



THORACOLUMBAR FRACTURES: SHOULD THEY BE OPERATED ACCORDING TO THORACOLUMBAR INJURY CLASSIFICATION AND SEVERITY SCORE (TLICS)?

TORAKOLOMBER KIRIKLAR: TORAKOLOMBER YARALANMA VE DERECELENDİRME SKOR SİSTEMİNE (TLICS) GÖRE AMELİYAT EDİLMELİ MİYDİ?

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SUMMARY:

Objective: The aim of the study is to evaluate patients who were operated for thoracal and lumbar fractures were match up with the thoracolumbar injury classification and severity score (TLICS) surgical criterias.

Materials and Method: We inspected 38 patients who were operated for thoracal and lumbar fractures between June-2014 and June-2016 at Dr. Lütfi Kırdar Kartal Training and Research Hospital Neurosurgery Clinic. The informations were collected from the patients file archives rethrospectively. We calculated the TLICS scores of the operated patients and evaluated that surgery decision was correct or not according to TLICS.

Results: We inspected 17 female and 21 male patients. 13 patients were operated for thoracal and 25 patients were operated for lumbar fractures. According to TLICS scores 17 patients(44.7%) calculated as surgical, 15 patients(39.4%) as surgeon's choice and 6 patients(15,7%) as non-surgical of total 38 patients.

Conclusions: TLICS focuses on three important aspects of thoracolumbar fractures and may be useful to choose conservative treatment or surgery according to the final score. The non-surgical treatment recommendation for the TLICS scores has limitations in some patients who may need to receive operative treatment in the future because of a progressive symptomatology.

Key Words: Thoracolumbar fractures, TLICS, Burst fractures.

ÖZET:

Amaç: Çalışmamızın amacı iki yıl içerisinde yapılan torakolomber kırık ameliyatlarının TLICS skorlamasına göre ameliyat kriterlerine uygun olup olmadığının analizini çıkartmaktır.

Materyal ve Metod: Haziran-2014 ile Haziran-2016 tarihleri arasında Dr.Lütfi Kırdar Eğitim ve Araştırma Hastanesi Nöroşirurji Kliniğinde torakolomber kırık ameliyatı yapılmış 38 hasta retrospektif olarak incelendi. Ameliyat edilen hastaların TLICS skorları hesaplanarak ameliyat kriterlerine uygun olup olmadığı karşılaştırıldı.

Sonuçlar: 17 kadın ve 21 erkek hasta incelendi. 13 hasta torakal, 25 hasta ise lomber kırıkta ameliyat edilmişti. Toplam 38 hastada TLICS skorlarına göre 17 hasta (% 44.7) cerrahi karar, 15 hasta (% 39.4) cerrahin kararına bırakılmış ve 6 hasta (% 15,7) ise cerrahiye gerek yok olarak sınıflandırılmıştır.

Çıkarım: TLICS torakolomber kırıkların önemli üç noktasına odaklanarak final skora göre konservatif tedavi ile cerrahi tedavi arasında seçim yapmaya yardımcı olmaktadır. Cerrahi olmayan tedavi önerilen TLICS skor değerlerinde bazı hastalarda gelecekte semptomların progresyon gösterebileceği sebebi ile kısıtlı kalabilmektedir.

Anahtar kelimeler: Torakolomber kırıklar, TLICS, Patlama kırıkları.

Kanıt Düzeyi: Retrospektif klinik çalışma, Düzey III

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INTRODUCTION:

The thoracolumbar spine is the most common site of spinal fractures on account of its location on a junction of spinal biomechanics, furthermore, up to 20 % of all thoracolumbar injuries are burst fractures¹. Given this substantial morbidity and mortality, various recommendations for medical decision-making have been made for the treatment of thoracolumbar trauma¹³.

Vaccaro et al proposed a new classification of thoracolumbar injuries that considered the neurologic status, and the authors proposed an injury severity score that could help surgeons in the decision making process¹⁴. The Thoracolumbar Injury Classification and Severity Score System (TLICS) is based upon three critical injury characteristics; the morphology of the injury determined by the radiologic patterns, the integrity of the posterior ligamentous complex and the neurologic status of the patient¹⁴. The final calculated score can be utilized to guide conservative (<4 points) or surgical treatment (>4 points), whereas a score of 4 points can be managed according to surgeon's preference¹⁵.

TLICS is a theoretical proposal to help management of the thoracolumbar traumas. The purpose of our study is to

compare our surgery decisions with TLICS based upon our rethrospective cases.

