SUMMARY

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When you manage a thoracolumbar injured patient you must answer particular chronologic questions.

1- What type of neurologic injury the patient has ?

a) Complete

b) Incomplete

c) No neurologic deficit (page)

2-What type of injury the patient has?

a) Minor injuries:

1- Fractures of the transverse process.

2- Fractures of the articular process.

3- Fractures of the spinous process.

b) Major injuries:

1- Compression fractures.

2- Burst fractures.

3- Seat-belt fractures.

4- Fracture-dislocations.

(page)

3) Is it stable,potentially unstable or unstable ?.

a) Clinical Diagnosis of instability.

- White and Panjabi score.

- A score of 5 or more point = Unstable (Table 3). (page).

b) Radiological Diagnosis of instability.

1- Vertebral body collapse more than 50%

2- Increase the interpedicular distance.

3- Spinal canal encroachment more than 1/3 of its diameter on C.T. scan.

4- Translation of more than 2,5 mm vertebral body in any plane.

5- Bilateral facet dislocation indicates complete rupture of the disc and posterior ligament.

6- Major displacement of facet joint or spinous process without fracture suggesting ligament and annular disruption.

7- Abnormal widening between the spinous process and lamina.

c) Three-column classification of instability.

The thoracolumbar injuries will behave in a

stable manner if the middle column is intact and in unstable manner if disrupted. (page)

4) What type of onset of the instability?

a) Acute instability occurs early after the injury, transitional injuries is the most common cause of acute spinal instability. As healing progresses,it becomes progressively less.

b) Chronic instability : occurs late after the injury resulting from progressive deformity . Angular displacement is the most common cause of chronic spinal instability.

5- Is he an operative candidate?

a) Absolute indications for surgery:

- All unstable fractures and fracture - dislocations, regardless the neurologic state.

b) Relative indications for surgery:

- Potentially unstable fractures; compression fracture with lass of more than 50% of vertebral body height and angulation more than 20° or with multiple compression fractures.
- Stable fractures in high risk patients.
- Stable fractures with incomplete neural deficit.

- Stable fractures with complete neural deficit.

6) What is the direction of Instability?

7) What type of instrumentation is required to oppose the instability?

TYPE OF INJURY	DIRECTION OF INSTABILITY	TYPE OF INSTRUMENTATION
*Flexion-Compression.	* Axial compression. * Flexion. * Rotation.	* Distraction. * Extension Moment. * Rotational control.
Distraction	*Flexion. *Anterior Translation. *Distraction .	* Compression. * Extension Moment.
Shear .	*Distraction . *Translation.	* Compression. * Segmental Fixation.

Types of Instrumentation

I) Posterior Instrumentations.

1) Spinous Process Fixation.

Meurig-williams, weiss springs & Lange, Drummond modification of Luque rods.

2) Laminar Fixation.

a) Hook fixators : (Harrington roods, Edwards rods, Harri-Luque, Jacobs rods Moe rods Cotrel Dubousset)

b) Sublaminar wiring :(Luque rods Harri-Luque & Internal spinal fixators & Hart shill rectangle).

c) Translaminar screw fixation.

3) Pedicular Fixation.

a) Plates : (Roy-Camille, interpeduncular segmental fixation of Luque, Steffee plates, A-O standard plates, A-O notched plates, Wolter plates and Rudgonski plates)

b) Rods : (Internal Spinal skeletal fixator of Dick, A-O Internal Spinal fixator, FVM rod, and external Spinal skeletal fixator of Magerl).

4) Facetal Fixation (facetal screws as a part of pedicular fixation or facetal wiring as a part of Luque segmental fixation.

II) Anterior Instrumentations.

1) Plates: (A-O heavy plates, contoured plates of Armstrong , Bolt-plate fixation and Wolter plates.

2) Rods (Dwyer, Zielke, Anterior Harrington rods , Dwyer - Hall rods, Dunn device FVM rods and Rezaian Spinal Fixator).