DISKOM
CASE REPORT APRIL 2018

Percutaneous Discectomy Procedure

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Percutaneous Discectomy Procedure: A CASE REPORT.

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PATIENT HISTORY

> **Age** 55 years

> **Sex** Male

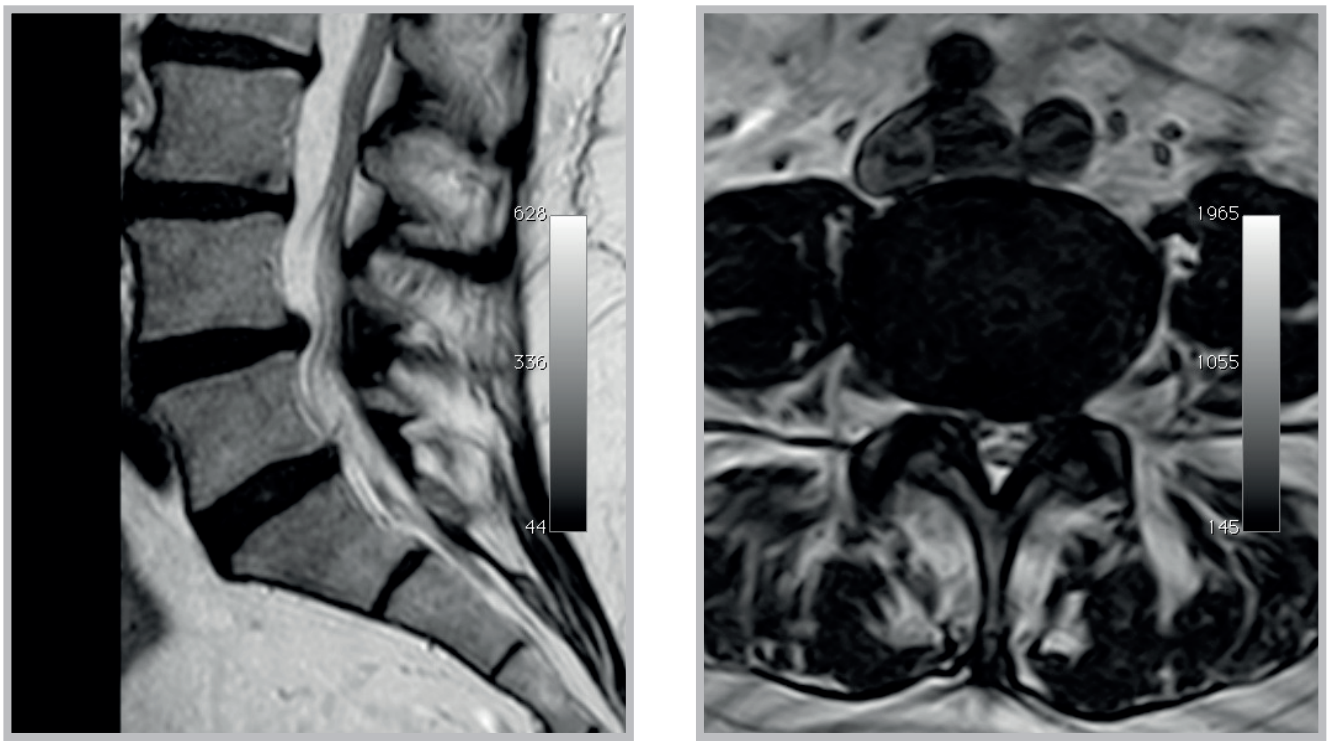
> **BMI** 26.5 (74kg,167cm)

> **Smoker** No

> **Diagnosis** Contained lumbar disc herniation (L4-L5)

> **Treatment** Percutaneous Disc Decompression (PDD)

55 year-old man with progressive low back and low limb pain for at least 3 months and who has had previous failed conservative therapy.



Patient's physical examination revealed low back andlow limb pain;
positive response to clinical test with no neurological deficits observed.

