

STUDY OF ASSOCIATED SKELETAL AND EXTRASKELETAL INJURIES IN HIGH ENERGY THORACIC AND LUMBAR SPINE FRACTURES

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Introduction

Thoracic and lumbar spine fractures encompass a wide range of injuries, ranging from stable fractures to complex fractures and dislocations. The dorsal and lumbar spines are split into three parts anatomically and functionally: the dorsal spine (D1-D10), the dorsolumbar junction (D10-L2), and the lumbar spine (L3-L5). Thoracolumbar trauma is frequently associated with injuries to the chest and abdomen. These include haemo or pneumothorax, hepatic or splenic lacerations, aortic injuries and intestinal injuries. As a result, well understanding the underlying pathophysiological mechanisms as well as the corresponding principles of surgical management are required for the successful treatment of polytrauma patients.

Aim of the work

This study reported the incidence of skeletal and extraskeletal injuries associated with high energy thoracic and lumbar spine fractures in patients admitted to the ER of Alexandria Main University Hospital (AMUH) over the entire year of 2020.

Subjects and Methods

PATIENTS:

Patients included in the study were admitted to the ER of AMUH from the 1st of January 2020 to the 31st of December 2020 and had different thoracic and lumbar spine fractures and they were treated either inside or outside AMUH.

METHODS:

All patients were subjected to thorough clinical and radiological assessment:

Radiological examination of the patient which included from the orthopaedic point of view anteroposterior and lateral plain radiographs of all suspected skeletal injuries and CT scan for thoracic and lumbar spine fractures.

After thorough studying of the CT scan of the patient and neurological examination, the patients were classified according to the AO classification of thoracolumbar spine injuries.

Results

Table 1: Incidence of skeletal and extra skeletal injuries associated with thoracic and lunbar spine fractures according to our study

Associated injury	Number of patients	Incidence
Intracranial injuries	9	17.3%
Chestinjuries other than rib cage fractures	10	19.23%
Abdomen and pelvis visceral injuries	16	30.77%
Upper extremities fractures	12	23.15%
Pelvic &Lower extremities fractures	29	55.77%
Skull & rib cage fractures	8	15.9%

Table 2: Incidence of different morphological types of fractures and their associated neurological deficit

Type of the fracture	Number of patients	Incidence	Incidence ofneurological deficit
Type A	72	76.6%	26.39%
Type B	8	8.5%	50%
Type C	14	14.9%	71.43%

Table 3:Skeletal and extraskeletal associated injuries with each fracture type

	Intracranial injuries		Chest injuries other than rib cage fractures		Abdomen and pelvis visceral injuries		Upper, lower extremities & pelvic fractures		Skull & rib cage fractures		Total
Type A	8	22.22%	8	22.22%	11	30.55 %	20	55.55 %	7	19.44 %	36
Type B					2	50%	4	100%			4
Type C			2	20%	3	30%	10	100%	1	10 %	10

■ Isolated thoracic and lumbar spine fractures
■ Those with associated injuries

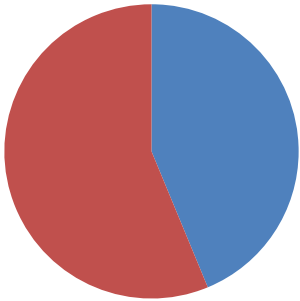


Figure: Isolated thoracic and lumbar spine fractures & those with associated injuries

Conclusion

- Associated injuries were found in 52 (55.32%) patients which indicates the importance of the problem of the poly trauma patients and its impact on the society where 19 (36.59%) patients had more than two associated injuries with thoracic and lumbar spine fractures.
- Patients with spine fractures are of outmost importance and must have the ultimate priority for surgery preparation and urgent fixation for fear of developement of neurological injury due to delayed fixation.