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REVIEWER'S COMMENT

F. Balagué
R. Gunzburg

Lumbar disk herniation: are the symptoms relevant for surgery?

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F. Balagué (✉)
Service de Rhumatologie,
Hôpital Cantonal,
1708 Fribourg, Switzerland
E-mail: balaguef@hopcantfr.ch
Tel.: +41-26-4267380
Fax: +41-26-4267387

R. Gunzburg
Eeuwfeestkliniek, Harmoniestraat 68,
2018 Antwerp, Belgium

K. Sucu and F. Gelal describe five cases of patients with unilateral (or clearly asymmetric) sciatica whose imaging studies demonstrated disk herniations on the opposite side of the symptoms. These patients were operated with a unilateral approach guided by the radiological images rather than by the symptoms. The authors report a good outcome (''almost complete recovery'') after 1–3 years of follow-up claim that a surgical approach limited to the side is appropriate and describe their own theory to explain these atypical clinical pictures.

Doubtless, these cases are interesting and challenging for the clinician but for the devil's advocate we have to play here as they raise questions rather than convince us.

To fully adhere to their opinion, the authors should provide the reader with the scientific proof that: (1) the described images were the cause of the symptoms, (2) the demonstration of the therapeutic effect of the surgical procedure according to the usual requirements, and (3) the demonstration that forces of traction are exerted on the nerve roots. From our point of view, Sucu and Gelal fail to produce convincing evidence with regard to the three points. The first two points seem more relevant for clinical decision-making and will be discussed here.

Etiology of sciatica

It is well known from the literature that inflammatory mechanisms may play a role in sciatica. Therefore, the lack of a clear-cut explanation in imaging studies does not preclude the reality of symptoms. Moreover, all the investigations have technical limitations that all clinicians have experienced in their daily practice.

The described cases are characterized by broad-based central–paracentral herniated disks impinging on the dural sac but without direct compression identified on the nerve roots of the symptomatic side.

In a study comparing the MRI with the surgical findings in 94 nerve roots, Pfirrmann et al. [5] reported a high correlation ($r = 0.86$) with a majority of the discrepancies being of a single grade. However, in one case the MR-graded "contact" between the disk and the root while at surgery"compression" was found. In another case, the opposite happened. Moreover, a normal aspect of the root or just a contact with the disk was the only finding reported in 29 cases at surgery and in 30 by MRI.

A study by Vroomen et al. [7] including the original 274 primary care patients with pain radiating into the leg, looked at the anatomical details of nerve root compression. This study showed different findings at different lumbar levels. Moreover, in the absence of root compression, 53% of patients exhibited a positive SLR.

In Beattie et al.'s [1] study on 408 patients complaining of LBP or lower extremity pain, the most frequent MRI diagnosis was "unremarkable" (20.6%) followed by "disk impairment without nerve compression" (16.9%). All these examples confirm that the absence of a clear compression of the nerve root is not exceptional. Moreover, it has been shown that in patients operated on for lumbar disk herniation, the pressures on the nerve root exerted by the disk range from 7 to 256 mmHg [6].

The authors quoted three references describing similar cases with different etiologies. Branam and Stambough [3] reported a case of discordant clinical–radiological due to an unusual migration of a free disk fragment crossing the midline. Such a condition would possibly be missed if the symptomatic side was not explored during the surgical procedure.

As the authors themselves highlight, the high prevalence of abnormal lumbar CT-scan or MRI studies among asymptomatic subjects is well known. Moreover, images have been shown to be not predictive of the development or duration of low back pain [2]. This epidemiological evidence should be an additional reason to be extremely cautious before deciding and planning a surgical procedure based solely on the results of imaging studies.

Role of surgery

Even though this is not a randomized controlled trial, to agree with the authors that improvement could be attributed to the surgical procedure, the impact of any previous treatments should be known. Unfortunately, the kind of conservative management prescribed before and/or after surgery is not clearly described by the authors. Looking specifically at the published images one may wonder if surgery was mandatory at least in case 1 (Fig. 1).

The authors state that all the patients had a good outcome. However, the follow-up evaluations were neither performed by means of validated tools nor by independent examiners. Therefore, the validity of the reported outcomes is reduced. Moreover, no follow-up imaging was obtained.

Should these cases have an excellent outcome exclusively due to the operative treatment, this would not be an absolute reason to recommend surgeons to operate with a unilateral approach limited to imaging the most impressive side. Alternative reasons that may contribute to explain the outcome are the placebo effect of any surgical procedure [4], the possibility to extract a contained nucleus pulposus from the asymptomatic side, the possible effect of a reduction of the intradiscal pressure (as suggested explanation of the effect of some minimally invasive techniques) obtained by this type of surgery.

In conclusion, until more evidence is provided, we clearly recommend against the authors' approach, which seems potentially dangerous for some patients. However, efforts trying to better understand clinically challenging conditions should be strongly supported.

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