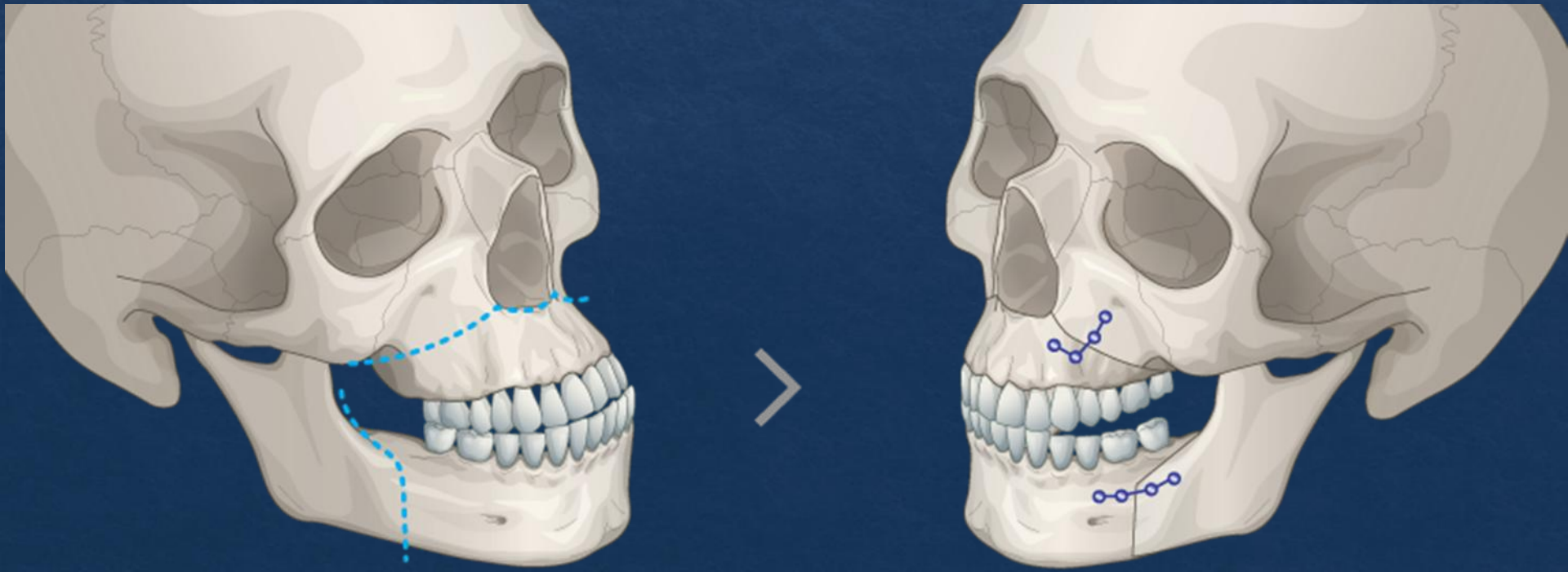


Orthodontic Role in Orthognathic Surgery

Dr MKVM Amarasinghe
Senior Registrar – Orthodontics
Army Hospital, Colombo 05.



Introduction

- ◆ Orthognathic surgery manages severe dentofacial deformities beyond dentoalveolar compensation
- ◆ Orthodontics is integral to functional, aesthetic, and stable outcomes
- ◆ Success depends on close orthodontist–surgeon collaboration



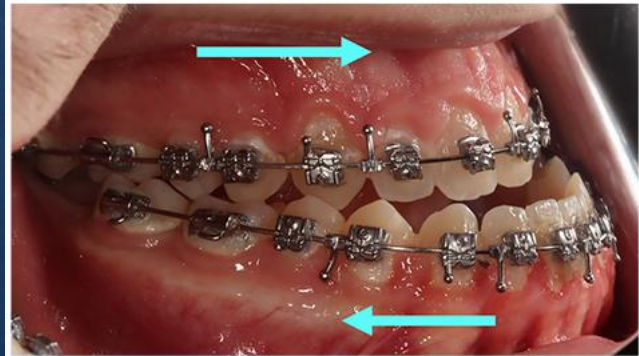
Why Orthodontics is Fundamental ?

