

Back Pain in Active Duty United States Military

- Incidence rate of low back pain was 40.5 per 1000 person-years.
- Women, compared with men, had a significantly increased incidence rate ratio for low back pain of
- 1.45.
- The incidence rate ratio for the 40 + age group compared with the 20 to 29 years of age group was 1.28.
- Each service, when compared with the Marines as the referent category, had a significantly increased incidence rate
- Army: 2.19, Navy: 1.02, and Air Force: 1.54.
- Compared with single service members, significantly increased incidence rate ratio for low back pain were seen in married service members: 1.21.
- SPINE Volume 36, Number 18, pp 1492–

Spine arthrodesis:

SPINE Volume 27, Number 22, pp 2555–2562

- 1. A successful fusion does not always correlate with a successful clinical result.
- 2. >4mm of translation; >10° of angular motion may suggest segmental mechanical dysfunction. Although many surgeons rely on these guidelines, there is no data that clearly links pain with instability.
- 3. Degenerative spondylolisthesis: Fischgrund : randomized into pedicle screw instrumentation or noninstrumented groups. Successful arthrodesis occurred in 82% of the instrumented cases, as compared with 45% of the noninstrumented. Interestingly, although instrumentation significantly improved the fusion rates, the clinical outcomes between the two groups were similar.
- 4.

Painful Degenerative Disc Disease and Discogenic Pain

Crock postulated that the most likely cause of chronic low back pain is internal disruption of the disc.

Discography can provide useful information about discogenic pain, but the results must be interpreted carefully.^{8,26,46,97,101}

The most common indication for reconstructive surgery in patients with painful degenerative disc disease is disabling low back pain. These patients' pain typically is mechanical as well as load and sitting intolerant, and often is worse with activity.

Successful clinical outcomes in these studies range from 45% to 90%. Whereas 63% of the surgical group rated themselves as "much better" or "better," only 29% in the nonsurgical group

- Consideration of fusion for patients with discogenic syndromes remains controversial and, as always, careful patient selection is critical. For most spine surgeons, a posterolateral fusion is a useful and relatively familiar arthrodesis procedure.
- ALIF allows for more extensive and complete disc excision with less risk to the nerve roots and dura. Complications related to the anterior approach include vascular injury and In addition
- To the diagnostic workup to identify the pain generators, the surgeon should carefully consider any psychological risk factors that may be active in a surgical candidate.

Thoracolumbar fracture with late kyphosis

1. Eur Spine J (2008) 17:1073–1095
2. Eur Spine J (2004) 13 : 101–107
3. Eur Spine J (2007) 16:1925–1933
4. Cochrane Database Syst Rev. 2006 Oct 18;(4):
5. J Bone Joint Surg Am. 2003 May;85-A(5):773-81.

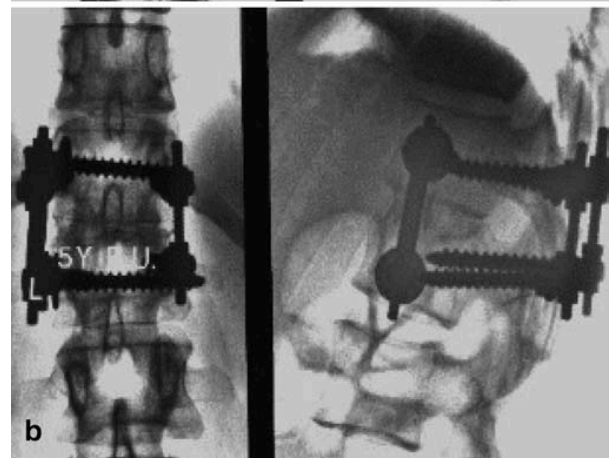
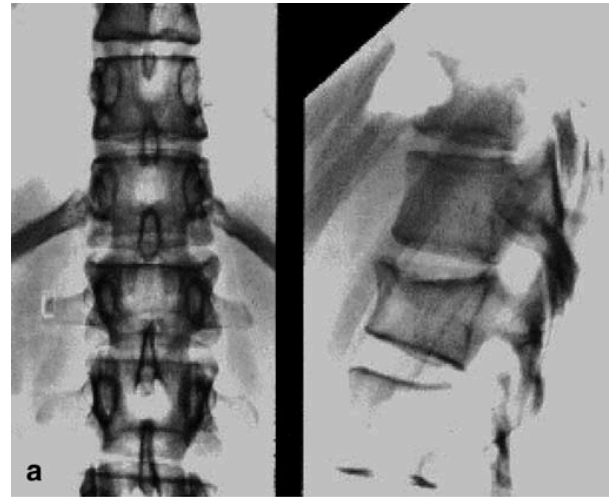
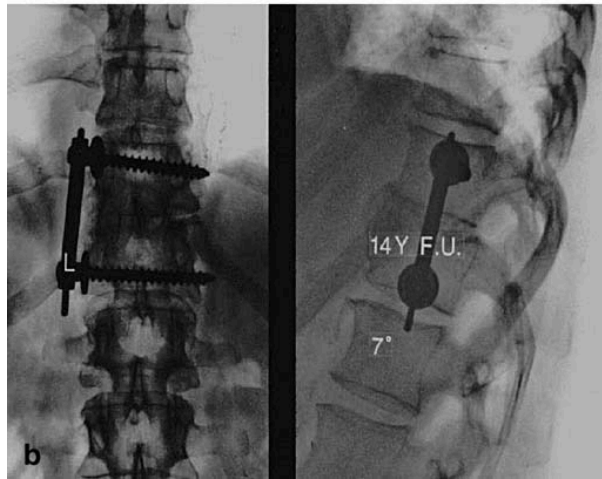
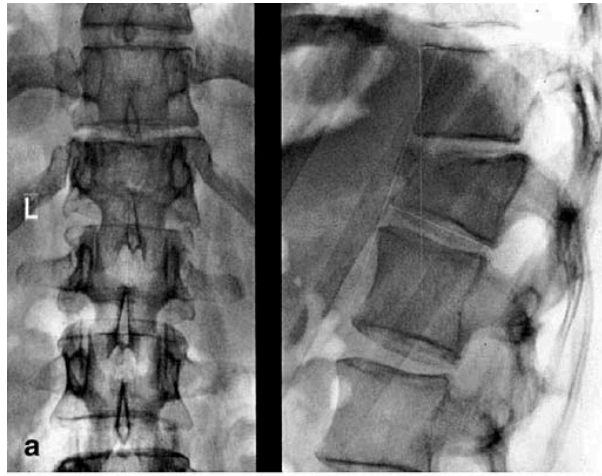
- There is an increasing consensus that surgery is indicated for patients with neurological deficit and/or three-column injuries
- Therapeutical concepts include nonsurgical treatment for A1.2/A3.1 fractures with <15 of kyphosis
- Anterior-only and combined surgery in A3.1 and 3.3 fractures, respectively [41], or if kyphosis <20
- Anterior + Posterior surgery: anterior column collapse >50% or kyphosis > 20

