

Redesigning the Face Through Bones

The Art & Science of
Orthognathic Surgery

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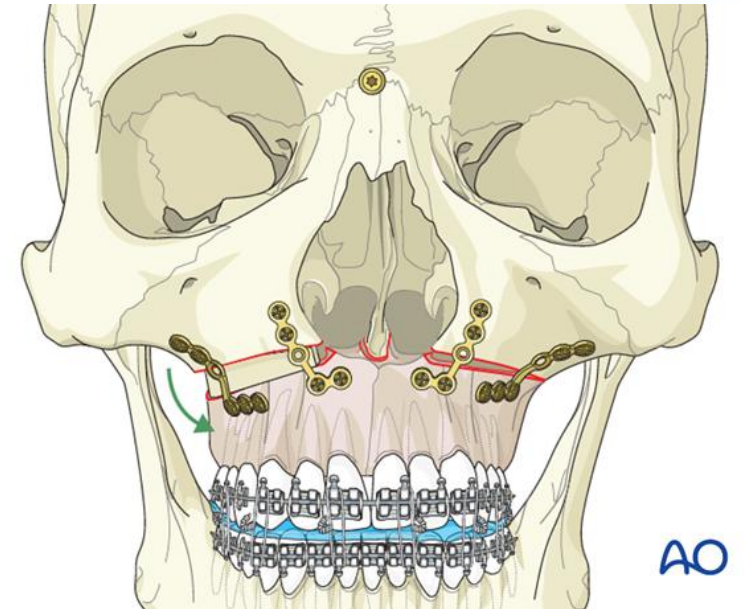
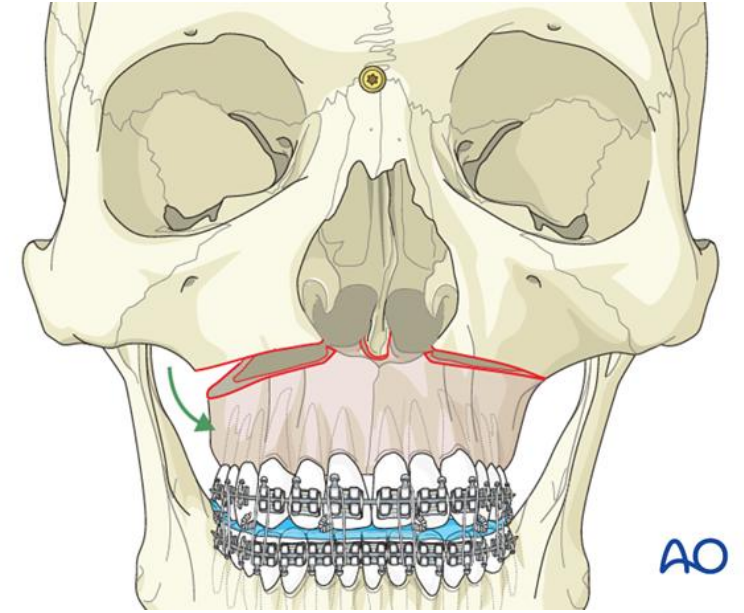
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What is Orthognathic Surgery?

Defining the Procedure

Orthognathic surgery is a transformative intervention designed to correct skeletal discrepancies in the jaw bones. By repositioning the maxilla, mandible, or both, it addresses functional and aesthetic issues.



