**Supplemental Digital Content 6 - Methods**

**Details on cell injection.**

This intervention was performed under slight sedation and radiological control. Cells were injected by disc puncture avoiding neurovascular elements (*1*). After double brushing of the region with aqueous povidone-iodine (chlorhexidine in patients allergic to iodine), the field was delimitated with sterile sheets and local anesthesia (Scandicain-1%) was applied to skin, subcutaneous tissue and muscle close to the puncture. With fluoroscopy in anteroposterior position, a vertical line corresponding to the projection of the spinous processes was marked on the skin with a sterile dermographic pencil. Then a perpendicular line corresponding to the projected image of a Kirschner needle aligned with the intervertebral space to be treated was drawn. At a point of located 8 to 9 cm (depending on the patient morphotype) from the midline, a 20G spinal needle was inserted with an inclination of 25 to 35 degrees towards the midline. Fluoroscopy was then changed to lateral position. This view ensures that the penetration of the needle follows the right direction until the nucleus pulposus is reached. After the correct position of the needle into the nucleus pulposus was verified in both, the anteroposterior and lateral fluoroscopic views, the suspension of MSC was slowly injected. No incidents have been recorded in none of the 10 patients using this procedure.

Following the cell infusion, the patient was generally discharged after a 2 hour-observation period. Lumbostat corset was not prescribed and moderate walking was permitted. Labour activity was suspended for one week. Exercises for tonifying paravertebral and abdominal muscles were started 1 month after intervention. Analgesic medication was adapted to the needs of each patient and anti-inflammatory drugs were not used.

**REFERENCE**

1. Konings JG, Veldhuizen AG. Topographic anatomical aspects of lumbar

disc puncture. *Spine* 1988; 13: 958.