

Classification of Mandibular Condylar Fractures

David B. Powers, MD, DMD, FRCS (Ed)

KEYWORDS

• Classification system • Mandibular condylar process fractures • Management regimen • Open versus closed

KEY POINTS

- There is no universal gold standard classification system for mandibular condylar process fractures.
- A clinically relevant mandibular condyle classification system should be easy to understand, and be easy to recall, for implementation into the management of a condylar fracture.
- An accurate appreciation of the location of the mandibular condylar fracture assists with the determination of either an operative or nonoperative management regimen.

Various classification systems describing mandibular condylar fractures have been developed and published, essentially since the development of treatment protocols for these injuries.^{1–8} The universal application of a single classification system is highly controversial, if not impossible, because of variability in terminology, grammatical differences, native language challenges, and regional preferences for a specific system. It is beyond the scope of this article to present a comprehensive review of all of the available classification systems in the literature, but instead the focus is to develop an understanding of which classification system presents for the reader key factors in the description of the location of the injury, the structures involved, and implications for management.

A clinically relevant classification system should comprise several key elements specifically: the anatomic position of the fracture, the degree of displacement and/or dislocation, and a simple classification scale construction that allows for ease of recall and comprehensibility. The anatomic position of the fracture is a critical component of any useful classification system. Any structural reference site should be easily identifiable, even within significant fracture patterns, and have applicability over a wide variety of treatment protocols. Considerable variability exists between the use of the terms “displacement” and “dislocation.” Native English-speaking countries use the term displacement with the understanding there remains some degree of bony contact between the fractured and dislodged bony fragments while the condylar head remains within the articulating fossa. Further confusion exists when the condylar head remains within the fossa, but there is no longer contact between the fractured bony fragments. In circumstances such as this, they may be described as displaced fractures, whereas conditions where fractured bony

contact remains can be referenced as deviated fractures. Dislocation refers to fractures where the condylar head is totally dislodged from the articulating fossa. For the purposes of clarity for this article, the terms displacement and dislocation as proposed by Loukota are used, displacement refers to shifting between the fracture segments, and dislocation describes alteration between components of the temporomandibular joint (TMJ) (Fig. 1).

The anatomic position of the fracture is the most critical component of any classification system. The most widely referenced are discussed next, with a description of each of the relevant components associated with each one. In 1927, Wassmund² distinguished between fractures of the condylar head and the condylar neck. The condylar head fractures were identified as either comminuted head fractures or “chip fractures” not affecting continuity.² The condylar neck fractures were further isolated to

- Vertical neck fractures secondary to shearing
- Transverse neck fractures secondary to bending
- Oblique neck fractures caused by a combination of shearing/bending

Wassmund³ continued his work and in 1934 described dislocated fractures into three categories:

- Type I: 10° to 40° angulation of the condylar head with bony contact between the fragments
- Type II: 50° to 90° angulation of the condylar head with slight bony contact between the fragments
- Type III: Severe medial displacement with no contact between the bony fragments

The classification systems continued to become more descriptive when in 1952 MacLennan⁴ divided condylar fractures into sections according to anatomic location, the position of the condylar head within the articulating fossa, and

Duke Craniomaxillofacial Trauma Program, Division of Plastic, Reconstructive, Maxillofacial and Oral Surgery, Duke University Medical Center, Box 2955, Durham, NC 27710, USA

