

Chest Wall Injury Society

Title of Presentation

SMuRFS 5: Impact of the ShCh Shoulder-Chest Classification of Lateral Implosion Injuries

Background

A Shoulder-Chest (ShCh) Classification of lateral implosion injuries has been proposed to predict resource utilisation and risk. We aimed to assess the clinical impact of the classification.

Methods

The setting was a Regional Level 1 Major Trauma Centre in the United Kingdom. Included in the study were 539 sequential patients admitted with multiple rib fractures. Hospital Episode Statistics (HES) data were obtained, comprising ICD-10 diagnosis and procedure codes, and resource utilisation data. Thoracic CT scans were analysed and injuries were classified according to the ShCh Classification.

Results

20% (108) of patients with multiple rib fractures had an additional shoulder injury. SSRF was performed in 52 cases. Clavicle ORIF was performed in 10, scapula ORIF in 1 and proximal humerus ORIF in 5. The distribution of the 539 cases according to the ShCh Classification was according to Table 1.

Presence of shoulder injury and increasing Sh category was associated with any critical care stay ($p=0.003$ for both) and an increase in adverse outcomes ($p=0.002$ and $p<0.001$ respectively). Increasing Ch category was associated with SSRF performance ($p<0.001$), any critical care stay ($p<0.001$), longer critical care stays ($p=0.012$), increased adverse outcomes ($p<0.001$) and increased pulmonary complications ($p=0.002$).

Hospital length of stay was significantly longer in patients with shoulder injuries ($p=0.039$) and in increasing Sh and Ch categories ($p=0.042$ and $p<0.001$ respectively). There was no difference in hospital mortality for shoulder injuries or increasing Sh or Ch categories.

The associations between Sh and Ch scoring and outcomes were of similar strength to those of existing shoulder and chest fracture classification systems (Neer and RibScore).

Conclusion

In this retrospective cohort study, the ShCh Classification had relevance with regards to all assessed outcomes except mortality. Further work is required to determine the predictive value of the ShCh Classification compared to other risk and rib fracture scoring systems.

(OPTIONAL) Additional materials may be uploaded if desired. File name must include the last name of Author 1.

	Ch1	Ch2	Ch3	TOTAL
Sh0	143 (26.5%)	173 (32.1%)	115 (21.3%)	431 (80.0%)
Sh1	12 (2.2%)	26 (4.8%)	17 (3.2%)	55 (10.2%)
Sh2	10 (1.9%)	13 (2.4%)	13 (2.4%)	36 (6.7%)
Sh3	1 (0.2%)	5 (0.9%)	11 (2.0%)	17 (3.2%)
TOTAL	166 (30.8%)	217 (40.3%)	156 (28.9%)	539 (100%)