The "Why": Problems We Correct

⚙️ Functional Issues

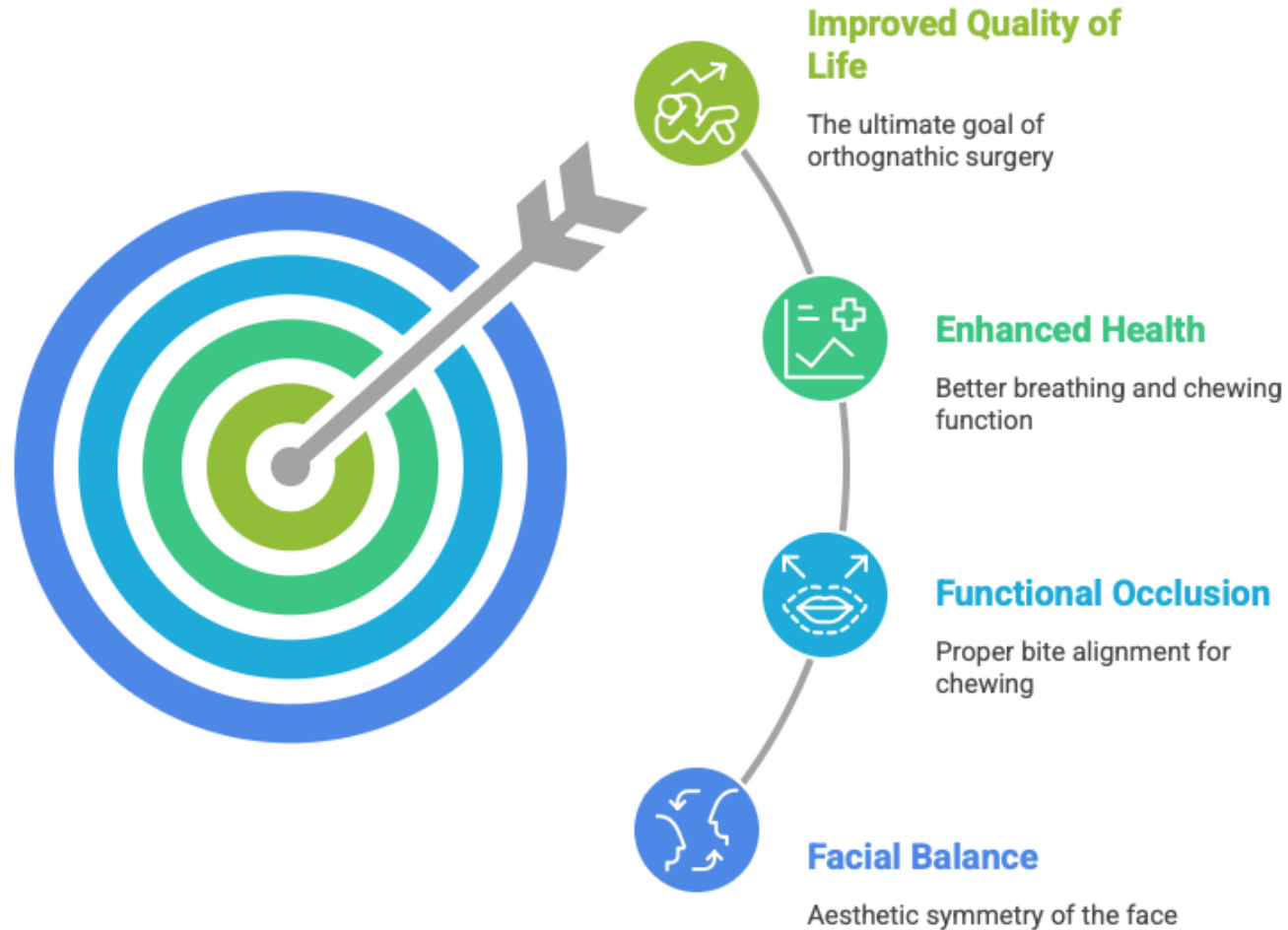
- ✓ **Airway Obstruction:** Sleep Apnea (OSA) caused by skeletal deficiency.
- ✓ **Malocclusion:** Severe overbite, underbite, or open bite that orthodontics alone cannot fix.
- ✓ **TMD:** Chronic jaw pain, headaches, and joint noise.
- ✓ **Daily Struggles:** Difficulty in chewing, swallowing, and speech.

😊 Aesthetic & Psychosocial

- ✓ **Facial Asymmetry:** Visible imbalance in jaw alignment.
- ✓ **Disproportion:** Retruded chin, protruding jaw, or gummy smile.
- ✓ **Psychosocial Impact:** Significant effect on self-esteem and social interaction.

"Patients often struggle for years with function or self-image before seeking help."

Primary Objectives



Partnership: Surgery + Orthodontics



Phase 1: Pre-Surgical Ortho

Duration: 12-18 Months



The orthodontist "decompensates" the teeth, aligning them over their native bone. This may temporarily worsen the appearance of the bite.



The Surgery

Intra-Operative



We surgically reposition the jaws into their mathematically correct skeletal position to establish the new foundation.



Phase 2: Post-Surgical Ortho

Duration: 6-9 Months



Fine-tuning the final occlusion (bite settling) to ensure long-term stability and function.

