

Tilted Versus Axial Implant Distribution in The Posterior Edentulous Mandible: A CBCT analysis”

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• Objective of the Study:

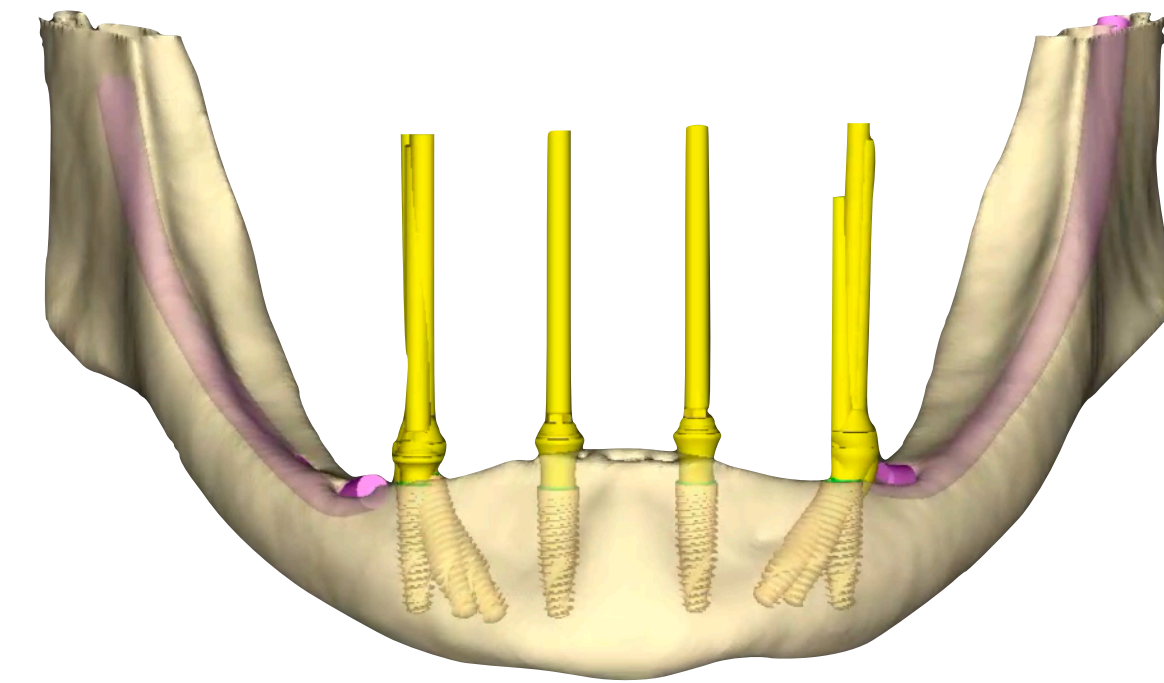
- Addresses a crucial aspect of implant dentistry, specifically, the challenges and considerations in rehabilitating the edentulous Mandible. The research investigates whether distally angulating implants is a successful strategy to avoid the vital anatomical structures, thus increasing anterior posterior (A-P) implant distribution.

• Methodology:

- The study involved 112 patients with edentulous mandible.
- Virtual implant planning was performed using CBCT scans, considering three implant : axial implant and tilted implants with 30-degree and 45-degree angulations.
- 0 ,30,45 MUA were virtually selected to correspond with the implant angulation.
- Measurements were made to assess the change in A-P distribution at the implant and abutment levels.

• Results:

- The average change in A-P spread measured at the implant level, for 30- and 45-degree tilted implants was 1.45 mm and 1.7 mm, respectively.
- Axial implants were placed more distally than tilted implants in certain cases
- Titled implant were able to avoid the metal forman and the fixture had more surrounding bone but was not able to increase the A-P spread



8 Implant were viritally placed, Each side had 4 implant one anterior implant and three posterior Implant placed axially 30 degree and 45 degree