- Casting was judged useful for initial pain control; it allows for early mobilization. Nevertheless, because of the mechanical limits of external orthosis, collapse of the vertebra is not prevented
- Outcome was excellent or good in 66%, and 62% in the current series. However, 34% of their series and 38% of the current had a fair or poor outcome.
- There was a strong correlation between age and a decreased outcome in terms of the VASSpine- Scores in the TLB burst fractures.
- Weinstein et al. [95] reported on minimal or no pain in 72% of 42 patients 20 years after burst fractures at T10–L5. Advanced pain was present in 28% of patients and 57% of patients never achieved painlessness. Spine 13:33–38.

- The authors demonstrated that the global spine adjusted for the local posttraumatic kyphotic deformity within the ranges dictated by the spinopelvic geometry.
- The current findings and review of literature suggest that from an anatomical standpoint, the ideal treatment of the more severely-crushed burst fractures (LSS C6 points) is complete kyphosis correction with long-term correction maintenance
- Can result in a gradual but persistent loss of function that may lead to the development of chronic complications over time
- Whether long-standing sequelae, such as muscle fatigue and capsular insufficiencies with burned-out adjacent-level adaptabilities might be associated with a measureable spinal imbalance and alteration of the sagittal curve of the fractured spine is yet to be answered.

Eur Spine J (2004) 13 : 101–107

- The surgical management of post-traumatic thoracolumbar kyphosis remains controversial.
- It is concluded that in cases of post-traumatic thoracolumbar kyphosis after simple type A fractures, mono-segmental correction using an anterior procedure alone, with spondylodesis, is the surgical procedure of choice.



- 1. Post-traumatic deformities can be observed with both conservative and inadequate surgical treatment of spinal injuries. The deformity is often associated with pain.
- 2. The pain may emanate from the site of the deformity itself, the injured disc level, a bony nonunion, or from the lordotic compensation above and below the deformity site, where added stresses are placed on the respective facet joints.
- 3. In patients with associated neurological complications, posttraumatic tethered cord due to dural adhesions, myelo-degeneration and post-traumatic syringomyelia can cause severe pain
- 4. The kyphosis is often fixed and rigid, and correction is difficult. In the presence of healed and contracted anterior soft tissue. Finally, the spinal cord cannot be adequately decompressed through the posterior approach

Eur Spine J (2007) 16:1925–1933

- On the basis of biomechanical considerations such as the load sharing concept and tension band principle, reconstruction of the anterior column with dorsal compression osteosynthesis instrumentation is the treatment of choice
- Complete correction of the deformity, reaching the neutral position or a mild lordosis, was the goal of surgery.

- In summary, patients with traumatic injuries of the thoracolumbar spine studied in this investigation suffered from a reduced QoL compared to healthy controls.
- Most of the patients were rather able to return to their previous jobs even after severe and unstable injuries requiring extensive combined posterior and anterior surgery.
- Overall, severity of injury determined the kind of treatment in our study and by this, prognosis and outcome.

Cochrane Database Syst Rev. 2006 Oct
18;(4):

- There was no statistically significant difference on the functional outcome two years or more after therapy between operative and non-operative treatment for thoracolumbar burst fractures without neurological deficit.

J Bone Joint Surg Am. 2003 May;85- A(5):773-81.

- In the operative group [N=24]
Fracture kyphosis was 10 degrees at the time of admission and 13 degrees at the final follow-up evaluation.
The average canal compromise was 39% and it improved to 22%
- In the nonoperative group (N 23),
the average kyphosis was 11.3 degrees and 13.8 degrees at the final follow-up examination after treatment.
The average canal compromise was 34% at the time of admission and improved to 19% at the final follow-up examination.
- We found that operative treatment of patients with a stable thoracolumbar burst fracture and normal findings on the neurological examination provided no major long-term advantage compared with nonoperative treatment.