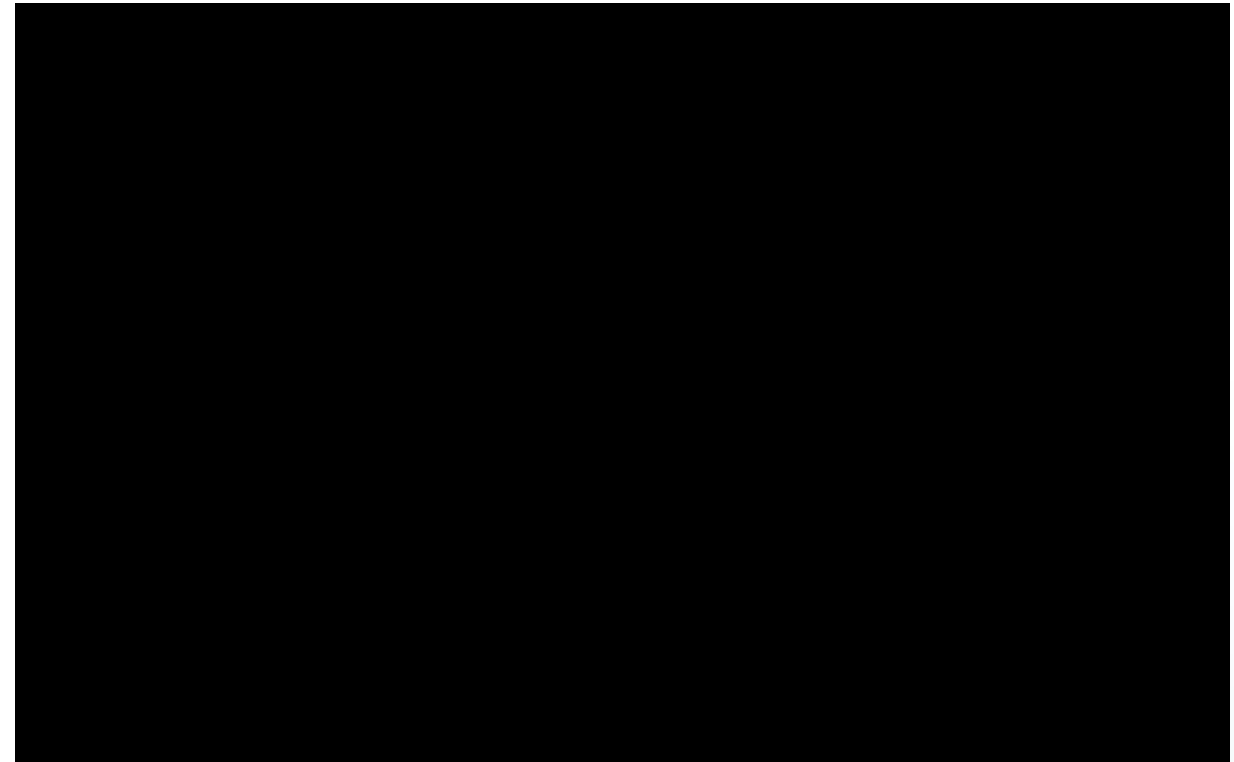
Technological Revolution: 3D VSP

From Estimation to Precision

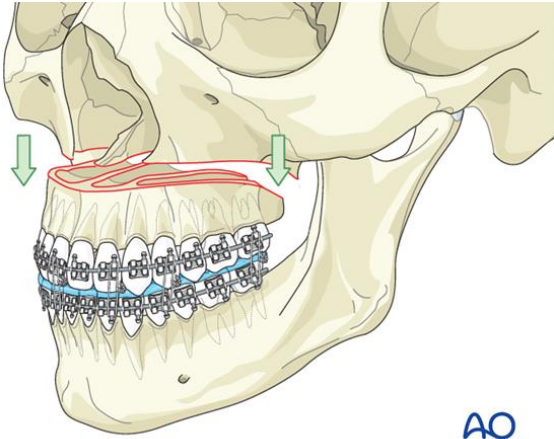
Gone are the days of 2D X-rays and model surgery. The new standard of care utilizes **3D Virtual Surgical Planning (VSP)**.

