



## INSTRUCTIONAL LECTURES &amp; PANEL PRESENTATIONS

## POSTERIOR LUMBAR INTERBODY FUSION USING LUMBAR ALLIGATOR SPINAL SYSTEM. - VIDEO PRESENTATION-

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Although posterior lumbar interbody fusion (PLIF) using cages is a useful procedure, there are problems in terms of bony fusion in case with cage alone technique. The Lumbar Alligator Spinal System has been developed to serve as an auxiliary immobilization material for this procedure. The Lumbar Alligator Spinal System is composed of two plates positioned on both sides of the spinous process, and a transverse system that connects these plates.

The two plates are connected by combining on the cephalic side. The insides of the plates contain two rows of spikes that bite into the cortical bone and clamp the spinous process. Irregularities on the outsides of the plates are formed to enable the transverse system to engage with the plates and securely hold them in position. When transverse system is composed of two hooks and transverse pin, which engage with the left and right plates, and a nut. There are two types of hooks consisting of a hook incorporated in the transverse pin and a hook into which the nut is inserted. The pin is inserted into the hook and passed through the hook on the opposite side. The transverse system is then completed by tightening this pin with the nut.

**Surgical procedure:** Check the length by aligning the plates with the surgical field. Adjust

the length of the plates by cutting with a cutter. Cut the counter plate to the same length to prepare them for surgery. Make holes at the portion of the interspinous ligaments above the immobilized vertebrae, and pass the L-shaped plate between the spinous processes. pass the counter plate through the hole in the end of the L-shaped plate and clamp the plates about the spinous process of the immobilized vertebrae with the compression pliers. Remove the plate holder, clamp the plates with different compression pliers and remove the lowermost compression pliers for initially installing the transverse system. Make a hole into the interspinous ligaments on the lowermost side and insert the hook with the pin attached into the plate. Pass the hook with the nut attached through the pin from the opposite side and securely insert into the plate. Loosely tighten the nut to temporarily fix the transverse system in position. remove the hook holder and compression pliers. Install the transverse system between the spinous processes of the immobilized vertebrae as well using the same procedure. Apply the transverse compressor to the hooks and after temporarily loosening the nut, apply pressure to bring the two plates together, and then tighten the nut to fix in position. This is then also performed for the other transverse system to complete immobili-

zation. When viewed from the posterior direction, the plates and transverse systems are assembled in the form of a ladder, demonstrating that the spinous process is clamped securely. When viewed from the lateral direction, the immobilized portion can be seen to be immobilizing a dynamically advantageous position relative to flexion extension at the base of the spinous process. Cut of any portion of the pin protruding from the hook. Since this system is com-

pact and is in contact with the row of spinous processes, the degree of impairment of the adjacent spinal muscle is low as compared with pedicle screws and other apparatuses.

As a result of adding the use of the Lumbar Alligator Spinal System, it is possible to increase immobilization strength in the directions of flexion and extension with a low degree of invasiveness a compared with pedicle screw fixation.