Detecting severe injuries of the upper body in multiple trauma patients

Klemens Horst, MD, a, * Frank Hildebrand, MD, PhD, MHBA, a Philipp Kobbe, MD, PhD, a Roman Pfeifer, MD, PhD, a Philipp Lichte, MD, a Hagen Andruszkow, MD, a Rolf Lefering, MD, PhD, b and Hans Christoph Pape, MD, PhD a

a Department for Orthopaedic Trauma, RWTH Aachen University Hospital, Aachen, Germany
b IFOM—The Institute for Research in Operative Medicine, Faculty of Health, Department of Medicine, Witten/Herdecke University, Cologne, Germany

ABSTRACT

Background: The clavicle limits the upper thoracic cage and connects the body and upper extremities. The clavicle is easy to examine and is visible on standard emergency room radiographs. We hypothesized that clavicular fracture in polytrauma patients would indicate the presence of further injuries of the upper extremities, head, neck, and thorax.

Methods: A population-based trauma registry was used. All patients were documented between 2002 and 2013. Inclusion criteria were age ≥16 y and injury severity score (ISS) ≥16. Patients were divided into two groups according to the presence or absence of a clavicular fracture (group C+ and group C–). Scoring was based on the abbreviated injury scale, ISS, and new injury severity score. Trauma mechanisms, demographics, and the posttraumatic clinical course were compared.

Results: In total, 4790 patients with clavicular fracture (C+) and 41,775 without (C–) were included; the mean ISS was 30 ± 11 (C+) versus 28 ± 12 (C–). Patients with clavicular fracture had a longer stay on the intensive care unit with 12 ± 14 versus 10 ± 13 d. Injuries to the thoracic wall, severe lung injuries as well as injuries to the cervical spine were significantly increased in C+ patients. Thoracic injuries as well as injuries of the shoulder girdle and/or arm showed an increased abbreviated injury scale in the C+ group.

Conclusions: A clinically relevant coincidence of clavicular fractures with injuries of the chest and upper extremity was found. As clavicular fractures can be diagnosed easily, it might also help to reduce the incidence of missed injuries of the chest and upper extremity. Therefore, special attention should be paid on thoracic as well as upper extremity injuries during the second and tertiary surveys in case of clavicular fractures.

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