- ❖ Not an adjunct but the foundation of orthognathic surgery
- ❖ Guides diagnosis, planning, execution, and finishing
- ❖ Ensures long-term occlusal and skeletal stability



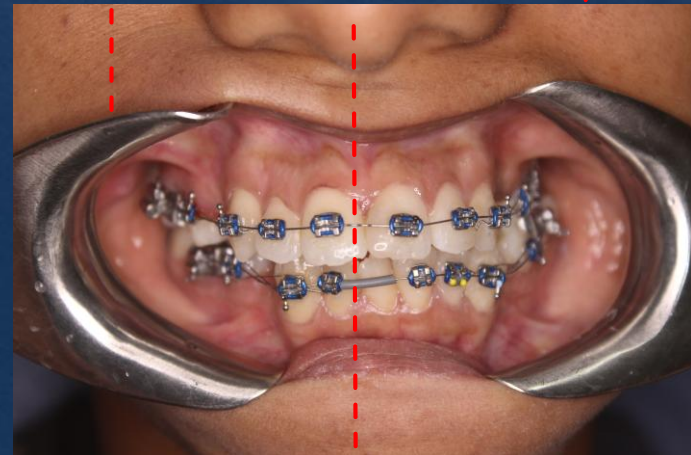
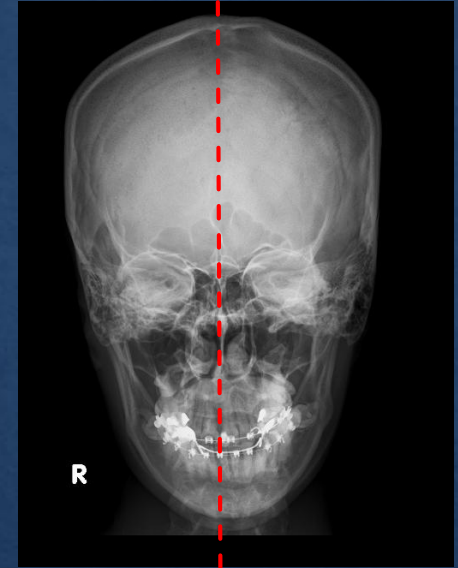
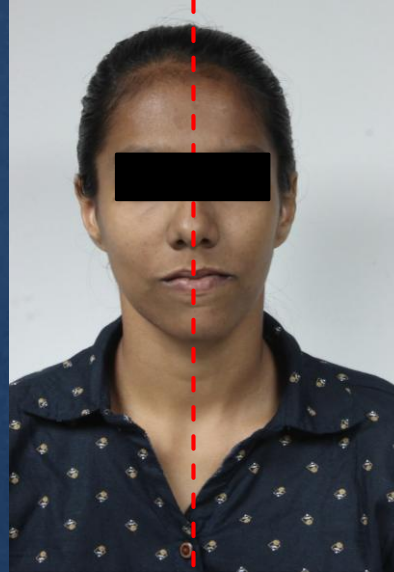
Phases of Orthodontic Involvement

- ◆ Initial evaluation and diagnosis
- ◆ Pre-surgical orthodontics
- ◆ Surgical planning and splint fabrication
- ◆ Post-surgical orthodontics and finishing



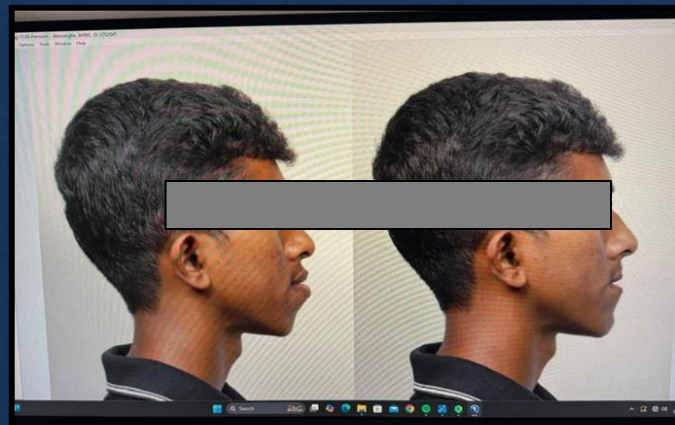
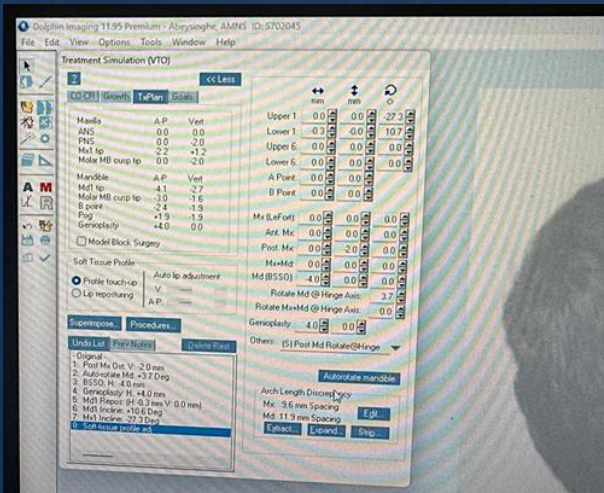
Initial Evaluation – Traditional approach