- ✓ **CBCT Scan:** Creates a high-fidelity 3D model of the skull.
- ✓ **Virtual Simulation:** We plan movements down to the millimeter on the computer.
- ✓ **3D Printed Guides:** Surgical splints are printed to transfer the virtual plan perfectly to the operating room.

"This is our GPS for surgery. We no longer guess; we navigate."

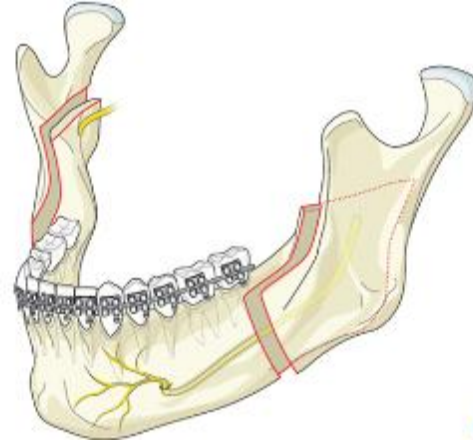


The Surgical Toolbox



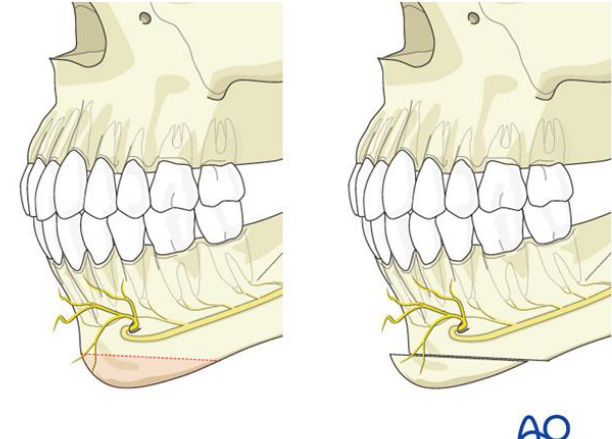
Le Fort Osteotomies

Repositions the upper jaw (maxilla). Corrects gummy smiles, vertical excess, and anteroposterior discrepancies.



BSSO

Bilateral Sagittal Split Osteotomy. The standard for the lower jaw (mandible) to advance or setback the jaw.



Genioplasty

Chin surgery. Repositions the chin bone independently to fine-tune the profile and facial balance.