Figure: MR images of a 55 year-old man demonstrating a contained lumbar disc herniation

PRE-OP INFORMATION

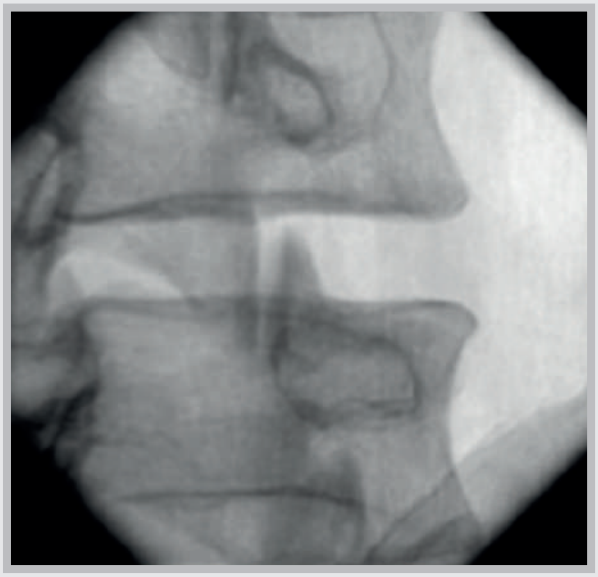
Pre-operative MRI showed a contained lumbar disc herniation causing disc conflict with the nerve root.

T2w axial MRI documented a lumbar disc herniation associated with radicolopathy. The T2w sagittal scan confirmed lumbar disc herniation and disc conflict with emergenting nerve root.

In order to assess the perception of pain, the patient underwent a VAS test before and after treatment.
An approximate 5 pt reduction in pain was observed and a subjective improvement of approximately 87%.

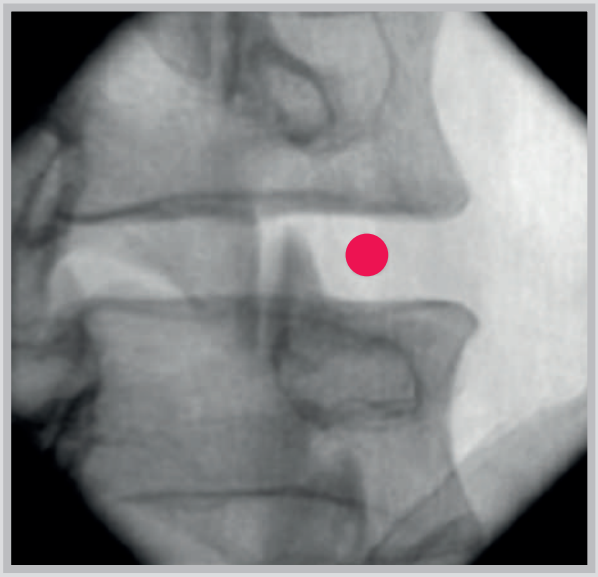
INTERVENTIONAL STRATEGY

Under fluoroscopic guidance and posterolateral approach (ipsilateral low back and/or leg pain), the C-arm fluoroscope is rotated to show the entry point at the level of articular process.



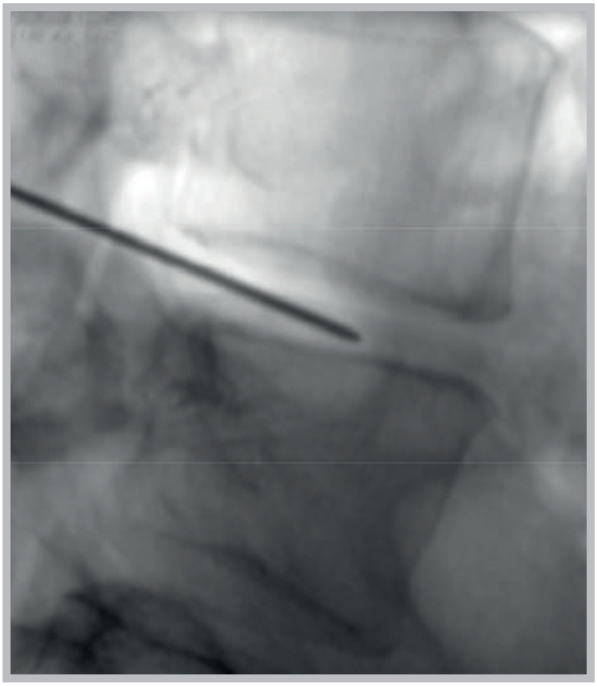
Disc puncture ● is then performed just lateral to the articular process (known as “scotty-dog”).

