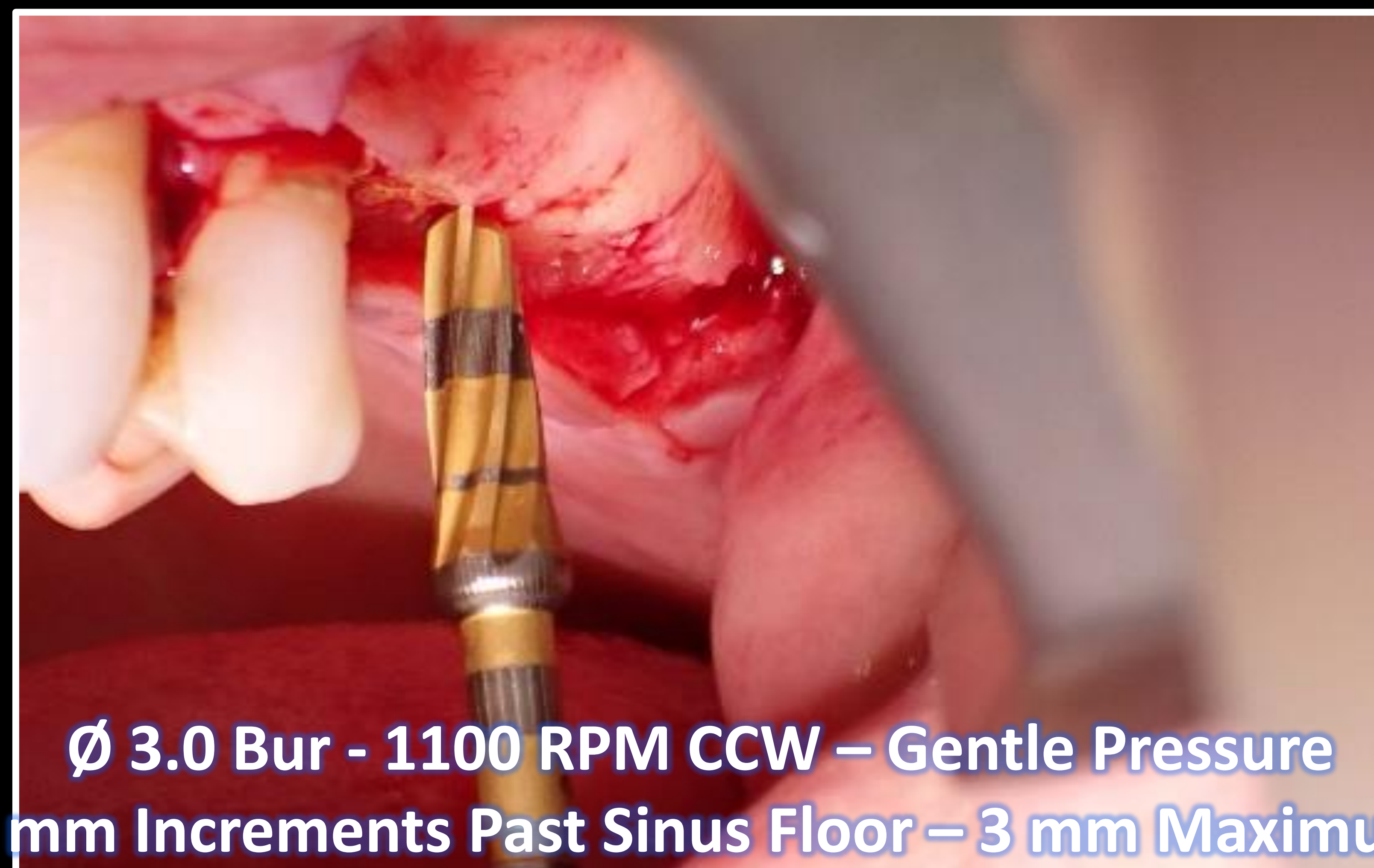
Posterior Maxilla With Hyperpneumatized Sinus



Full Thickness Flap & Periosteal Release Incision



Purchase Point For Crestal Osteotomy Sites



Ø 3.0 Bur - 1100 RPM CCW – Gentle Pressure
1 mm Increments Past Sinus Floor – 3 mm Maximum