A Case in Motion

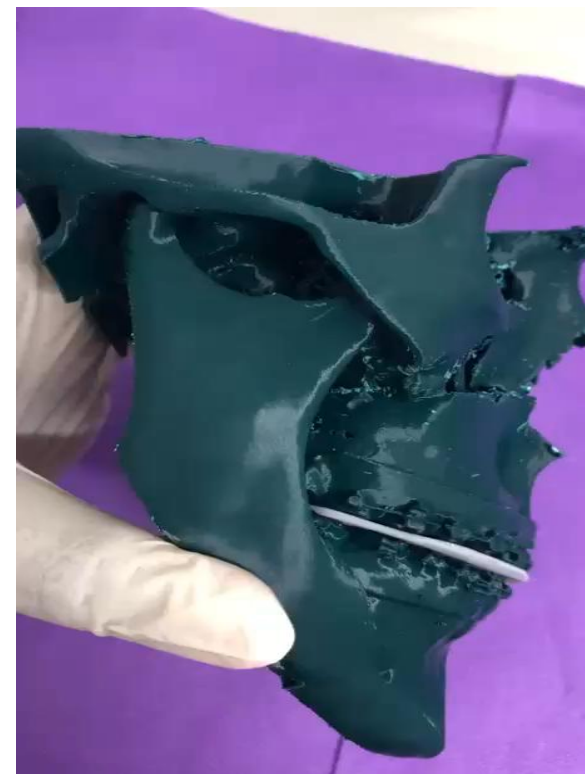
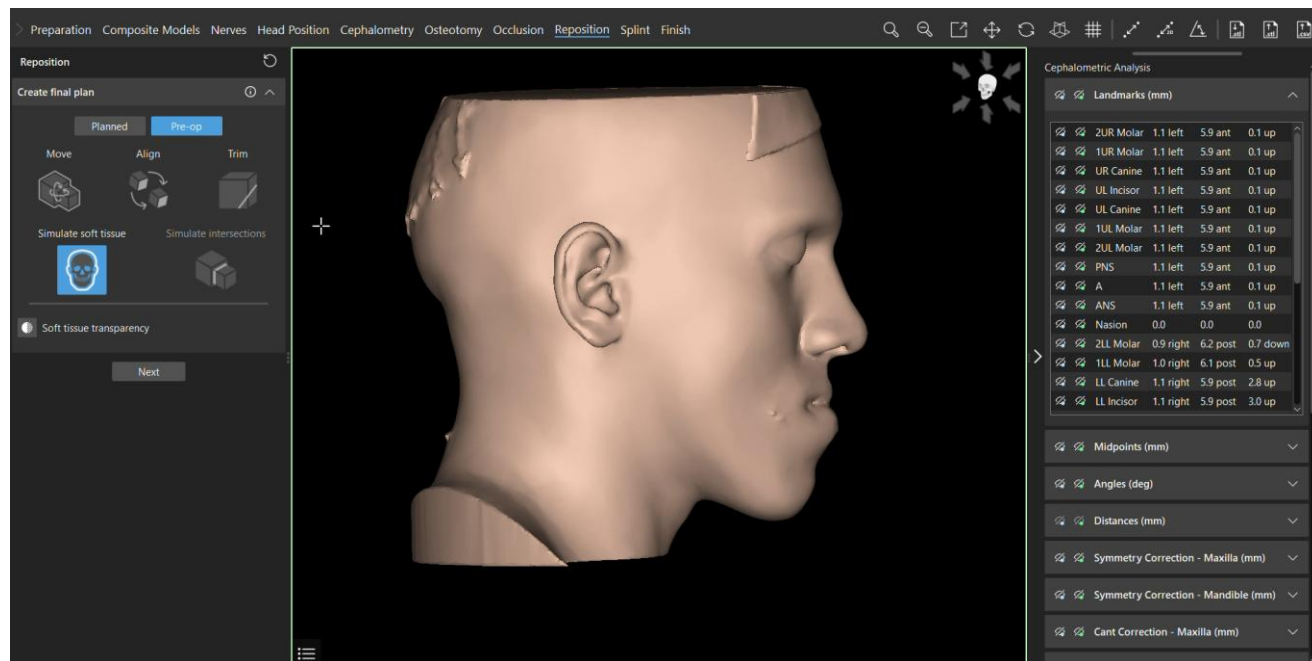
From Virtual Plan to Reality