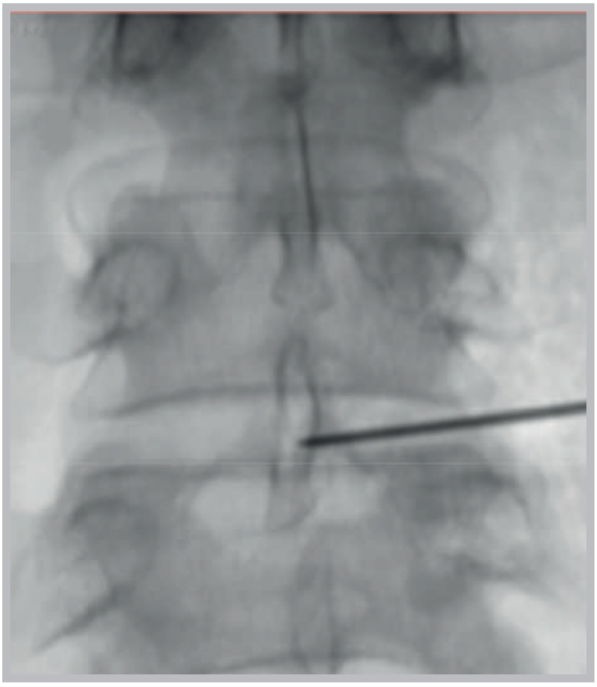
The needle must systematically slip along the articular process to avoid the nerve root in its extraforaminal course.



INTERVENTIONAL STRATEGY

After puncturing the disc, both anteroposterior and lateral fluoroscopic projections are obtained to confirm the proper positioning of the needle.





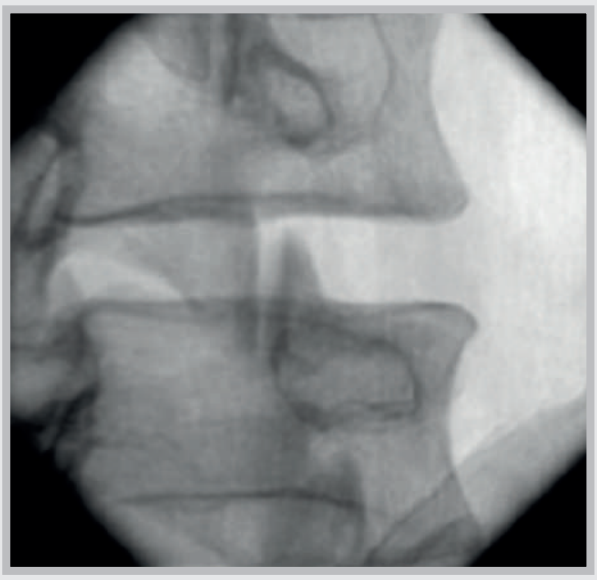
Remove the stylet then introduce the probe into the cannula and attach luer-lock on the access needle cannula.

Switch on the probe.

Advance 1 cm, performing a turning manoeuvre for 2/3 minutes.

The nucleus pulposus is partially removed from the disc going into the collection chamber and along the probe stylet; 5 nucleo-aspirations are usually suggested.

Remove the device.



OUTCOMES

MRI analysis performed at 12 months after treatment shows a lumbar disc herniation reduction, clinically improving in correspondence to pain reduction.

