Case Report

Transforaminal endoscopic solution to disk herniation post-mini-TLIF: Case report

Albert E. Teliean

Department of Neurosurgery, Rhode Island Hospital, The Warren Alpert Medical School of Brown University, Providence, USA

ARTICLE INFO

Article history:
Received 15 September 2014
Received in revised form 5 January 2015
Accepted 1 February 2015
Available online 11 February 2015

Keywords:
Transforaminal
TESSYS
Endoscopic
Minimally invasive
Fusion

1. Introduction

Technological advances in spine interventions have seen a boom in the past 2 decades, and in the most recent decade, secondary to more minimally invasive surgical options. One difficulty with any minimally invasive transformaminal interbody fusion (TLIF) system is performing an extensive enough disectomy when restricted by a narrow minimally invasive incision or extracavitary system. As these new techniques are applied in clinical practice, we must be ready with new solutions to the complications that subsequently arise. In the case presented, fusion bone is seen across the interbody space, but there was ample residual disk remaining to allow for a large paracentral disk herniation. Transformaminal endoscopic disectomy and foraminoectomy is described here as an extra-minimally invasive solution to the problem of lumbar disk herniation in the setting of a 2-level minimally invasive transformaminal lumbar interbody fusion (TLIF) and fixation with a spinous process fixation system.

2. Case report

The patient presented is a 39-year-old male who underwent a minimally invasive TLIF with a spinous process fixation at L4-S1 by another surgeon 18 months prior to presentation with a right L4-5 paracentral disk herniation and a new right L5 radiculopathy that had not improved with physical therapy and interventional pain management after 5 months. His preoperative CT shows the paracentral herniated disk, facet bone across the disk space, and a slightly retrotuped interbody graft that had not changed in position since surgery (Fig. 1).

The patient underwent a right lumbar 4–5 transformaminal endoscopic disectomy and foraminoectomy (TESSYS). He was positioned prone on the Wilson frame. The procedure was done under local (11 lidocaine with epinephrine), and intravenous sedation administered and X-ray verified. The level of anesthesia was titrated so the patient was able to communicate with the surgeon throughout the procedure. Percutaneous entry was established entering through the skin 12 cm lateral to the midline (Fig. 2). Using intermittent fluoroscopic guidance, alternating between lateral and anteroposterior (AP) view a 25 cm 18-gauge needle was advanced and placed in the disk space through Kamins' triangle, between the exiting and traversing nerves. An AP fluoroscopic view was used so the disk space was not entered before the needle was past medial border of the pedicle (Fig. 2). As shown in Fig. 2, the needle trajectory is slightly oblique as to provide access and visualization of the caudally extended portion of the disk herniation. Sequential reamers were used to enlarge the neural foramen by removing the ventral aspect of the superior facet (Fig. 2). "Jeepstick" reaming was performed; a large caliber reamer was placed over a small dilator and tegded posteriorly to over-rem the superior articulating process and enlarge the foraminoectomy to better decompress...