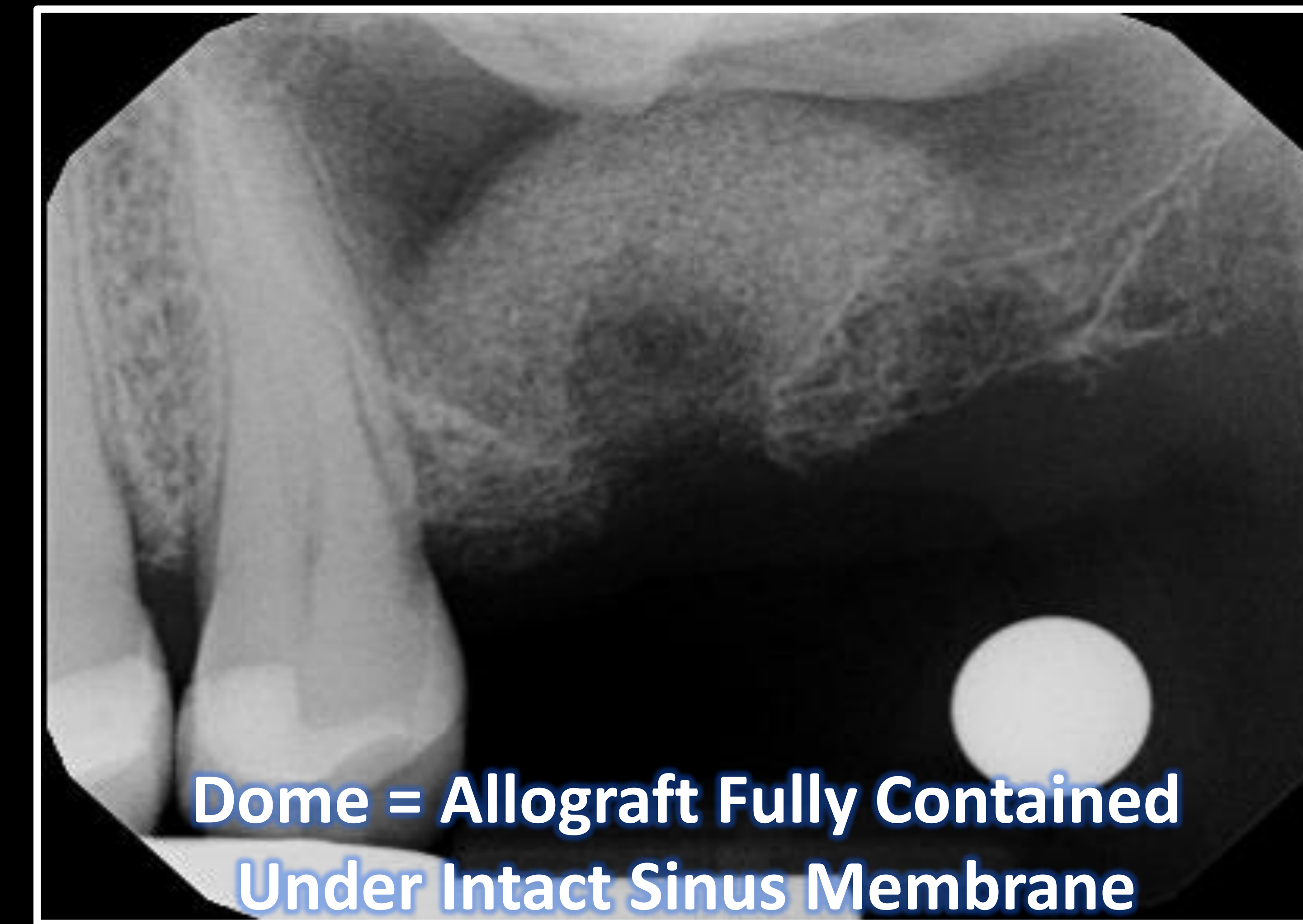
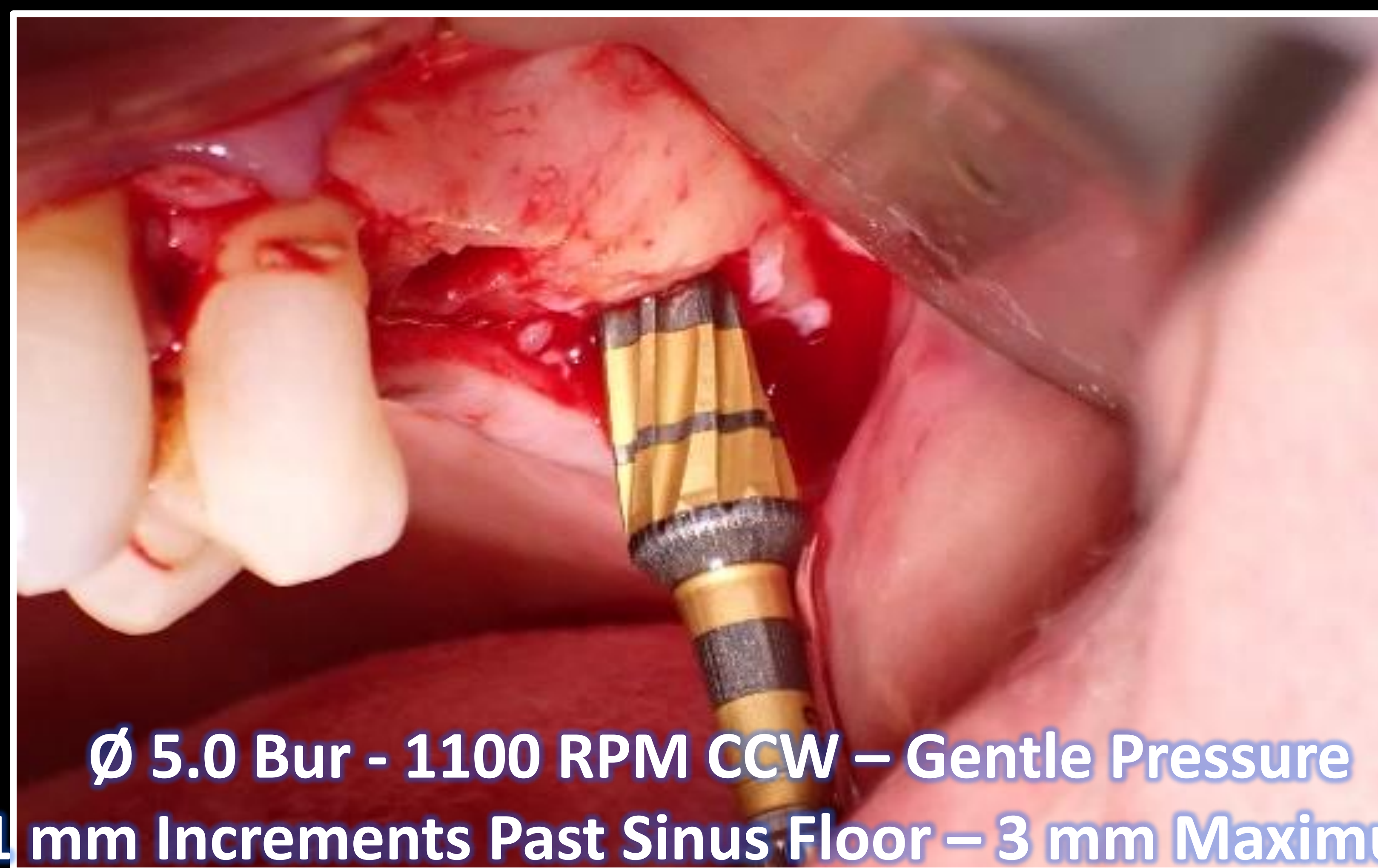


Ø 3.0 mm Osseodensified Crestal Sinus Windows

Osseodensified Crestal Sinus Window Augmentation: A Replacement Procedure To The Lateral Window Technique

Presenter: Nilesh Salgar DDS

Private Practice: Montreal, Canada



Osseodensified Crestal Sinus Window Augmentation: A Replacement Procedure To The Lateral Window Technique

Presenter: Nilesh Salgar DDS

Private Practice: Montreal, Canada

