"Face Off": Clay-rifying Le Fort Fractures Utilizing Clay Models to Enhance Medical Education for Residents and Students

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PURPOSE

The purpose of this study is to evaluate the effectiveness of anatomically accurate clay models as a teaching tool to improve radiology residents' understanding, interpretation, and communication of Le Fort fractures. This approach aims to enhance diagnostic confidence and accuracy in identifying these complex maxillofacial injuries on radiological images.

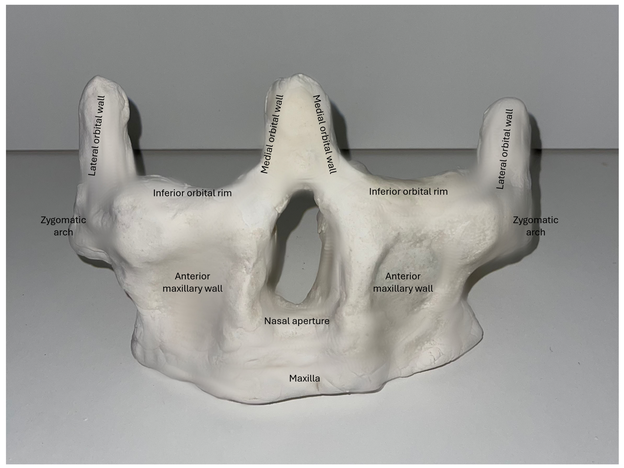
BACKGROUND

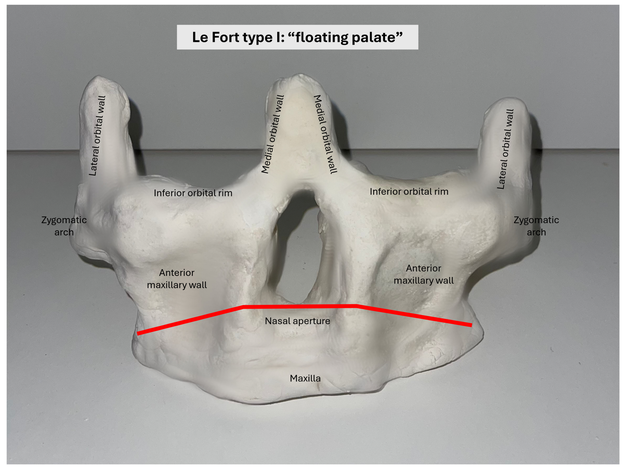
Le Fort fractures are critical maxillofacial injuries characterized by distinct patterns of facial bone displacement. For radiology residents, mastering the identification and interpretation of these fractures is essential for effective patient management. This study evaluates the use of clay models as a teaching tool to enhance the understanding of Le Fort fractures among radiology residents.

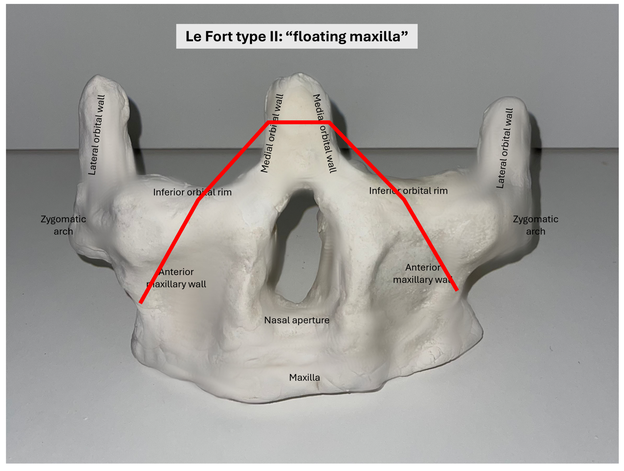
METHOD

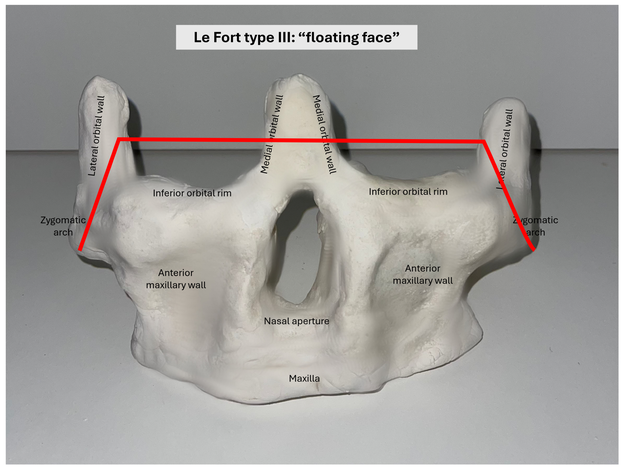
We created a series of anatomically accurate clay models representing the three types of Le Fort fractures (I, II, and III). Radiology residents participated in interactive training sessions using these models, focusing on fracture identification, radiological correlates, and implications for surgical intervention. Pre- and post-training assessments measured participants' confidence in interpreting radiological images of Le Fort fractures and their ability to communicate findings.

Results









The clay models provided a tangible representation of the fracture mechanics and anatomical relationships crucial for accurate radiological assessment. Residents reported a significant increase in confidence ($p < 0.01$) and demonstrated improved diagnostic skills in identifying Le Fort fractures on radiographs ($p < 0.05$). Feedback highlighted the models' effectiveness in bridging the gap between theoretical knowledge and practical application in radiological interpretation.

CONCLUSION

The use of clay models as an educational tool significantly enhances the learning experience for radiology residents studying Le Fort fractures. This approach fosters a deeper understanding of anatomical structures and fracture mechanics, ultimately improving diagnostic accuracy and communication skills. Further research is needed to evaluate the long-term benefits of this training method in radiology education.

REFERENCES

Le Fort R. Étude expérimentale sur les fractures de la mâchoire supérieure. Rev Chir Paris. 1901;23:208–227, 360–379.
Relevance: Original cadaveric study defining the biomechanical "lines of weakness" forming the basis of Le Fort classification^ (implied foundational source from historical context in search results).

Ahmed A, Rice KM. LeFort 1 Fracture. Global Radiology CME. 2020.
Relevance: Highlights CT protocols (e.g., pterygoid plate assessment) and 3D reconstructions, directly supporting the clay models' design to replicate fracture planes.