AOSpine Thoracolumbar Classification System

Algorithm for Morphologic Classification

START
Displacement/Dislocation → YES → C Translation

NO
Tension band injury → YES
Anterior → YES → B3 Hyperextension
Posterior → Osseoligamentous disruption → YES → B2 Osseoligamentous disruption
Mono-segmental osseous disruption → YES → B1 Pure transosseous disruption

NO
Vertebral body fracture → YES
Both endplates involved → YES → A4 Complete burst
Both endplates involved → NO → A3 Incomplete burst
Posterior wall involvement → YES → A2 Split/Pincer

NO
Vertebral process fracture → YES → A1 Wedge/Impaction

NO → No injury

Fracture Types

A. Type A.
Compression Injuries
Failure of anterior structures under compression.

B. Type B.
Distraction Injuries
Failure of the posterior or anterior tension band.

C. Type C.
Translation Injuries
Failure of all elements leading to dislocation or displacement.
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Description of Morphologic Classification

**Type A. Compression Injuries**

A0. Minor, nonstructural fractures
Fractures, which do not compromise the structural integrity of the spinal column such as transverse process or spinous process fractures.

A1. Wedge-compression
Fracture of a single endplate without involvement of the posterior wall of the vertebral body.

A2. Split
Fracture of both endplates without involvement of the posterior wall of the vertebral body.

A3. Incomplete burst
Fracture with any involvement of the posterior wall; only a single endplate fractured. Vertical fracture of the lamina is usually present and does not constitute a tension band failure.

A4. Complete burst
Fracture with any involvement of the posterior wall and both endplates. Vertical fracture of the lamina is usually present and does not constitute a tension band failure.

**Type B. Distraction Injuries**

B1. Transosseous tension band disruption / Chance fracture
Monosegmental pure osseous failure of the posterior tension band. The classical Chance fracture.

B2. Posterior tension band disruption
Bony and/or ligamentary failure of the posterior tension band together with a Type A fracture. Type A fracture should be classified separately.

**Type C. Translation Injuries**

C. Displacement / Dislocation
There are no subtypes because various configurations are possible due to dissociation/dislocation. Can be combined with subtypes of A or B.

B3. Hyperextension
Injury through the disk or vertebral body leading to a hyperextended position of the spinal column. Commonly seen in ankylosis disorders. Anterior structures, especially ALL are ruptured but there is a posterior hinge preventing further displacement.

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Further information: www.aospine.org/TLclassification