MINIMALLY INVASIVE DIRECT THORACIC INTERBODY FUSION (MIS-DTIF): TECHNICAL NOTES OF A SINGLE SURGEON STUDY


Background Minimally invasive direct thoracic interbody fusion (MIS-DTIF) is a new single surgeon procedure for fusion of the thoracic vertebrae below the scapula (T6/7) to the thoracolumbar junction. In this proof of concept study, we describe the surgical technique for MIS-DTIF and report our experience and the perioperative outcomes of the first four patients who underwent this procedure.

Study Design/Setting In this study we attempt to establish the safety and efficacy of MIS-DTIF. We have performed MIS-DTIF on six spinal levels in four patients with degenerative disk disease or disk herniation. We recorded surgery time, blood loss, fluoroscopy time, complications, and patient-reported pain.

Methods Throughout the MIS-DTIF procedure, the surgeon is aided by biplanar fluoroscopic imaging and electrophysiological monitoring. The surgeon approaches the spine with a series of gentle tissue dilations and inserts a working tube that establishes a direct connection from the outside of the skin to the disk space. Through this working tube, the surgeon performs a discectomy and inserts an interbody graft or cage. The procedure is completed with minimally invasive (MI) posterior pedicle screw fixation.

Results The procedure is technically straightforward and overcomes many of the limitations of the current minimally invasive (MI) approaches to the thoracic spine. MIS-DTIF has the potential to improve patient outcomes and reduce costs relative to the current standard of care. We are currently expanding this study to a larger cohort and recording long term outcomes and costs.

Disclosures H. Abbasi: None.

REFRACTORY MULTILEVEL CSF LEAK BY FIBRIN GLUE

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Background and Purpose Epidural blood patch has been the standard of care for treating Cerebrospinal fluid (CSF) leaks that fail conservative management whether it is related to post-dural puncture or spontaneous. The use of fibrin glue and mixed blood/fibrin patches have been described to be effective in multiple reports. However, in many cases of CSF leak, identifying the level(s) of the leak to direct the treatment poses a challenge leading to refractory symptoms post treatment, especially in spontaneous CSF leak. We describe a novel approach for treating refractory CSF leakage using peripherally inserted central catheter (PICC) lines in the epidural space.

Materials and Methods Two patients presenting with recurrent attacks of progressive positional headache (one spontaneous and one post traumatic) were proven by myelograms to be secondary to CSF leak. After failure of conservative management, epidural blood patch was decided.

Results In the post-traumatic patient, epidural contrast extravasation was seen in the ventral epidural space extending between C6 and T4 levels, centered at the T1/T2 disc space with 2 sites of leak suspected at C7/T1 and the other between T3 and T6 level. After 5 unsuccessful attempts of epidural blood and fibrin patches and failed hemilaminectomy with transpedicular repair over a 2-month period, a 4 F sheath was placed at L2/3 level followed by navigation of a diagnostic catheter over a guide wire to the upper thoracic levels, the catheter was then exchanged for a 4F PICC line and 13 cc of fibrin glue was injected all the way from T4 level down to L2/3 level. Following treatment, the patients’ symptoms significantly improved with no further treatment required. In the