

POSTTRAVMATİK SERVİKAL SPONDİLOPTOSİS  
"OLGU SUNUMU"POSTTRAUMATIC CERVICAL SPONDYLOPTOSIS  
"CASE REPORT"

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**ÖZET:** Spondiloptosis, spondilolistesisin en ileri şeklidir ve subaksiyal servikal bölgede çok nadirdir. Literatürde günümüze kadar servikal spondiloptosis'li sadece 2 olgu bildirilmiştir. Bu çalışmada, travma sonrası C3-4 mesafesinde spondiloptosis gelişmiş, nörolojik bulgusu olmayan 67 yaşında bir erkek olgu sunulmaktadır. Olgu anterior ve posterior kombine cerrahi yaklaşımla tedavi edilerek 3 ay halo fiksasyon ortezi ile tespit edilmiş ve takibinde füzyon sağlanmıştır.

**Anahtar Kelimeler:** Servikal travma, Servikal spondiloptosis, Spinal füzyon, Spondilolistthesis.

Spondylolisthesis is commonly seen at lumbar spines rather than cervical. Degenerative and often congenital abnormalities are responsible in the occurrence of cervical spondylolisthesis (1,2,3,4,5,6). Unilateral or bilateral pedicle defects, dysplasia of the posterior articular process, spina bifida, unilateral or bilateral laminar defects etc., may be seen as congenital malformation. Degenerative spondylolisthesis commonly occurs at C3-C5 levels (1,3). Spondyloptosis is the most excessive form of spondylolisthesis and accepted as grade V spondylolisthesis (7). Spondyloptosis is extremely rare in subaxial cervical spine. Traumatic spondylolisthesis commonly occurs at the axis producing the hangman's fracture by axial loading with extension. In the literature, only 2 cases of cervical spondyloptosis are reported in subaxial cervical spine, according to our knowledge (8,9).

**CASE**

A 67-year-old man, who had fallen down from a tree was admitted to a local hospital with neck pain. He was transferred to our hospital after 8 days with diagnosis of C3-C4 spondyloptosis. He suffered from posteriorly

located neck pain. Immediate examination revealed few neurologic sign.

Cervical plain graphs (Figure I), and Computerized Tomography (CT) (Figure II), are disclosed grade V, C3-C4 anterior spondylolisthesis. Corpus of C3 was totally in front of C4 and seen together at the same level. Posterior elements were fractured and facet joints were locked bilaterally. As a result, all cervical lines were completely interrupted on C3-C4 level. Magnetic Resonance Imaging (MRI) was avoided due to cervical instability.

Gardner- Wells skeleton traction was applied with 2,5 kg, immediately after admission. No radiological change was seen shortly after cervical lateral X-rays were obtained. Therefore traction weight was increased to 5 kg. Sensory motor symptoms (paresthesia and 3/5 muscle strength) were appeared after this traction, mostly prominent at the proximal site of the left upper extremity. The traction was reduced to 2.5 kg. again. The day after, C3 laminectomy and C2-C4 posterior sublaminar wiring with bilateral bone fusion were performed. After this operation, C3-C4 dislocation was decreased to a grade I spondylolisthesis. Traction was maintained with 2.5 kg. Sensory motor signs were gradually disappeared early after the operation with decompression of the relevant root. Seven days after initial operation, C3-C4 discectomy, anterior interbody fusion and Caspar plating with autogenous bone graft from anterior superior iliac crest were performed (Figure III). Left upper paresthesia was completely disappeared within two days. Halo fixation

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Figure I: Lateral cervical radiogram was disclosed grade V, C3-C4 anterior spondylolisthesis.