MATERIALS AND METHODS:

We inspected 38 patients who were operated for thoracal and lumbar fractures between June 2014 and June 2016 at Dr.Lütfi Kırdar Kartal Training and Research Hospital Neurosurgery Clinic. The informations were collected from the patients file archives rethrospectively. Radiological data were inspected from the PACS system. We calculated the TLICS scores of the operated patients and evaluated that surgery decision was correct or not according to TLICS (Table-1).

RESULTS:

17 female and 21 male patients were evaluated. 13 patients were operated for thoracal and 25 patients were operated for lumbar fractures. According to TLICS scores 17 patients (44.7 %) calculated as surgical, 15 patients (39.4 %) as surgeon's choice and 6 patients (15.7 %) as non-surgical of total 38 patients (Table-2).

Table-1. Thoracolumbar injury severity score system (TLICS).

		TLICS 3 INDEPENDENT PREDICTORS		
1	Morphology Immediate stability	<ul style="list-style-type: none">• Compression• Burst• Translation / Rotation• Distraction	1 2 3 4	Radiographs CT
2	Integrity of PLC Long term stability	<ul style="list-style-type: none">• Intact• Suspected• Injured	0 2 3	MRI
3	Neural Status	<ul style="list-style-type: none">• Intact• Nerve root• Complete cord• Incomplete cord• Cauda equina	0 2 2 3 3	Physical examination
	Predicts	Need for surgery	0-3 4 ≥ 5	Non-surgical Surgeon choice Surgical

Table-2. Thoracal and lumbar fractures classified according to TLICS score and surgical decision criterias.

Gender	Age	Fracture Level	TLICS Score	TLICS Decision
F	51	T12	10	Surgical
F	41	L2	7	Surgical
M	35	T5	4	Surgeon's Choice
M	46	L1	5	Surgical
F	20	L3	9	Surgical
F	61	L1-L3	6	Surgical
F	69	L1	4	Surgeon's Choice
M	52	L3	7	Surgical
M	45	T10	10	Surgical
F	25	L1	3	Non Surgical
M	57	L3	5	Surgical
F	52	L1	5	Surgical
F	67	L1	5	Surgical
M	26	L2	5	Surgical
M	62	L3	3	Non Surgical
M	52	L3	4	Surgeon's Choice
M	18	L1	3	Non Surgical
F	49	L2	3	Non Surgical
M	61	L4	4	Surgeon's Choice
M	57	L3	4	Surgeon's Choice
F	58	T12	4	Surgeon's Choice
F	68	L1	5	Surgical
M	47	T11	4	Surgeon's Choice
M	63	L1	7	Surgical
M	66	T12	4	Surgeon's Choice
M	38	T12	3	Non Surgical
M	44	T12	4	Surgeon's Choice
F	57	L1	7	Surgical
M	26	T12	5	Surgical
F	15	T12	4	Surgeon's Choice
M	74	L1	4	Surgeon's Choice
F	78	T12	4	Surgeon's Choice
F	61	L1	3	Non Surgical
M	71	L1	4	Surgeon's Choice
M	46	T12	5	Surgical
M	58	L4	6	Surgical
F	36	T12	4	Surgeon's Choice
F	18	L1	4	Surgeon's Choice

DISCUSSION:

An ideal spine injury classification system is able to both guide treatment and facilitate clear communication between the surgeons, researchers, and trainees. Early classifications such as the Denis classification and Magerl classification described the thoracolumbar spine and were later extended to describe cervical spine injuries^{2,9}.

Spine Trauma Study Group develop an algorithm to guide the clinical decision between operative treatment and conservative treatment. TLICS is using a numerical scoring system derived from the injury morphology, posterior ligamentous complex integrity and neurological status¹⁴. It is the first quantitative scoring system that can be used as a practical algorithm to orient the clinical decision-making between conservative and surgical management and some reports have shown this classification to be both valid and reproducible^{4,10-11}.

Specifically, although the need for early decompression in patients with an injury leading to a neurologic deficit in the thoracic and lumbar spine is clear, the role for an urgent formal decompression in fractures at the lumbosacral junction is debated³.

When we review the literature we recognised that TLICS had inconsistencies with the treatment of burst fractures without neurologic deficits as our study⁵⁻⁸. Fifty five percent of our patients were operated for stable burst fractures but 15.7 % of them were described as non-surgical according to TLICS. Reasons for the inconsistencies may be different surgical indications for treatment of stable burst fractures like loss of vertebral body height and kyphosis¹². The TLICS did not consider any one of these factors for guiding surgical treatment.

TLICS focuses on three important aspects of thoracolumbar fractures and may be useful to choose conservative treatment or surgery according to the final score. The non-surgical treatment recommendation for the TLICS scores has limitations in some patients who may need to receive operative treatment in the future because of a progressive symptomatology.

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