Preface

The First Comprehensive AO Classification System for Fractures of the Craniomaxillofacial Skeleton

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The AO Foundation has a long history of involvement in the development, validation, education, and documentation in the field of surgical fracture treatment. As part of these efforts, Maurice Müller and his colleagues were the first to develop a comprehensive classification system for long bone fractures in adults. Their system is hierarchically organized in triads and indicates some level of fracture severity. It was appealing to many trauma surgeons and consequently became - and up to now remains - a standard around the world. Nowadays, it is taught at all AO principle courses and enables trauma surgeons to speak a common language, perhaps comparable to English, which has become the international language of science. Without English you would not be able to understand what we write; without a fracture classification, trauma surgeons would find it difficult to communicate about bony injuries, describe their cases and document them for further retrieval and analysis. The same could be said for the adaptation of the Müller AO classification system (or rather the triad concept) to fractures of the pelvis and acetabulum, the spine, the hand or the foot, as well as the whole fracture and dislocation compendium of the Orthopaedic Trauma Association. All these systems have their limitations, they may not suit every surgeon; however they all have the same objectives, which are: to be descriptive in simple and easy to use categories and terminology, to be prognostic about case severity and/or treatment complexity, to help surgeons in their decision process, and to facilitate documentation for research.

It is with great satisfaction that after more than 10 years of development we present the first AO classification system for fractures of the craniomaxillofacial (CMF) skeleton together with the AOCOIAC (AO Comprehensive Injury Automatic Classifier) software solution. It is the outcome of a long development process, during which many face-to-face

meetings and repeated pilot classification validation sessions using a large collection of real-life CMF trauma cases were conducted. The task was immense, and most of us (members of the various task forces) did not realize this at the start.

Many classification systems and proposals already existed for the various areas of the facial skeleton. The midface classification system of Le Fort is probably the system, which found the greatest international acceptance. Many additional proposals were made for the various anatomical regions of the facial skeleton, like e.g., mandible, including the articular process, lateral midface, orbit, nasoorbital region and skull base, but none of these gained as much international acceptance as the Le Fort classification. We aimed at bringing all of them together into one comprehensive system, addressing the whole CMF skeleton.

Initially, we believed Müller's triad approach could also work for the facial skeleton, but it did not. In 2002, Buitrago-Téllez and colleagues proposed the first CT-based comprehensive classification of craniofacial fractures based on the triad approach, which was further developed for the mandible and evaluated by our initial Classification Group. Surgeons could not agree about this proposal (which was also supported by poor validation results) and we had to realize that this development path was not going to be successful. We became unsure as to whether developing such a system would be possible at all. The complexity of the CMF anatomy had to be simplified, yet offering experts a way to describe and document their cases in sufficient detail. The CMF Classification Group persevered and completed the task.

This first comprehensive AO classification system for fractures of the craniomaxillofacial skeleton was presented to and approved by the AOCMF International Board in July 2012. The system is now presented in a series of tutorials, separately by CMF regions, authored by the respective Classification Groups

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involved in its development. Each tutorial includes an anatomical description of the corresponding classification system, along with numerous illustrations, a presentation of typical real-life cases to illustrate the classification, as well as a discussion about the choice made with regard to existing specific systems. The classification system is integrated into a freely available software solution as part of the AOCOIAC (AO Comprehensive Injury Automatic Classifier), which facilitates fracture classification and coding. All illustrative cases are loaded electronically into the database along with additional case examples. This unique case collection is available on the AOCMF web portal (www.aocmf.org/classification) for downloading and viewing with AOCOIAC.

It was our aim to establish a consistent and reproducible classification system based on CT images, providing a universal language and a coding that facilitates multicentre communication and collaboration. The AOCOIAC system

allows for case documentation and hence facilitates inter-institutional comparison of clinical outcomes. This is another step toward the optimization of surgical procedures through standardized case descriptions, which may also serve as a basis for future clinical and economic investigations.

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