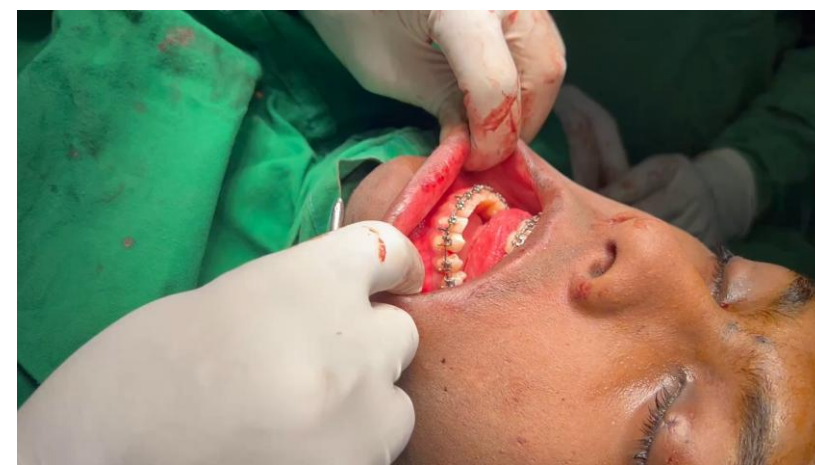
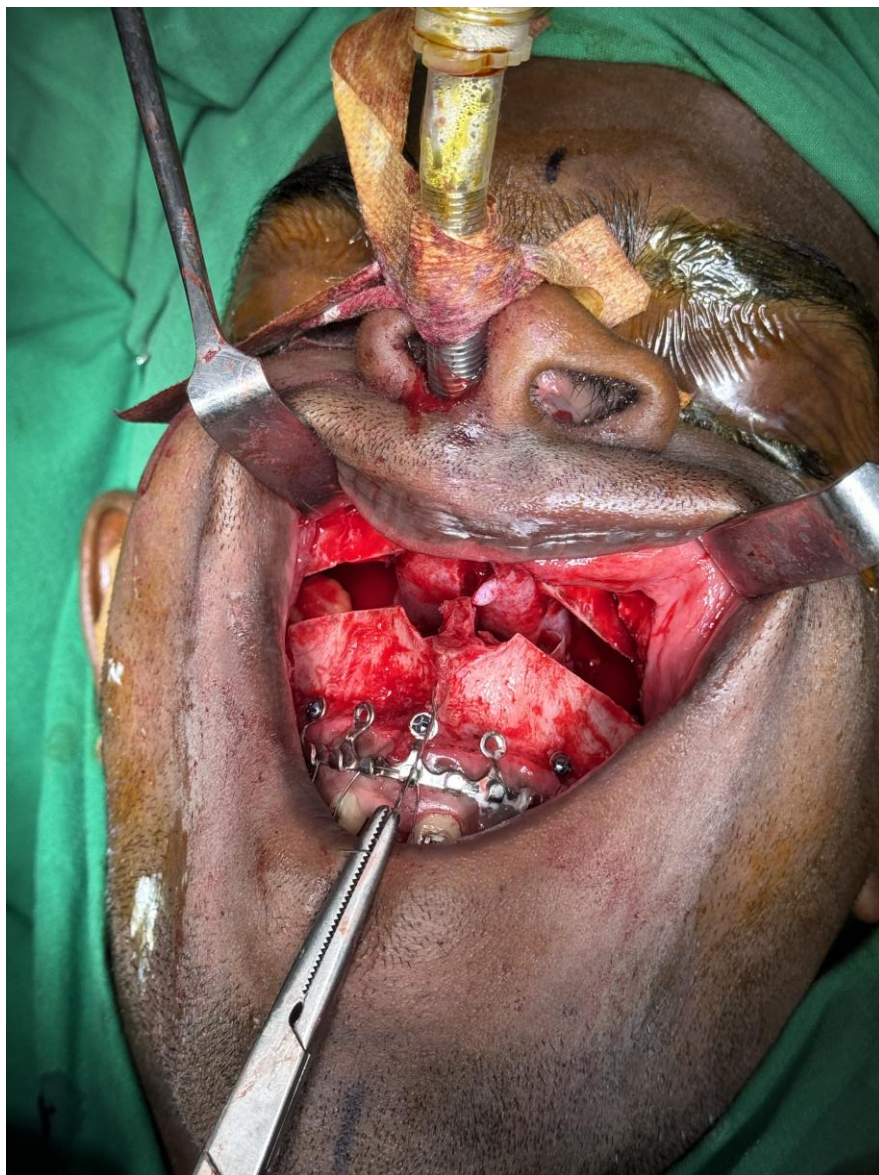
The journey of a case represents the convergence of diagnosis and technology:

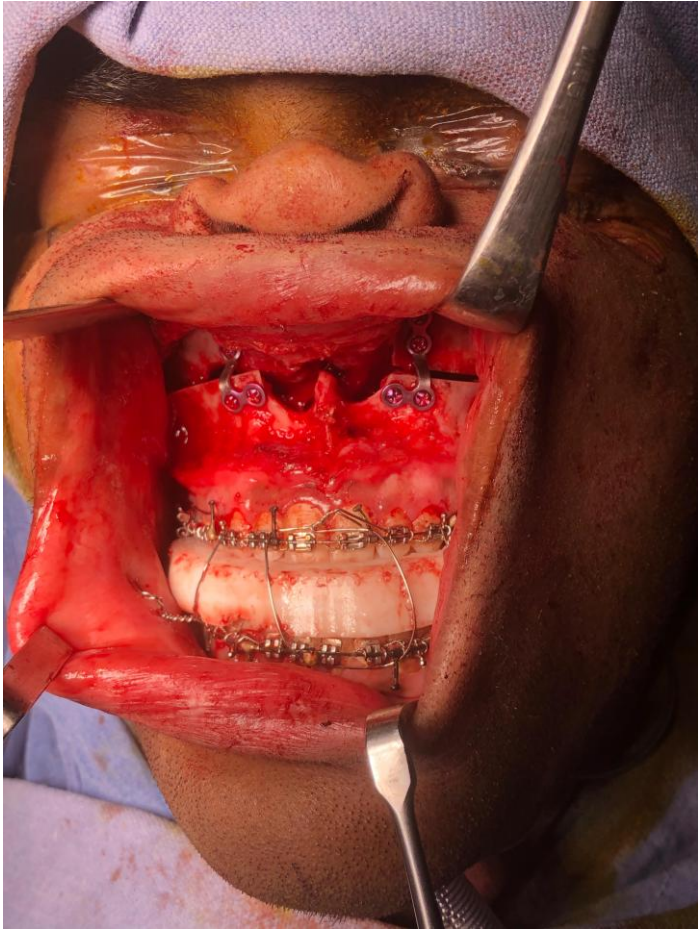
- ✓ **Pre-Op:** Diagnosis of skeletal discrepancy - Class III underbite).
- ✓ **3D Planning:** Precise calculation of bone movements.
- ✓ **Execution:** Using 3D-printed splints (shown right) to guide the osteotomies.
- ✓ **Result:** A balanced, functional, and aesthetic outcome.

