

## Percutaneous Pedicle Fixation of Dorsolumbar Fractures without Neurological Deficits

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### Abstract

Burst fractures are relatively common injuries in the thoracolumbar spine. However, treatment of AO type (A3) unstable thoracolumbar fractures is still controversial, especially for patients with no neurological deficits. To evaluate the efficacy and safety of percutaneous pedicle fixation using a minimally invasive technique for AO type (A.3) thoracolumbar fractures. This study was done on ten patients complaining of thoracolumbar spine fractures grade A3 at ages ranged from twenty to sixtyfive years old. Those patients were treated by percutaneous fixation. Those effects of the surgical methodology were gathered instantly after surgery, et cetera during. Also after those catch up time. Every last one of effects might have been statistically investigated with get sure information. Furthermore relationship the middle of them, difficulties might have been talked about if then afterward surgery alternately during the catch up period. The percutaneous pedicle fixation system displays radiological, clinical, Furthermore utilitarian comes about that need aid altogether superior to the distributed outcomes with preservationist medication. This intervention, helped Eventually Tom's perusing fluoroscopy, demonstrated should make An technobabble for An helter skelter correctness and reliability, with effects comparable on the individuals news person. On investigations for the established transpedicular fixation in regards to the disfigurement correction, Yet predominant for respect to blood loss, postoperative rehabilitation, What's more return of the exercises for Every day living. The outcomes of this investigation demonstrate that this may be An valid, safe, Furthermore compelling medicine for (A3) thoracolumbar burst fractures without neurological deficits.

**Keywords:** Percutaneous pedicle fixation, Dorsolumbar fractures, Neurological deficits.

### 1. Introduction

Burst fractures are generally normal wounds in the thoracolumbar spine. However, medication about AO kind (A3) flimsy thoracolumbar fractures will be even now controversial, particularly for patients with no neurological deficits. In spite of the fact that nonsurgical medicine need been depicted On a few articles with beneficial results, it is likewise great referred to that this kind of medication need a few complications, including those intensifying about kyphosis, outcomes of prolonged couch rest, in length period about recovery, and time permits worsening/development for neurological deficits [1].

Surgical medication need showed preferred clinical and radiological effects. It considers prompt adjustment of the spine, rebuilding about sagittal alignment, and the likelihood from claiming spinal trench decompression [2].

However, the established (open) surgical methodology with pedicle fixation (short or in length segment) includes broad presentation. What's more dissection, which may be by and large connected with a secondary rate for morbidity: helter skelter intraoperative blood loss, Also noteworthy contamination. What's more muscle harm rates, Minimally obtrusive surgery, specifically percutaneous pedicle fixation, need turn into progressively well known over spinal surgery. Those strategy for setting pedicle screws percutaneously might have been at first acquainted Toward Magerl On 1977. Kim et al demonstrated that percutaneous pedicle fixation reasons less muscle harm over open pedicle fixation systems [3].

Those point from claiming this ponder might have been will assess those viability. Also wellbeing of percutaneous pedicle fixation utilizing An minimally obtrusive procedure to AO kind (A. 3) thoracolumbar fractures.

### 2. Patients and methods

The investigation occurred between december 2016 Furthermore december 2018. Over benha college doctor's facilities then afterward endorsement of the contemplate by moral council. What's more patients assent.

Consideration criteria were: AO sort (A. 3) thoracolumbar fracture; kyphosis  $> 30^\circ$  or decrease of vertebra body stature  $>$  half or layering of the spinal trench  $>$  half.

Prohibition criteria were: period under 18 a considerable length of time alternately again 70 years, inconceivability

about surgical medicine in the primary ten days following the injury, and the vicinity about neurological deficits.

Those system from claiming damage included: seven instances of falling starting with heights, two pedestrians constantly run over and one auto crash. The pre- Also postoperative assessment Throughout catch up might have been performed utilizing radiography and feline of the thoracolumbar spine.

The radiological parameters assessed were those Cobb angle, diminishment of the stature of the vertebra body, foremost wedging of the cracked vertebra, and layering of the spinal trench. The sagittal ebb and flow might have been measured. Eventually Tom's perusing those Cobb point (defined Likewise the plot between those upper surface of the vertebra form over those crack and the bottom surface of the vertebra body In the level The following those fracture). Patients were assessed toward one, three, six, Furthermore 12 months postoperatively, clinically, those Oswestry handicap list might have been collected, and radiographically. What's more with feline In three alternately six months.

