

Cross-link



In general, crosslinking devices are simple transverse/placed implants that connect the implants (rod) on one side of the spine to the implants (rod) on the other side. The use of crosslinking devices to provide additional stability to posterior spinal instrumentation constructs is universally accepted.

Traditionally, crosslinking devices have been added to the top and bottom ends of rod constructs to increase biomechanical strength. A drawback to particular crosslinking implants is size - some are bulky. However, low-profile instrumentation is designed to be implanted flatter against a spinal structure - a definite advantage in thinner patients.

A problem with typical 'flat' crosslinking devices is that unless a fair amount of bone is removed from the spinal segment, there is not enough room underneath the device to implant bone graft. Bone graft (e.g. autograft, allograft, BMP) application to the back of the spine is essential for a successful spinal fusion and a good surgical outcome.

A 49-year-old woman who presented 11 years after undergoing an L4-5 decompression and fusion in which a pedicle screw-rod construct with an integrated cross-link was designed to attach onto the pedicle screws. The patient's response at the time to the initial surgery was excellent; however, at the time of presentation 11 years later, she had significant postural headaches, severe neurogenic claudication, and radiculopathy. Imaging revealed canal compression across the instrumented levels and a possible thickened adherent filum terminale. Reexploration of the level revealed a large erosive dural defect with a CSF leak, spinal canal compression, and a thickened filum at the level of the cross-link. To the author's knowledge, such complications have not been reported in literature. The authors discuss this rare complication of spinal fusion and the need to avoid dural compression when cross-links are used ¹⁾.

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Rahmathulla G, Deen HG. Spine fusion cross-link causing delayed dural erosion and CSF leak: case report. J Neurosurg Spine. 2015 Jan 30:1-5. [Epub ahead of print] PubMed PMID: 25635637.

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