- ◆ Accurate diagnosis of skeletal vs dental discrepancy
- ◆ Use of photographs, study models, OPG, lateral & PA cephalograms
- ◆ Assessment of sagittal, vertical, and transverse dimensions



Initial Evaluation: Role of New Technology

- ◆ 3D imaging with CBCT
 - ◆ Digital dental models and intraoral scanning
 - ◆ 3D facial analysis and soft tissue simulation
 - ◆ Virtual surgical planning
- Improved accuracy and prediction of outcomes



Multidisciplinary Team Approach

- ❖ Orthodontist and maxillofacial surgeon as equal partners
- ❖ Continuous communication throughout treatment
- ❖ Key determinant of success



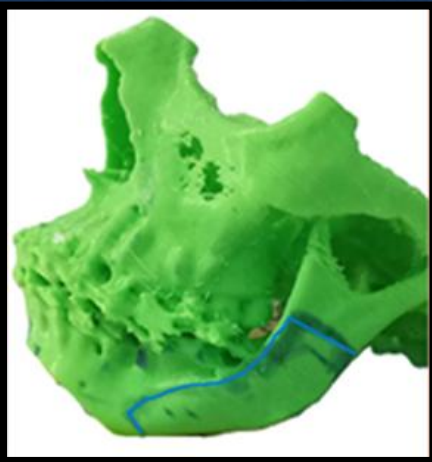
Pre-Surgical Orthodontics: Objectives

- ◈ Unmask true skeletal discrepancy
- ◈ Eliminate dental compensations
- ◈ Prepare arches for ideal surgical positioning



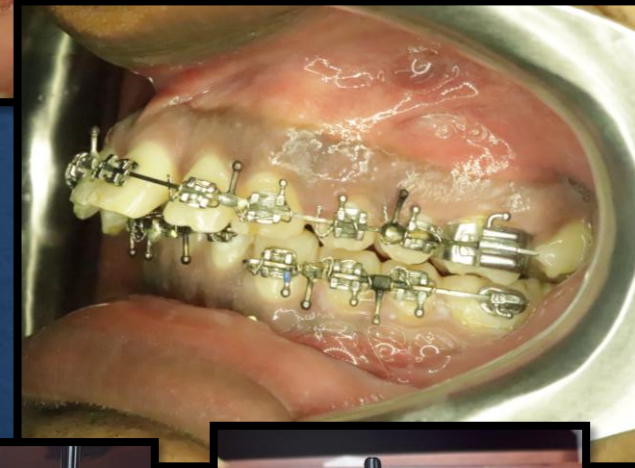
Surgical Planning & Splints

- ◇ Manual or digital model surgery
- ◇ Fabrication of intermediate and final splints
- ◇ Prosthetic replacement planned



Intraoperative Orthodontic Role

- ◆ Use of brackets, arch wires, and hooks for intermaxillary fixation during and after surgery
- ◆ Assists accurate jaw positioning



Post-Surgical Orthodontics

- ◇ Osteotomy produces minor occlusal discrepancies
- ◇ Settling and detailing of occlusion required
- ◇ Essential for function and long-term stability



- Achieving ideal intercuspation
- Improves mastication efficiency
- Reduces relapse potential

Patient Expectations After Surgery

- ◆ Shift from skeletal concerns to dental details
- ◆ Increased awareness of minor discrepancies
- ◆ Timely orthodontic refinement improves satisfaction



Evolution of the Orthodontist's Role in Orthognathic Surgery

- ◊ From dental preparation to skeletal-focused planning
- ◊ From 2D cephalometric to 3D CBCT-based analysis
- ◊ From model surgery to virtual surgical planning
- ◊ From intraoperative support to pre-surgical prediction
- ◊ From post-surgical correction to long-term stability planning

Conclusion

- ❖ Orthodontics underpins successful orthognathic surgery
- ❖ Comprehensive involvement from diagnosis to finishing
- ❖ Team-based approach ensures aesthetic, functional, and stable outcomes

