

Available online at www.sciencerepository.org

Science Repository



Case Report

How to Confirm and Document Adequate Lumbar Spine Discectomy Intraoperatively?

Joseph Gamal Boktor^{1*}, Miriam Nakanda Kakaire², Devi Prakash Tokala³ and Ashish Khurana³

¹ST3 Trauma and Orthopaedics, Royal Gwent Hospital, Newport, Wales, United Kingdom

²Senior House Officer, Trauma and Orthopaedics, Royal Gwent Hospital, Newport, Wales, United Kingdom

³Consultant, Trauma and Orthopaedics, Royal Gwent Hospital, Newport, Wales, United Kingdom

ARTICLE INFO

Article history:

Received: 18 November, 2020

Accepted: 10 December, 2020

Published: 22 December, 2020

Keywords:

Lumbar discectomy

cauda equina

recurrent disc

residual disc

diagnosis

ABSTRACT

Lumbar discectomy is a common procedure for acute disc prolapse, especially in patients with neurological deficit [1]. The literature describes using fluoroscopy intraoperatively to avoid wrong level and side [2]. However, there is no method to confirm/document adequate discectomy apart from a postoperative MRI. The authors' technique involves taking clinical photos of the removed disc material. This technique provides accurate, low-cost documentation, and the patient can review it post-operatively. This could be of significant value in large disc prolapse and cauda equina syndrome surgery.

© 2020 Joseph Gamal Boktor. Hosting by Science Repository.

Background

Posterior lumbar discectomy is a common procedure for acute disc prolapse, especially in patients with neurological deficit [1]. The recurrence rate varies 5-18% [3]. This could be due to inadequate removal of disc material with residual disc or wrong level/side. On the other hand, it could be a true recurrence [4]. From 2002 to 2010, wrong level surgery and CES surgical failures constituted 9.9% each, of spinal surgery NHS Litigations with a cost of 12,000,000 GBP [5].

Aim

This study describes the authors' technique to confirm and document adequate correct level discectomy.

Technique

Pre-incision fluoroscopy was undertaken to confirm the level and side (Figure 1). Further fluoroscopy was undertaken before breaching ligamentum flavum (Figure 2). Central decompression/micro-discectomy was performed according to surgeon's preference and the

size of the disc. Once discectomy was completed, probes are placed in the disc space and nerve foramen to fluoroscopically document the extent of decompression (Figure 3). The removed disc fragments were collected and kept aside. Following surgery, a photo of the disc material (with scale and patient's label) was taken and included in the patient records (Figure 4).

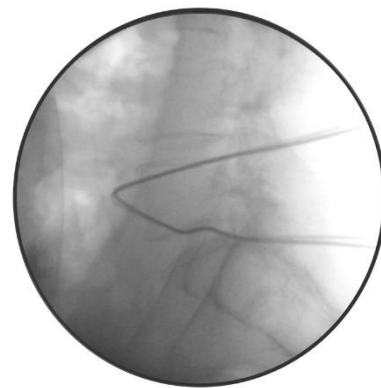


Figure 1: Identification of the correct level (L4/5) before prepping and draping.

*Correspondence to: Mr. Joseph Gamal Boktor, M.R.C.S., M.Sc., ST3 Trauma and Orthopaedics, Royal Gwent Hospital, Newport, 3 Cypress Crescent, Cardiff, Wales, United Kingdom; Tel: 00447470816963; E-mail: jostawro@hotmail.com

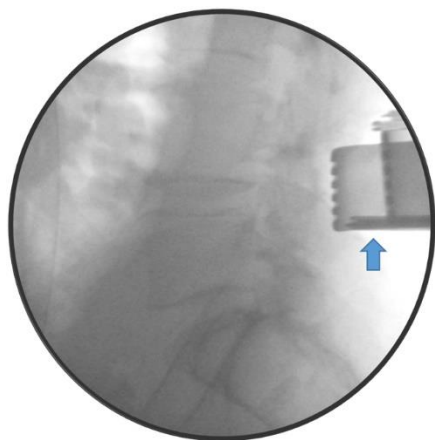


Figure 2: Confirmation of correct level and side at ligamentum flavum level.

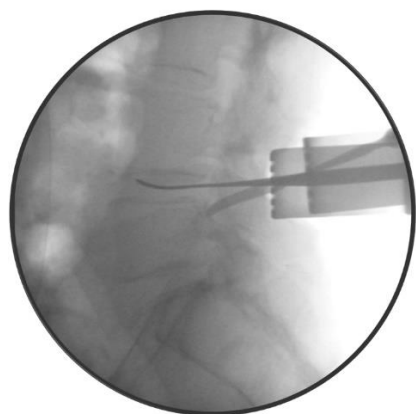


Figure 3: Watson Cheyne in the correct disc level (L4/5) and probe in the foramen (L5 exiting root) under the image screen.



Figure 4: Photo of herniated disc materials with scale and patient label to be added in the patient notes.

Discussion

The use of intraoperative fluoroscopy to confirm the correct level and side in lumbar discectomy is recommended by the British association of spine surgery (BASS). This technique is useful for the first point avoiding residual disc (wrong level) [2]. Nevertheless, adequate discectomy cannot be confirmed apart from postoperative MRI. Hence, the use of photos showing the excised disc fragments' volume could form a robust low-cost documentation of adequate surgery. This could be undertaken in all discectomy surgeries without any extra cost or patient inconvenience. This provides substantial medicolegal evidence of adequate discectomy especially in CES surgery.

Conclusion

Authors recommend using intraoperative photos of the excised disc material to be taken in all lumbar discectomy surgeries.

Conflicts of Interest

None.

Funding

None.

REFERENCES

1. Peul WC, van Houwelingen HC, van den Hout WB, Brand R, Eekhof JAH et al. (2007) Surgery versus prolonged conservative treatment for sciatica. *N Engl J Med* 356: 2245-2256. [[Crossref](#)]
2. Irace C, Corona C (2010) How to Avoid Wrong-Level and Wrong-Side Errors in Lumbar Microdiscectomy. *J Neurosurg Spine* 12: 660-665. [[Crossref](#)]
3. Hlubek RJ, Mundis GM (2017) Treatment for Recurrent Lumbar Disc Herniation. *Curr Rev Musculoskelet Med* 10: 517-520. [[Crossref](#)]
4. Lurie JD, Moses RA, Tosteson AN, Tosteson TD, Carragee EJ et al. (2013) Magnetic Resonance Imaging Predictors of Surgical Outcome in Patients with Lumbar Intervertebral Disc Herniation. *Spine* 38: 1216-1225. [[Crossref](#)]
5. Cross CE, Kapoor V, Todd B, Bhutta MA (2018) The Litigation Burden to The NHS From Spinal Injuries and Surgery: Analysis Of 236 Consecutive Closed Claims. *Orthop Proc* 94B.