Comment on "Proposal for a modified classification of isolated zygomatic arch fractures"

Andrea Frosolini, Simone Benedetti, Paolo Gennaro, Guido Gabriele

Maxillofacial Surgery Unit, Department of Medical Biotechnologies, University of Siena, Siena, Italy

To the Editor:

We read with interest the article by Jung et al. [1], entitled "Proposal for a modified classification of isolated zygomatic arch fractures," in which existing classifications for zygomatic arch fractures are compared and a new functional tool for clinical and research purposes in the field of maxillofacial traumatology is proposed. As stated by the authors, a textbook classification of zygomatic fractures has not yet been established. Recent systematic reviews have highlighted the existence of considerable variation in classifications, outcome definitions and data collection; therefore, there is an urgent need for standardization to provide high-quality data [2]. In particular, no consensus exists regarding the treatment strategy or the best surgical approaches, including the number and modality of open-access reductions and internal fixations. To overcome these limits, in our opinion, a useful grading system should be applied more clearly to evaluate the outcomes of interventions, which appear to be a neglected aspect in the current classifications [1]. Radiology, particularly computed tomography (CT), is an important tool in maxillofacial surgical planning and postoperative evaluation. CT scans can provide detailed images of the bones and soft tissues in the facial region, allowing surgeons to accurately plan and perform procedures [3]. In cases of zygomatic fractures,

CT scans can be used to measure changes in the affected area after surgery. In the study of Wang et al. [4], standard maxillofacial CT was preliminarily applied using a specific region of interest (ROI) calculator to compare pre- and postoperative zygomatic measures; this technique was shown to be sensitive enough to detect significant differences on the fractured side and nonsignificant differences on the healthy side in five patients. Moreover, computer-aided design and computer-aided manufacturing (CAD/CAM) tools, derived from orthognathic surgery, have been proposed in the recent guidelines of the Chinese Stomatological Association to compare the preoperative and postoperative results of zygomatic fractures. These tools may provide even greater accuracy and precision in measuring changes in facial structures; thus, in the future, new interesting prospective data are expected [5]. Traditional CT scans are widely available in many healthcare settings and are considered to be relatively affordable, especially compared to other advanced imaging technologies such as magnetic resonance imaging or positron emission tomography. ROI calculators and CAD/CAM tools are more specialized technologies that may not be available in all healthcare settings; however, as this technology continues to evolve and become more widely adopted in the medical field, it is possible that these costs will steadily decrease. In addition, there may be opportunities to access these technologies through clinical research studies and collaborations with academic medical centers, which may provide access to advanced imaging and data analysis tools at considerably reduced costs. In conclusion, by providing detailed images of the facial bones and soft tissues, CT scans will help surgeons to accurately identify the location and extent of zygomatic fractures, as well as to plan the most effective surgical approach.

Correspondence: Andrea Frosolini
Maxillofacial Surgery Unit, Department of Medical Biotechnologies, University of Siena, Viale Bracci n1, Siena 53100, Italy
E-mail: andreafrosolini@gmail.com

Letter

Frosolini A et al.   Imaging references in zygomatic fractures

Archives of Craniofacial Surgery ACFS

ROI calculators will be useful to standardize the measurements of the affected area, which can aid in postoperative evaluation and long-term monitoring of the healing process. Furthermore, CAD/CAM tools can further enhance the accuracy and precision of surgical planning by allowing surgeons to create detailed three-dimensional models of the facial bones and to simulate surgical procedures before they are performed. This can help minimize the risk of complications and ensure the best possible outcomes for patients. Overall, the use of these technologies should be included in a future standard classification system.

NOTES

Conflict of interest

No potential conflict of interest relevant to this article was reported.

Funding

None.

ORCID

Andrea Frosolini   https://orcid.org/0000-0003-1347-4013
Simone Benedetti   https://orcid.org/0000-0002-8997-5335
Paolo Gennaro   https://orcid.org/0000-0002-1603-3697
Guido Gabriele   https://orcid.org/0000-0002-1028-7493

REFERENCES

1. Jung S, Yoon S, Nam SH. Proposal for a modified classification of isolated zygomatic arch fractures. Arch Craniofac Surg 2022; 23:111-8.
2. Dubron K, Van Camp P, Jacobs R, Politis C, Shaheen E. Accuracy of virtual planning and intraoperative navigation in zygomaticomaxillary complex fractures: a systematic review. J Stomatol Oral Maxillofac Surg 2022;123:e841-8.
3. Cascino F, Cerase A, Gennaro P, Latini L, Fantozzi V, Gabriele G. Multidisciplinary evaluation of orbital floor fractures: dynamic MRI outcomes. Orbit 2022 Dec 21 [Epub]. https://doi.org/10.1080/01676830.2022.2155974
4. Wang TH, Yu WC, Chen ZH, Tien YH, Chen WM, Chiu FY, et al. The symmetry indices of malar mounds for zygomatic bone fracture management based on a computed tomographic model. J Chin Med Assoc 2021;84:709-12.
5. He Y, Zhang Y, Yu GY, Guo CB, Shen GF, Peng X, et al. Expert consensus on navigation-guided unilateral delayed zygomatic fracture reconstruction techniques. Chin J Dent Res 2020;23: 45-50.