Abstract

Acute traumatic spondylolisthesis of the lumbar spines is a rare condition. Its incidence and prevalence, thus, cannot be exactly estimated. This study was a report of this condition. A male patient was injured from falling object. Pain, deformity at lumbosacral region and paraparesis were presented. Plain radiographic study showed 75% anterior translation of L5-S1 spondylolisthesis. Operation was performed by surgical open reduction by posterior approach of lumbosacral spine and then maintained reduction using pedicular screw instrumentation. Decompressive laminectomy and posterolateral fusion were performed for nerve root decompression. Intraoperative and early postoperative complications were not reported. Postoperative plain radiographs had remained 25% of anterior translation of L5-S1. After six months, the patient was clinically improved.

Keyword: case report, acute traumatic spondylolisthesis
Introduction
Traumatic spondylolisthesis is a rare condition\(^1\text{-}^6\), and mostly caused by the high energy trauma. The diagnosis can be delayed in many of the cases due to the concern of other injured organs. Thus, its incidence and prevalence are relatively difficult to estimated\(^1\text{-}^2,^6\). Traumatic spondylolisthesis was firstly documented and reported in 1940 by Watson-Jones\(^3\). However, up to present, the number of case report is relative scant\(^7\text{-}^{14}\).

Clinical features
A case of Thai male patients aged 53 years old lived in Khon Kaen presented with history injured from falling object. At initial evaluation, he had severe pain on his back with deformity of the vertebrae. He felt numbness and had weakness on this both legs. The physical examination revealed contusion on his back as shown in Figure 1. Level of motor power was 2/5 in his right leg and 4/5 on his left leg. He lost his sensation on both feet. Anal sphincter tone was intact. This indicated the condition of incomplete cauda equina syndrome. From the chest x-ray, right hemothorax was presented. Intercostal drainage was undertaken immediately afterward.

Radiographic findings
Plain radiograph of lumbosacral spine showed the anterior dislocation of L5-S1 spondylolisthesis approximately 75%, see Figure 2 with the right twitch of the L5 as shown in Figure 3. Computed tomography revealed a fracture of right lamina and pedicle of L5 as shown in Figure 4.

Treatment and treatment outcomes
The patient underwent surgical operation in the seventh day of admission after stabilization of other organ system. The operation was posterior approach under the general anesthesia aims to reduce and align his spine using the pedicular screw instrumentation with decompressive laminectomy and posterolateral fusion. The total operation time was 3.5 hours and total blood lost was 1,500 ml with no complication.

No complication was observed afterward during the admission. Motor power in his lower
extremities was still similar to that found initially as well as his sensation. From the Figure 5, it shows the new alignment of the spine, however, 25% dislocation of the spines would be observed. On the day fifth after the operation, his pain was relieved. The lumbo-sacral brace was used and wheelchair ambulation was encouraged. He was discharged on the eighth day after the operation. At the one-month follow up, Operative wound was healed. Motor power of the extensor hallucis longus was improved to the level of 4/5 on his right foot and the motor power of his left foot rose to the level 5/5. However, he still needed the wheelchair. At the three-month follow up, no increase of his motor power in the lower extremities was observed. At this time, he was able to walk using the axillary crutches. No complication was noted. After that, the patient was lost to follow up.

Figure 4: Computed tomography of the lumbo-sacral spine

Figure 5: Radiographic findings after the operation; postero-anterior and lateral views
Discussion and conclusion

Traumatic spondylolisthesis was a rare condition with relatively high of neurological involvement as much as 68.4% of the case. Conservative treatment usually has poor prognosis as the treatment can no stabilize the spine. Thus, in previous studies, open reduction with instrumentation with laminectomy was suggested. However, there were some studies gave the positive result of the conservative treatment. In the present case report, the case was categorized as Grade III with instability of the spine more than 50%. Thus, he was underwent the posterior open reduction and laminectomy with instrumentation and posterolateral fusion with the good results till his three-month follow up after the operation.

References