"This predictability is the gift of modern technology."

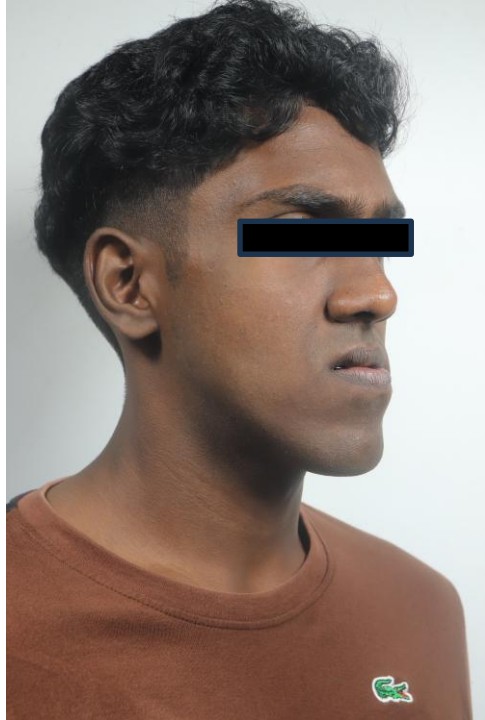












The Recovery Journey



Hospital Stay

1-2 Nights

Focus on airway safety, pain management, and starting a liquid diet.



Initial Healing

First 2 Weeks

Significant swelling. Strict liquid diet. Rest is crucial. The "patience phase."



Transition

Weeks 3-6

Swelling reduces rapidly. Transition to soft, non-chew foods. Return to work/school.



Normalization

3-6 Months

Bone healing completes. Soft tissue settles. Final orthodontic detailing.

Risks & Complications

INTRAOPERATIVE & IMMEDIATE POSTOPERATIVE

-  • Hemorrhage (Bleeding)
-  • Nerve Injury (e.g., Inferior Alveolar, Lingual)
-  • Bad Split (Unfavorable Fractures)
-  • Tooth Damage/Avulsion
- Anesthesia Complications
-  • Swelling & Bruising (Edema)
- Pain & Discomfort
-  • Infection

LATE & LONG-TERM

- Neurosensory Deficits (Permanent Numbness/Paresthesia)
- Malocclusion/Bite Abnormalities
- Relapse (Skeletal/Dental)
-  • Temporomandibular Joint (TMJ) Disorders
- Nonunion/Delayed Healing
- Hardware Issues (Infection, Exposure, Need for Removal)
-  • Nasal Changes (e.g., Deviation, Widening)
- Psychological Impacts
- Need for Secondary Surgery

Beyond Aesthetics

Life-Changing Impact

While the visual transformation is striking, the internal changes are often the most profound.

- ✓ **Restored Function:** "Chewing is effortless and pain-free."
- ✓ **Improved Health:** Resolution of sleep apnea and reduced joint stress.
- ✓ **Psychosocial Confidence:** A willingness to smile and a positive self-image.

"We restore not just the face, but the quality of life."



Key Takeaways

- ✓ Orthognathic surgery is **functional, aesthetic, and reconstructive**.
- ✓ Success hinges on the **Surgeon + Orthodontist** partnership.
- ✓ **3D Technology** ensures safer, predictable outcomes.
- ✓ It is a transformative journey with profound, life-long benefits.

Redesigning the Foundation.

Questions?

Thank you for your attention.

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