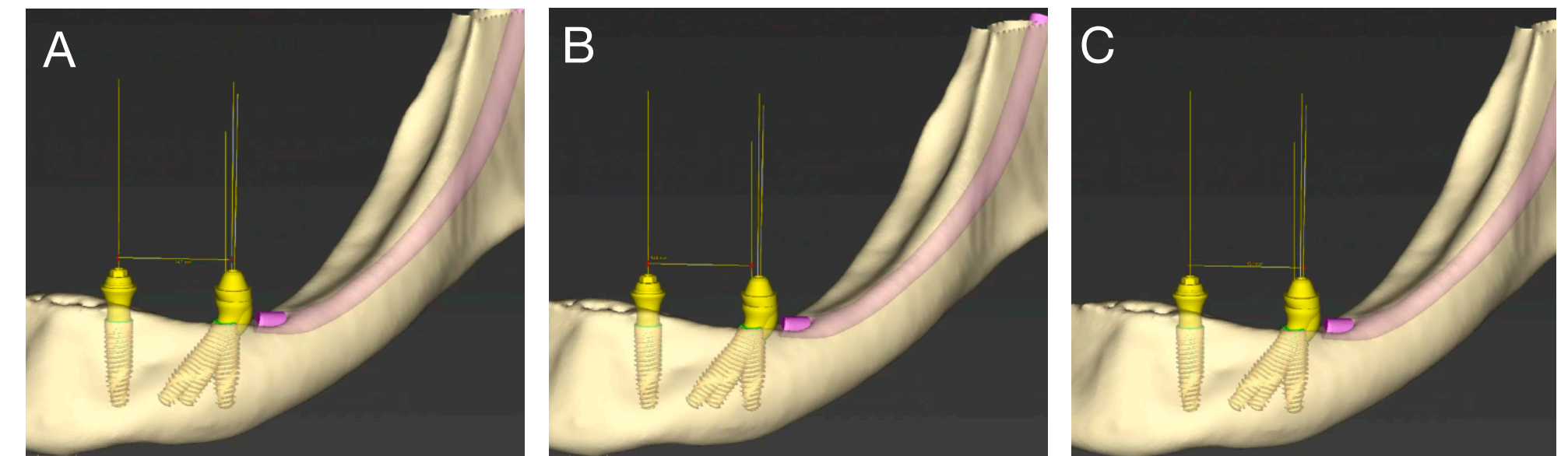
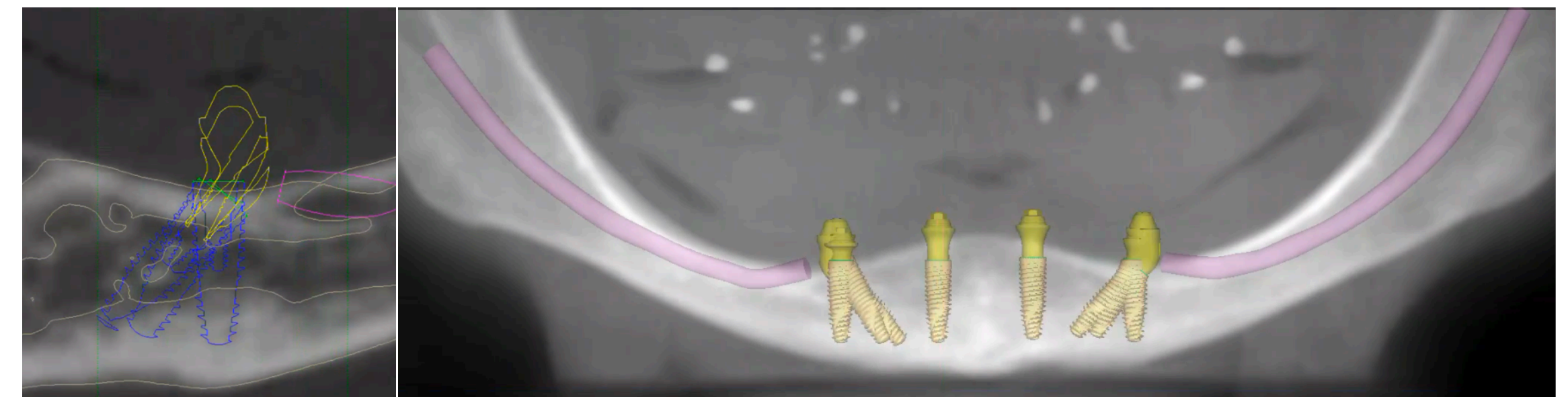