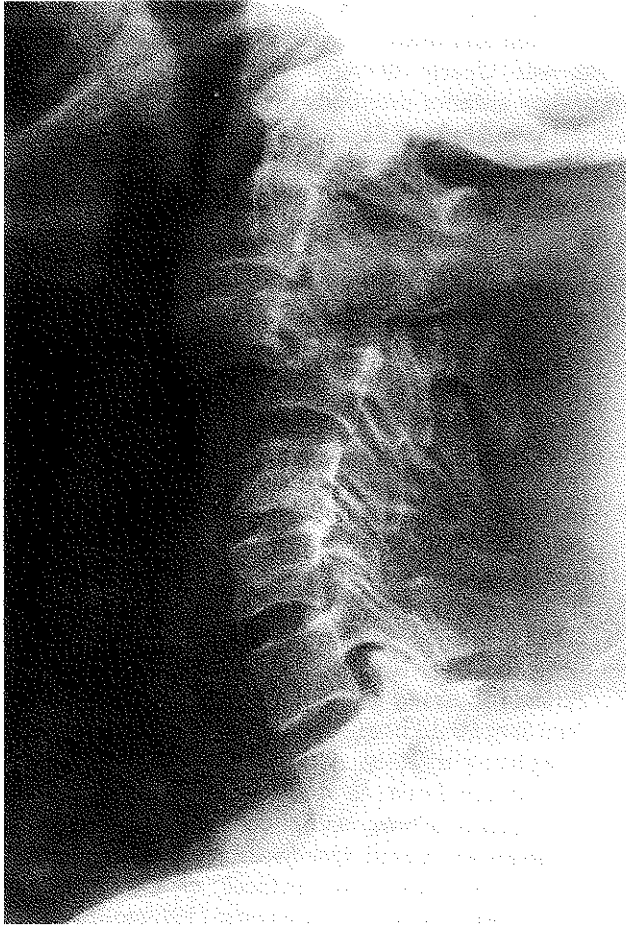
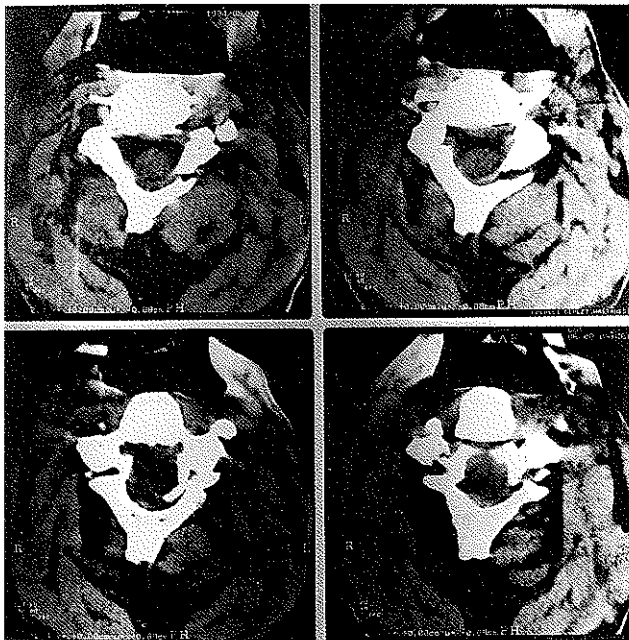


Figure II: Laminar fracture of C3 and bilateral locked facet joints were seen on CT at the level of C3-C4. Corpus of C3 was totally in front of C4 and seen together at the same level.



device was applied after the second operation. Patient was discharged after 10 days without any neurologic sign. Halo brace was terminated after 3 months. On follow up, complete fusion was achieved after a year.

**DISCUSSION**

The term of spondyloptosis is made of spondylo and ptosis words and is used when the vertebrae slips and falls down totally in front of lower vertebrae from its original anatomical level. This entity could be frequently seen in the lumbar region, but occurrence at the subaxial cervical spine is extremely rare. All ligamenter structures are disrupted of the joint and the osseous construction and an absolute displacement occurred. Consequently, alignment of the spine is discontinued. On lateral x-rays, slipped vertebrae and lower vertebrae seems on a horizontal line and in front of the other. Decompression and reduction of spondylolisthesis may be chosen as an

Figure III: C3-C4 discectomy, anterior interbody fusion with bone graft plus Caspar plating were shown on cervical lateral plain graphs after second operation. Realignment was completely achieved.



initial operation as a method of treatment. Fusion is controversial and is not necessary in every patient decompressed for lumbar spondylolisthesis. Anterior fusion is usually required in cervical spondyloptosis due to posterior fusion and it is not adequate to stabilize the spine. Neurologic monitoring such as SEP and wake-up tests should be performed to avoid neurologic deterioration during decompression, reduction and fusion. Patient should be kept in a cervical brace or halo for 4 to 6 weeks. Bhojraj et al reported a case of C6-C7 spondyloptosis in a child with late onset of cord compression probably due to birth trauma. He has operated his patient with three level corpectomy and bone graft fusion using anterior approach and reported a new clinical entity (9). Amacher also reported a case of C6 and C7 spondyloptosis on T1 and T2 in a child with mild neurologic deficits and there was no known neck trauma (8). Child abuse had been suspected in both of cases.

Injuries that damage the spinal cord are usually burst fractures that produce anterior compression to spinal cord. This kind of fractures occur as a result of axial loading and cause cord compression with neurologic deficits. Spinal cord damage may often result because of the compression of the fractured vertebral bodies. This kind of bone injuries may not be seen in cervical spondyloptosis because the lesion is entirely ligamentary. Stretch injury and ischemic lesions may occur secondary to malalignment.

Our case was completely unstable due to complete disruption of all ligamentary structures involving all three columns. Therefore realignment and stabilization of cervical spine with combined posterior and anterior approach were planned. Posterior approach were chosen as an initial operation because of the anticipation of further progression of neurological findings in spite of striking radiological findings exist. The other reason for posterior approach, was graft dislodgment; that might be occurred if the initial operation was done anteriorly. On

the other hand posterior approach allows the anterior interbody fusion with bone graft fixation. Expediently, dislocation was decreased after sublaminar wiring with bone fusion and obvious reduction was obtained. Spinal canal was clearly decompressed after laminectomy. Secondary anterior interbody fusion with Caspar plating was performed after 7 days and fixation was obtained. Full bone fusion, fixation and normal cervical alignment were achieved after a year.

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