

Editorial

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Incidental durotomy during decompression surgery for spinal stenosis, an often-encountered event, is addressed in three different papers of this edition of the European Spine Journal. Interestingly, many aspects of the issue remain controversial and are the subject of heated debates that may even sometimes end up in court. Should we talk about a ‘complication’ or rather an ‘undesired event’ when an incidental dural tear (IDT) occurs? We believe that as long as the incident has no postoperative consequence, it should be called an undesired event, not so much to preserve the surgeon’s ego but to avoid unnecessary frightening of patients when explaining the course of surgery PER- and postoperatively.

What management—if any—is needed during and after surgery? What are the risk factors that should make the surgeon even more cautious during surgery and how do these risk factors affect the incidence of IDT? Finally, what are the consequences to be expected following IDT regarding postoperative course and patient outcome?

The analysis of the Spine Tango Registry (ST) data reported by Herren et al. including 3254 patients selected according to a strict algorithm provides a reliable picture of the overall incidence of IDT, which is of 10.1% in this large cohort. Of notice is the remarkable homogeneity of the rate of IDT among the 29 contributing centres. The risk factors and the influence of IDT on outcome, according to patient reported outcome measures, appears as strong data given the sample size and the very sophisticated statistical analysis using the propensity score. Risk of IDT increases steadily with age, indicating increased fragility of the dura.

Overweight and history of previous surgery in the treated area are also relevant risk factors. The influence of the type of surgical techniques is statistically significant but this may be less relevant with the type of data available from a registry with limited description of the exact surgical technique that may vary among surgeons.

Repair or abstention of IDT repair did not influence the outcome, but the size and location of the tears is unknown and had certainly an influence on decision-making regarding repair and probability of seeing the undesired event evolve to a postoperative complication. At least, abstention of repair cannot be considered per se as an error based on the available data. Of course, the validity of this information remains within the limits of any analysis of registry data: one can only assess the available data set that is supposed to be correctly provided by the participating centres.

The paper by Oertel et al. indicates that repair of IDT can be carried out endoscopically. However, according to the ST data, it may well be that most of these IDT occurring during endoscopic spinal surgery would have healed on their own, without specific intervention. Indeed, most probably, these tears were de facto covered by bone, fat or muscle tissue when closing the small wound, allowing spontaneous healing and preventing postoperative complications. Only randomization to repair and non-repair of tears, similar in size and coverage at closure, would define if and when to repair a tear but this would be debatable on ethical grounds. In our practice, we do not attempt to repair IDT when the tear is covered either by bone, fat tissue or muscle. In particular, the need for more extensive decompression to allow for repair must be weighted against the spontaneous healing capacity of a covered tear. Repair or at least coverage, seems mandatory whenever there is a dead (empty) space around the tear, typically when instrumented stabilisation is carried out. The size of the tear is also of importance: the smaller

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tear (puncture) not being necessarily the most benign: as long as there is a pressure difference between the liquid in the dural sac and the extradural environment, the leaking will continue.

The best postoperative management of a patient with an IDT also remains a matter of debate.

Bed rest is recommended in some centres, while normal ambulation is allowed on the first postoperative day in others, as long as the patient has no specific symptoms like headache, vomiting, photophobia or CSF leakage at the skin. Placement of a drain at all, and if placed, with or without suction, is also the subject of controversy. Abundant drainage indicates surely the need to stop suction. In case of persisting CSF fistula over a period of days, revision for dura repair must certainly be considered to control symptoms and prevent infectious complications that can be dramatic. Repair can mean suture of the dura if possible, or coverage of the tear with a fascia patch, dural graft or muscle flap. Revision for a CSF leak while the IDT went unrecognized during index surgery must be very carefully weighted: often no source will be found. Prolonged bed rest, hydration, eventually installation of a percutaneous intradural drain at a distance of the surgical site may help out.

Obviously, PER- and postoperative management of IDT remains a matter of individual judgement and is highly case dependent.

The influence of IDT on patient outcome is obvious regarding increased length of stay and increased risk for

re-intervention. Regarding the influence of IDT on clinical outcome, the jury is still out. The ST study did not find a significant difference in outcome between the non-IDT group and the IDT group, repaired or unrepaired. In the unrepaired IDT group, the proportion of patients who reported to be “not satisfied” with “in hospital treatment” or having a “poor global treatment outcome” was respectively, 9 and 8% higher compared to the other groups, however, not reaching statistical significance.

Data from the study of Kothe et al. suggest “a possible inferior outcome in terms of low back pain improvement” in their IDT group. They wonder whether this may be due to the more extensive exposure required for repair of the IDT.

From the available data one should conclude that avoidance of IDT is best, but occurrence of IDT is often without lasting consequences. The old motto “*primum non nocere*” remains applicable once IDT has occurred: the remedy (repair, prolonged bed rest, revision surgery...) should not be worse than the incident.

Compliance with ethical standards

Conflict of interest The author declares that he has no competing interests.