Figure A: Axial Implant distance from the anterior Implant is 13.8mm, Figure B: 30' Tilted implant Distance from anterior implant is 15.7mm , Figure C: 45' Tilted implant Distance from anterior implant is 14.3mm



Panoramic View of the implant and the selected abutments

• Conclusion:

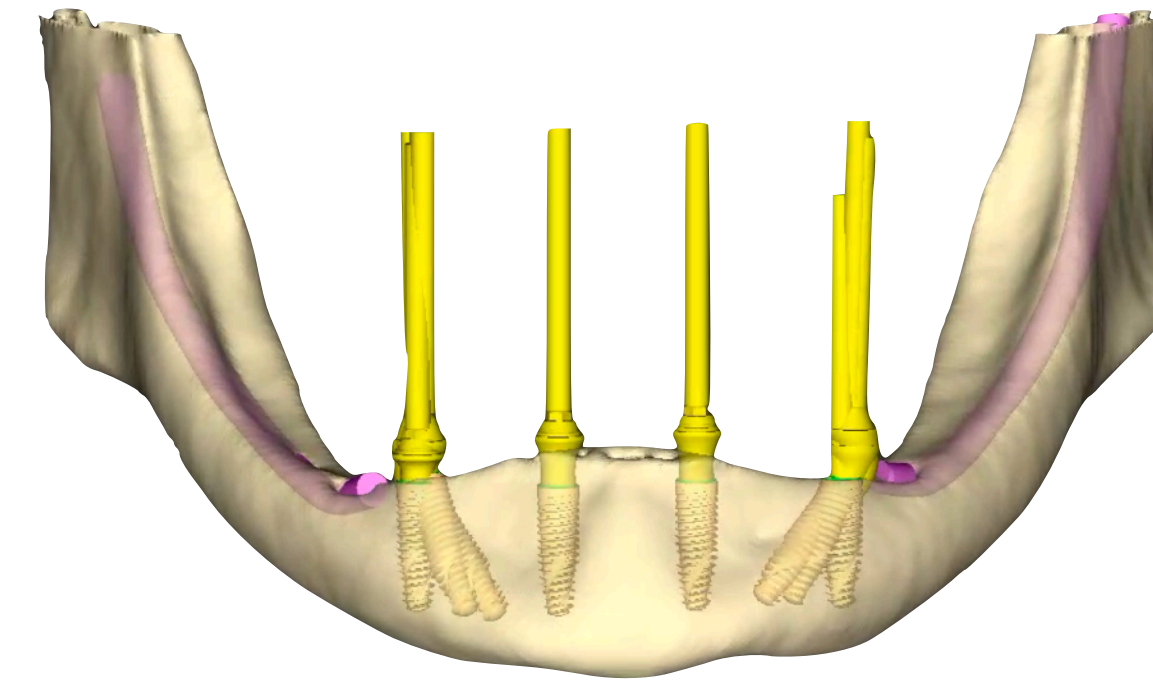
- Tilting the implant in posterior mandible provides a limited increase in A-P distribution in most cases.
- In certain situations, the use of axial implants may provide a greater A-P spread.
- The decision between axial and tilted implants should be based on individual patient anatomy and prosthetic and mechanical considerations.

• Limitations and Considerations:

- The study acknowledges anatomical variations, and the results emphasize the importance of individualized treatment planning.
- The study include not considering pre-determined prosthetic tooth positions in the assessment.

• Clinical Implications:

- The findings suggest that a patient-specific approach, considering both anatomical and prosthetic factors, is crucial for successful implant rehabilitation in the edentulous mandible.
- The study highlights the potential benefits of virtual implant planning in assessing individualized treatment options.