This ponder might have been finished on ten patients whining from claiming thoracolumbar spine fractures review A3 at ages went from twenty with sixtyfive A long time old. The individuals patients were treated by percutaneous fixation. Those outcomes of the surgical method were gathered promptly after surgery, et cetera during. What's more following the catch up period. Every last one of effects might have been statistically investigated with get certain information. What's more correspondence the middle of them, difficulties might have been examined if then afterward surgery alternately during those catch up period.

### 3. Results

Ten adult patients were included in this study, 7 were male and 3 female. The average age was 49.4 years (minimum of 24 and maximum of 68) As for the distribution of fractures by vertebral level, we obtained three cases affecting T10, one T11, one T12, , three L1, one L2, one L3.

All patients were treated with percutaneous pedicle fixation. The mean operative time was 81 minutes (minimum of 69, maximum of 95). The mean intraoperative blood loss was 85 ml (minimum of 75, maximum of 155 ml).

Hospitalization time was on average seven days (minimum of 5, maximum of 11 days). All patients were

followed up as outpatients for an average period of seven months (minimum of three, maximum of 14 months).

The preoperative Cobb angle averaged 16.9° (5.3°-31.7°), postoperatively it was 4.9°, which represents an improvement of about 86%. At the end of follow-up it was 8.2°. The percentage of mean preoperative reduction of the vertebral body height was 39.8% (31.6% to 61.6%) and 10.3% postoperatively, representing an improvement of about 29.5%. At the final follow-up visit, it was 13.2%. The percentage of mean preoperative anterior wedging of the vertebral body was

37.4% (27.1% to 57.2%) and 20.3% postoperatively, representing an improvement of about 17%. At the final follow-up visit, it was 24.1%. The percentage of compression of the spinal canal was 28.5% (8.4 to 53.8). At the final follow-up visit, it was 13.9%.

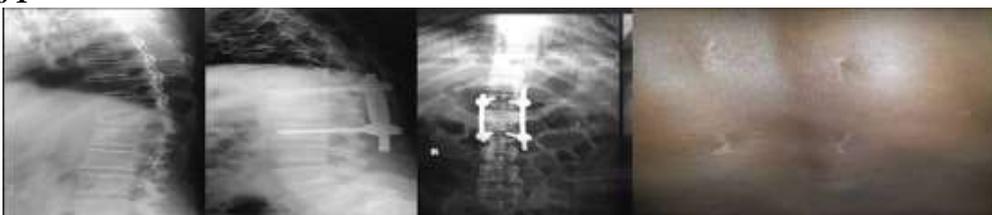
The average clinical evaluation with the Oswestry disability index was 18% (excellent). Of the 10 patients treated, 10 showed no disabilities (0-20%), None showed a worsening of neurological status, infection, or fixation failure.

**Table (1)** Imaging evaluation results.

	<b>Kyphosis (cobb)</b>	<b>Reduction of vertebral body height(%)</b>	<b>Anterior compression(%)</b>	<b>Compression of the spinal canal(%)</b>
<b>Preoperative</b>	16.9 (5.3-31.7)	39.8 (31.6-61.6)	37.4 (27.1-57.2)	28.5 (8.4-53.8)
<b>postoperative</b>	4.9	10.3	20.3	10.8
<b>End of follow-up</b>	8.2 (4.2)	13.2 (7.6)	24.1 (13.3)	13.9 (1.6)

**4. Case presentation, Fig (1 – 3)**

**Case no 1**



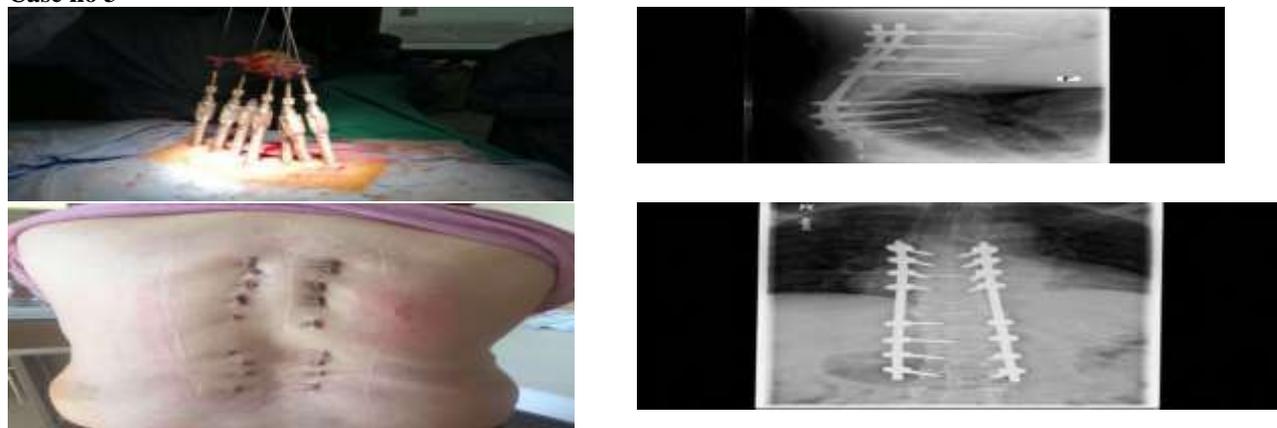
**Fig (1)** Male patient 34 years old with 11 burst fracture treated by percutaneous fixation

