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EDITORIAL

Is low back pain after disc herniation with Modic Type 1 changes a low-grade infection?

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In this issue of the *European Spine Journal* we are confronted with new data concerning the significance of Modic Type 1 changes (MC I) in patients with chronic low back pain. We know from previous studies that MC I occurs six times more frequently in the low back pain population than in the general population. The reason may be of mechanical nature, but under certain circumstances low virulent infections may play a key role. The Danish group of H. B. Albert does not only demonstrate that patients with infected herniated nucleus material by anaerobic bacteria in lumbar disc herniation develop in 80 % new MC I in adjacent vertebrae, but also that those patients with low back pain and MC I after disc herniation improved highly statistically significant on all outcome measures under an antibiotic protocol. This strongly suggests one cause of low back pain in combination of MC I to be of low-grade infectious nature in case of previous disc herniation.

Since it is ethically impossible to have biopsies of all those patients who have low back pain and MC I in the context of a disc herniation on the MRI (where starts the definition of disc herniation: annulus disruption and penetration with nucleus material?), but only from those patients who have surgery due to disc herniation, the authors ask the obvious key question, whether or not the bacteria found in the nuclear material is indicative of an infection or is possibly due to intraoperative contamination.

The authors give a plausible answer that contamination is highly improbable. Nevertheless, further research is necessary to show what exactly happens in patients with disc herniation who develop MC I and low back pain and who have not been operated on. How could we show that in this fraction of patients there could be the same number of anaerobic infections of the nucleus material? By markers of the anaerobic bacteria or of specific infectious tissue, which could be made visible in imaging? By fine needle biopsy? Such a gain of knowledge would make the results presented here by H. B. Albert et al. even more explosive for the further understanding of low back pain and corresponding MRI changes. We are keen to wait for further innovative research in this field.

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