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## Reply to the Letter to the Editor “Spinal dural arteriovenous fistulas: early endovascular treatment or surgery?”<sup>☆</sup>



## Réplica a la carta al editor «Fístulas arteriovenosas espinales durales: ¿tratamiento precoz endovascular o quirúrgico?»

Dear Editor:

We would like to thank the authors of “Spinal dural arteriovenous fistulas: early endovascular treatment or surgery?”

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for their comments on our original article “Spinal arteriovenous fistulas in adults: management of a series of patients treated at a neurology department.”<sup>1</sup> Most cases of spinal arteriovenous fistulas (AVF) are associated with diagnostic difficulties and treatment delays, given that they frequently present insidiously.<sup>2–4</sup> We agree with the authors that early treatment is critical in any type of spinal AVF.<sup>5</sup> However severe disability may be at the time of diagnosis, symptoms are reversible.<sup>1</sup>

Treatment, whether with surgery or embolisation, aims to eliminate the abnormal connection and re-establish normal spinal cord perfusion and pressure. No treatment guidelines are currently available for spinal AVF. Most studies are case reports or case series including few patients. The consequence of this, as the authors point out, is that selecting the most suitable treatment continues to be controversial, except for those cases of spinal AVFs involving the anterior spinal artery or the artery of Adamkiewicz, where surgery is the treatment of choice due to the high risk of ischaemia associated with embolisation.

Endovascular treatment alone greatly depends on lesion subtype, the angioarchitecture of the fistula, and the type

of agent used. Most series reporting treatment approaches to spinal AVFs were published before the development of the new embolic agents; however, the durability of fistula closure with these agents continues to be lower than that of surgical occlusion. Significant advances have also been made in microsurgery, resulting in lower morbidity rates.

However, when viable and safe, endovascular treatment is increasingly being considered the first option, as it has the added benefit that it allows diagnostic and therapeutic angiography to be performed simultaneously.<sup>6–8</sup> Initially regarded as an adjuvant to surgery, embolisation is now seen as a valid alternative. Although surgery achieves fistula occlusion in nearly 100% of cases, on most occasions after a single procedure, endovascular treatment does not seem to be associated with poorer clinical outcomes.<sup>1,7</sup> This is even more clear in cases of epidural fistulas, where endovascular treatment seems to be the treatment of choice for most authors, with increasing rates of complete occlusion.<sup>9,10</sup>

In our series, we chose endovascular treatment as the first option whenever it was viable, mainly due to age at diagnosis in patients with associated comorbidities and our ample experience with endovascular treatment, achieving shorter hospitalisation and recovery times and reducing rates of complications related to hospital admission, which are mainly infectious. Of the 5 patients undergoing endovascular treatment only (whether a single procedure or more than one), 4 improved significantly; in the remaining patient (who had the longest symptom progression time [84 months]), only stabilisation was achieved.<sup>1</sup>

Although surgery is currently considered the most effective treatment, further evidence is necessary to determine the best treatment option. Meanwhile, adapting treatment to the type of fistula and to each patient's needs based on each centre's experience with the different techniques seems the most appropriate approach. Neurologists, interventional neuroradiologists, and neurosurgeons should work to reach a consensus on the best treatment option or treatment combination for each patient.<sup>11,12</sup> The only clear conclusion is that early treatment is needed in all cases.

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