



Minimally invasive anterior cervical discectomy and fusion: a valid alternative to open techniques

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Dear Editor,

I have read with interest the article about “Minimally invasive anterior cervical discectomy and fusion: a valid alternative to open techniques” [6] and would like to add a few comments.

It is well recognized that MIS (Minimally Invasive Surgery) or MISS (Minimally Invasive Spinal Surgery) is loosely defined as *any spinal surgery that attempts to minimize tissue damage caused by the surgical approach*. The proposed benefits of minimally invasive surgical (MIS) techniques have been developed with goals to minimize the disruption of the perispinal soft tissue, limit blood loss, decrease postoperative pain, and facilitate patient recovery.

The authors of this paper described a technique, where they used tubular retractors to perform standard ACDF. While in posterior spinal surgery, the benefits of using progressively dilating tubes to provide a trans-muscular corridor to the spine are well recognized and obvious (avoidance of muscular destruction and desinsertion from the spine as well as avoidance of longer midline skin incision with expected reduced soft tissue damage, less bleeding, and less infection) [2, 4], for the technique described in this article, the benefits of tubes are less certain.

The authors are using standard (open) approach to the anterior spine and simply use a different retractor system—tubular instead of the widely accepted blade retractors in standard ACDF. The classic (open) approach to anterior spine is already minimally disruptive to the soft tissue: there is no need to do any muscular desinsertion, there is usually no or minimal blood loss and the skin incision is frequently very much similar to what is described in this paper. The pain is usually not

an issue and the patients are usually able to be discharged home either same or next day after surgery—including for two-level ACDF which can be done in ambulatory service without compromising surgical safety [1, 3, 5].

Although I can see the proposed benefit of having a tubular corridor protecting the surrounding anatomical structures from an inadvertent injury during surgery, the potential challenges of transtubular approach seem to outweigh the proposed benefits. In addition to the frequent need to readjust the angle of the tube in order to achieve satisfactory foraminal decompression (in particular on the side of surgeon) and difficulties to fix the spine with a plate if needed, there are some other drawbacks, which have to be mentioned. The linear shape of the distal tube vs convex shape of the vertebra is likely to result in some gap between the lateral aspect of the tube and vertebra. This may lead to longus coli or even esophagus creeping into this gap. Unlike blade retractors, which are expected to anchor under the medial border of longus coli and retract it laterally, the tubular retractor is likely to cause more difficulties in achieving this, which may result in reduced surgical visibility.

The authors mentioned that one of the key points of this approach is “minimal tissue disruption, blood loss, postop pain, length of stay.” In my opinion, one should be very cautious before accepting this statement for the technique described in this article. Although the article per se is very interesting with a good video that successfully demonstrates that anterior cervical discectomy is perfectly feasible using tubular retractors, there is unfortunately no video showing the approach to the anterior spine, which is expected to be less invasive in MIS techniques.

A critical assessment of the difference (or no difference) between the approach in standard (open) ACDF versus open approach with tubular retractors is of paramount importance. The impact on the surrounding tissue should be carefully analyzed and clinically scrutinized. In my opinion, simple use of tubular instead of blade retractors does not transform an open surgery into a minimally invasive one.

This article is part of the Topical Collection on *Spine - Other*

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