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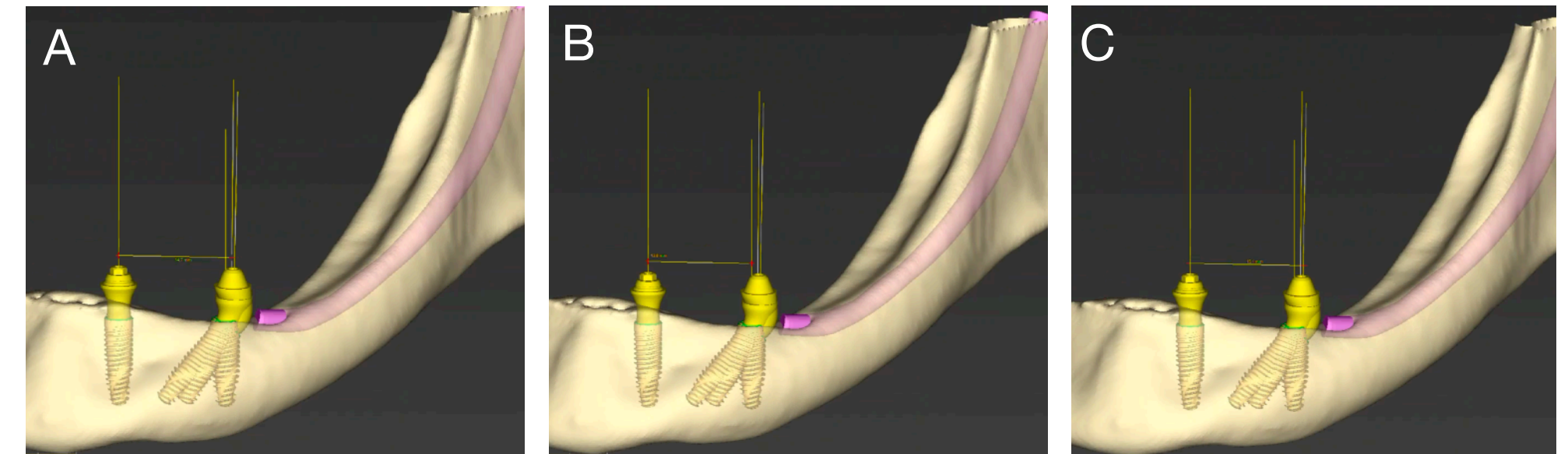
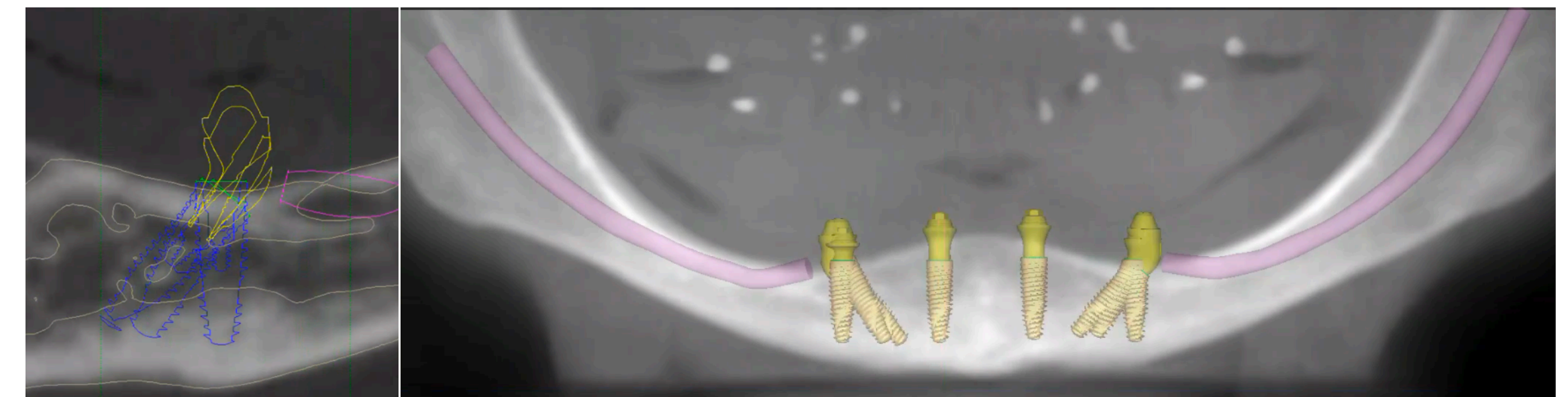


Figure A: Axial Implant distance from the anterior Implant is 13.8mm, Figure B: 30 Tilted implant Distance from anterior implant is 15.7mm , Figure C: 45% Tilted implant Distance from anterior implant is 14.3mm



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