

## Anular closure device: is it necessary after discectomy?

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Dear Editor,

I read with great interest the article by Bouma et al. [1] published in European Spine journal entitled “The high-risk discectomy patient: prevention of reherniation in patients with large anular defects using an anular closure device (ACD)”. The authors have evaluated ACD’s ability to reduce reherniation risk after lumbar disc surgery. The surgical technique chosen in this study was limited discectomy followed by implantation of an ACD. According to the authors, the low reherniation rate in patients at high risk of reherniation based on anular defect size, despite discectomy being only limited, suggests that an ACD may reduce reherniation risk [1]. This conclusion is based on several assumptions: (1) Higher risk of herniation is correlated with poor annular competence, (2) ACD is able to retain the nucleus pulposus within the confines of the disc space, and (3) limited removal of nucleus is associated with low reherniation risk.

As mentioned by the authors, limitations of the study are two different patient cohorts and the lack of a control group. There is no randomization between two populations, one that was treated with ACD, and one not. This is the key question which is not answered in this paper. Ideally, the two populations should have been randomized with and

without the ACD and the results should be compared to conclude that the ACD is effective on the prevention of reherniation. In addition, the patient population is quite heterogeneous, with inconsistent selection criteria, different surgeons, locations and time intervals.

I cannot understand the indication of surgery for 75 patients in this study. All patients had the same clinical condition and radiological findings? As we learn from this study, the same surgical procedure was performed to all patients. It is difficult to achieve any solid conclusions with ten surgeons in six centers.

Furthermore, the statement “ACDs may solve the dilemma by enabling an optimized limited discectomy procedure that minimizes the risk of both failure modes, representing a substantial health care savings to society” is an exaggeration. This result cannot be solely attributed to the ACD. Finally, how the authors removed the ACD? Was it easy or difficult? They did not clarified this issue in the paper. In my opinion, it is very difficult to remove an ACD 12 months after surgery.

Recently, Trummer et al. [2] compared discectomy+ACD and only-discectomy groups and they concluded that reinforcing the annulus fibrosus with ACD during lumbar discectomy may slow the progression of facet joint degeneration. I think that the discectomy+ACD group of this study is similar with those of Bouma et al. [1].

I believe that ACDs should be reserved for large anular defects with or without limited discectomy. I agree with the authors that further evaluation in a randomized, controlled trial is needed to confirm the reduction in reherniation risk using the ACD and to assess the percentage of patients who may be at high risk for reherniation due to poor annular competence.

**Conflict of interest** None.

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## References

1. Bouma GJ, Barth M, Ledic D, Vilendecic M (2013) The high-risk discectomy patient: prevention of reherniation in patients with large anular defects using an anular closure device. *Eur Spine J* 22(5):1030–1036
2. Trummer M, Eustacchio S, Barth M, Klassen PD, Stein S (2013) Protecting facet joints post-lumbar discectomy: barricaid annular closure device reduces risk of facet degeneration. *Clin Neurol Neurosurg* 115(8):1440–1445