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Letter to the editor

Comments on: "Have we made true progress in surgical indications and determining the limitations of spinal fusion in patients with idiopathic scoliosis?" of Jean Dubousset, Dominique Chopin, Raphaël Seringe published in Orthop Traumatol Surg Res. 2018;104(5):555–556

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This fertile and enlightening editorial on adolescent idiopathic scoliosis was a pleasure to read. We agree that global curve measurements are insufficient to achieve a harmonious sagittal balance: clearly, a 50° lordotic curvature does not have the same impact when distributed over three, six, or ten vertebrae. Consequently, we believe that the number of vertebrae or the inflection point in each sagittal curve should be determined [1,2].

Recent publications suggest that the indications for surgery should be broadened compared to traditional dogma. Thus, a recent multicentre study sponsored by the SoFCOT supports decreasing the coronal curve cut-off above which surgery is performed to 35° for thoraco-lumbar/lumbar curves and 45° for thoracic curves [3]. In addition, balanced double major curves were not usually treated surgically unless greater than 60° (with fusion of the two curves). However, there is a current increase in the popularity of the fusion criteria put forward by Lenke [4] and Suk [5], which suggest reserving selective thoracic curve instrumentation for patients whose lumbar curve decreases to less than 25° during bending (Lenke type 1c). These criteria support surgery in patients whose thoracic curve is 45° or more. If the secondary curve is reducible, selective fusion to correct the main curve at the thoracic or thoraco-lumbar/lumbar spine ensures significant correction of the uninstrumented curves [6,7].

We agree with J. Dubousset, D. Chopin, and R. Seringe that certain pedicle screw-based reduction techniques are associated with loss of kyphosis (cantilever and direct de-rotation), in contrast to the postero-medial translation techniques favoured by French surgeons and involving thoracic-screw [2,8] or sublaminar-band [9] fixation, which increase kyphosis, provide good correction in the coronal plane, and allow de-rotation of the apical vertebrae in the axial plane if high implant density is combined with de-rotation and simultaneous translation on two rods [8,10]. We believe this last strategy constitutes progress in the direction of the initial method advocated by Cotrel and Dubousset, which focuses on 3D correction.

Table 1
Distal instrumented vertebra selected by GES surgeons for each of 5 patients. The data are the numbers of surgeons who gave each answer.

	Distal instrumented vertebra						
	T11	T12	L1	L2	L3	L4	L5
Patient #1	1	5	8	2	9	3	0
Patient #2	3	4	4	7	13	1	0
Patient #3	0	6	11	5	7	3	0
Patient #4	0	0	4	5	4	18	1
Patient #5	0	0	13	11	7	1	0

During preparation for a round table in 2015 [11], the members of the Scoliosis Study Group (Groupe d'étude de la scoliose, GES) were asked to select the lower end vertebra in 5 patients with adolescent idiopathic scoliosis, based on a full set of imaging studies. The 32 surgeons who participated gave a variety of answers (Table 1), indicating that some surgeons in France probably use a modified version of the Dubousset criteria or a different criteria set to select the vertebrae at the ends of the instrumentation.

Disclosure of interest

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V.R. declares that she has no competing interest.

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