BEFORE

AFTER 12 MONTHS

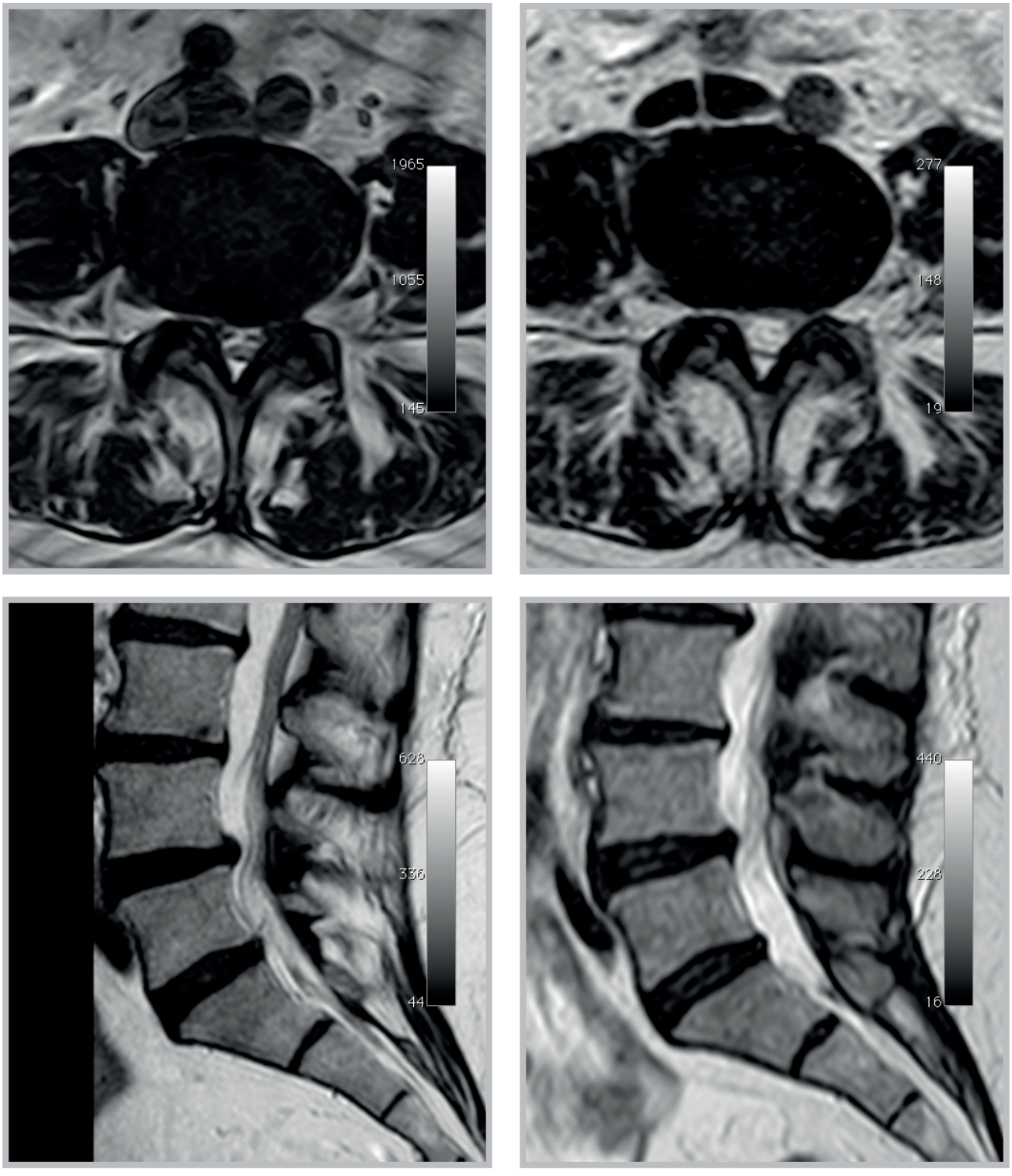


Figure: MRI demonstrates the reduction of disc compression on the nerve root

AUTHORS' DISCUSSION

Low back pain is one of the main causes of debilitation in the western population, with a huge socio-economic cost. It is estimated that about 80% of the population of industrialised societies are affected during their lifetime [1].

The main cause of low back pain is represented by herniated disc pathology that leads to radiculopathy.

Lumbar pain (lumbalgia) develops into radicular pain that we can clinically confirm using the Lasègue sign (sensitivity of 91%, specificity of 26%) and diagnostic tests (MRI or CT) [2].

In this paper, we report our experience in the treatment of radiculopathy, using percutaneous discal decompression techniques [3]; this technique allows, through the introduction of a very thin needle in the context of the disc nucleus (Diskom, Biopsybell), for the reduction of pressure within the intersomatic space. This result is obtained by introducing a discal decompression probe into the needle sleeve previously positioned in the intersomatic disc; through a high-speed rotary motion the probe enables the performance of disc-nucleus-aspiration cycles.

This percutaneous procedure, which is extremely safe, guarantees a marked contraction of the herniated or protruded disc nucleus, associated with a significant reduction in pain.
The procedure is effective in patients suffering from disc pathology (disc protrusion, contained herniated discs). It is performed under constant fluoroscopic control, under local and periradicular anesthesia, in a day-hospital or outpatient setting.

Correct implantation of the device obviously decreases the related rate of complications, improving the outcomes of this mini-invasive approach.

This technique appears to be a safe and effective treatment for low back pain due to contained lumbar disc herniation with an improvement in leg and back pain, persisting for at least one year.

REFERENCES

1 **Ehrlich G, Low back pain. Bull World Health Organ.** 2003; 81 (9):p. 671-6.

2 **Kamath SU, Kamath SS. Lasègue's Sign. Journal of Clinical and Diagnostic Research:** JCDR. 2017;11(5):RG01-RG02. doi:10.7860/JCDR/2017/24899.9794.

3 **HijiKata SA. Percutaneus nucleotomy, for low back pain.** In: Sicot XIV Word Congress, Kioto (Japón); 1978. p. 15-20; Hijikata S. Percutaneous nucleotomy. A new concept technique and 12 years' experience.

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