E-mail address: David.Powers@duke.edu

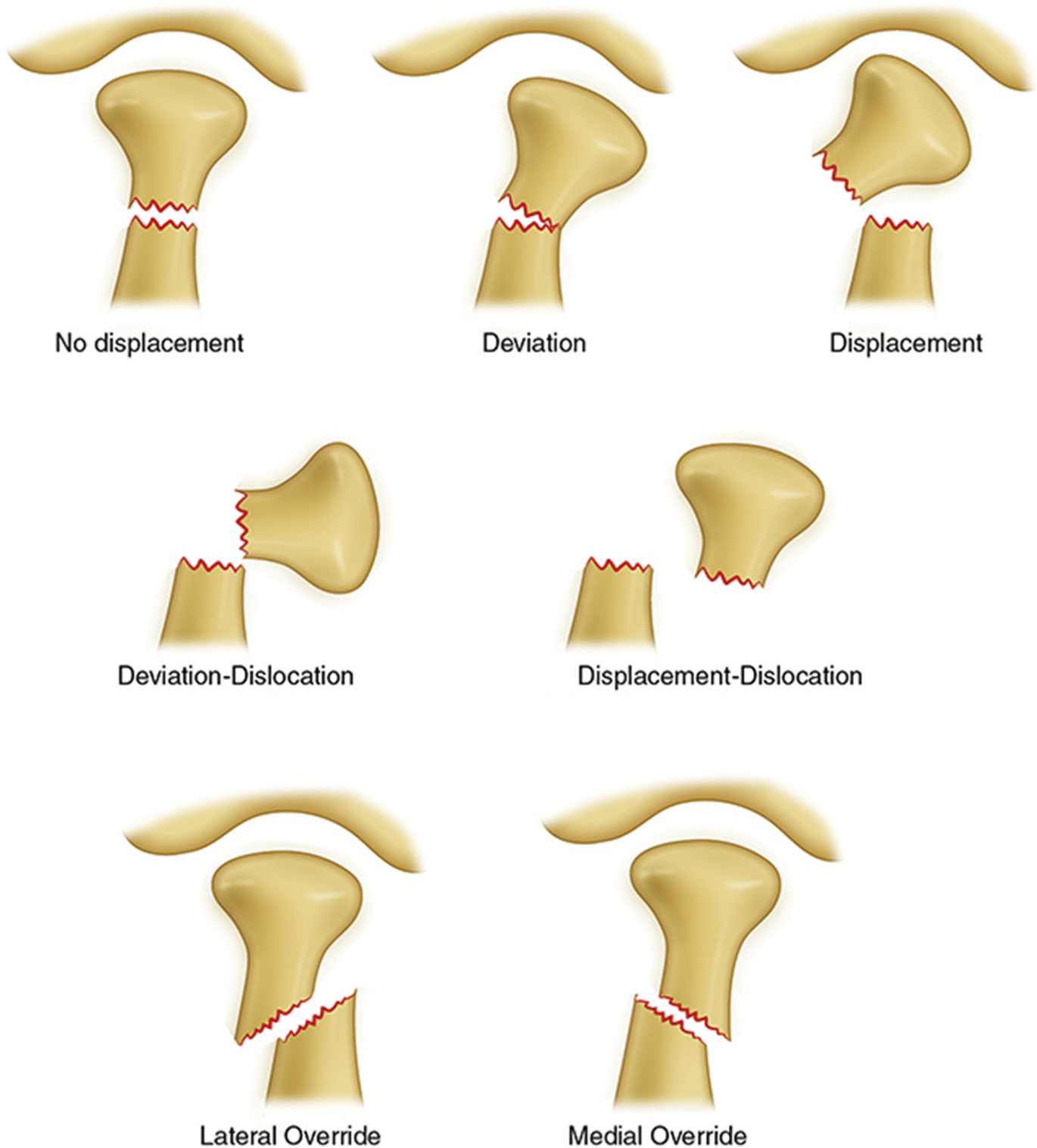


Fig. 1 Common definitions to describe the position of condylar head in relation to mandibular condylar fractures.

the association of between the larger/smaller fracture segments:

- Low condylar neck fracture line starts at the sigmoid notch and extends caudally and obliquely to the posterior border of the ramus
- High condylar neck fracture begins above the sigmoid notch with involvement of the condylar neck
- Subcondylar fractures consist of posterior oblique fractures of the mandibular ramus
- Complete luxation fractures have avulsion of the condylar process

Download English Version:

<https://daneshyari.com/en/article/5638166>

Download Persian Version:

<https://daneshyari.com/article/5638166>

[Daneshyari.com](https://daneshyari.com)