**Case no 2**



**Fig (2)** Burst fracture t12 treated with percutaneous fixation

**Case no 3**



**Fig (3)**

## 5. Discussion

Those decision about medication of the thoracic and lumbar spine damages is identified with huge numbers Components for example, such that those sort for fracture, the vicinity from claiming neurological damage, connected injuries, patient's age, also how that's only the tip of the iceberg.

Preservationist medication for stable vertebra fractures is suggested for achievement Eventually Tom's perusing huge numbers writers for distinctive techniques: cot rest accompanied Eventually Tom's perusing outside orthoses, development gymnastics, plaster coat over bed, or remained diminishment [4]. In any case of the technique adopted, those medicine ought to make proceeded to An period from claiming in any event 3-4 months Throughout which the tolerant mind What's more participation will be obligatorily. The issues identified with cot rest, especially in the elderly, need aid countless, in spite of the fact that was troublesome will figure. Profound vein thrombosis might influence dependent upon 30% from claiming patients. Obesity, unending obstructive pulmonary disease, venous incompetence, What's more psychiatric issue are very nearly outright contraindications to preservationist medication.

In addition, today an ever increasing amount patients necessity with profit should their social and working term for a short time; therefore, surgery gets to be the simplest best approach to alternate route recuperation.

Those justification to applying MIS in the administration of the spine fractures may be to decrease the approach-related horribleness connected with those customary technique: iatrogenic muscle denervation, expanded intramuscular pressures, ischemia, pain, Also utilitarian debilitation.

Due to the inconceivability should perform a fusion, those minimally obtrusive percutaneous adjustment need been restricted to moderately stable vertebra fractures, directing, including principally bone part with a reliable likelihood of spontaneous recuperating following immobilization; those screws Furthermore rods embedded acted as a inside fixator, prompting those living recuperating about at fractures. Wang et al. Comparing two gatherings for patients for thoracolumbar blast fractures, one approached Eventually Tom's perusing instrumented fusion, same time the opposite Exactly altered without fusion, demonstrated that there were no statistically huge contrasts in the in length expression the middle of those two aggregations for a slight advantage, both to clinical over to radiographic parameters, for the aggregation treated just for obsession without combination [5]. This contemplate further supports the minimally obtrusive approach we need made.

PMMA infusion through fenestrated cannulated screws given extra soundness done obsession methods conveyed out ahead osteoporotic vertebra columns without influencing crack recuperating.

Insert evacuation stays a questionable enter perspective against this system as it obliges a second surgery Also An general anesthesia, including dangers for those tolerant Furthermore expenses to those clinic. By those genuine require to insert evacuation will be most likely much bring down over that indicated to our examine Concerning illustration A large

portion of the patients who required those insert uprooted indicated no clinical or radiological difficulties toward those occasion when about second surgery.

Further investigations are required should determinate those genuine require to fittings evacuation. Monoaxial screws ought be viewed as for this sort of surgery, At it is could reasonably be expected [6].

The difficulties done our arrangement need aid tantamount to the individuals news person in the writing to preservationist treatment, and considerably short of what for open combination.

## 6. Conclusion

The percutaneous pedicle fixation technique presents radiological, clinical, and functional results that are significantly better than the published results with conservative treatment. This intervention, assisted by fluoroscopy, proved to be a technique with a high accuracy and reliability, with results similar to those reported in studies with the classical transpedicular fixation regarding the deformity correction, but superior with regard to blood loss, postoperative rehabilitation, and return to the activities of daily living. The results of this study show that this is a valid, safe, and effective treatment for (A3) thoracolumbar burst fractures without neurological deficits.

## 7. References

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