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LETTER TO THE EDITOR

Letter to the Editor concerning "Global tilt: a single parameter incorporating spinal and pelvic sagittal parameters and least affected by patient positioning" by Obeid I et al. [Eur Spine J; (2016) 25: 3644–3649]

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Dear Editor,

We read with great interest the recent article by Obeid et al. [1], in which the authors described a novel spinopelvic parameter, global tilt (GT), to assess global sagittal alignment. It is defined as the angle between a line from the center of the superior sacral end plate to the center of the C7 vertebral body and a line from the femoral heads to the center of the superior sacral end plate, which could integrate both trunk inclination (C7 vertical tilt, C7VT) and pelvic retroversion (pelvic tilt, PT) simultaneously. It has been reported that GT is immune to the postural compensation despite varying extent of pelvic retroversion and knee flexion.

To the best of our knowledge, however, one flaw in this study has to be mentioned that GT should be affected by the posture under some certain conditions. Authors neglect the fact that the spine is not a rigid unit and spinal alignment can change with spinal segments movement. Deformity in spinal sagittal plane could aggravate gradually in some situations, such as back muscle fatigue. When the value of pelvic incidence (PI) is relatively small and pelvic retroversion becomes restricted, pelvic compensatory retroversion can't completely compensate for the aggravating deformity alignment, leading to trunk inclination eventually. Under this circumstance, the value of GT will increase with the trunk inclination and pelvic retroversion (Fig. 1a, b). Therefore, to improve the conclusion, we think that GT should not

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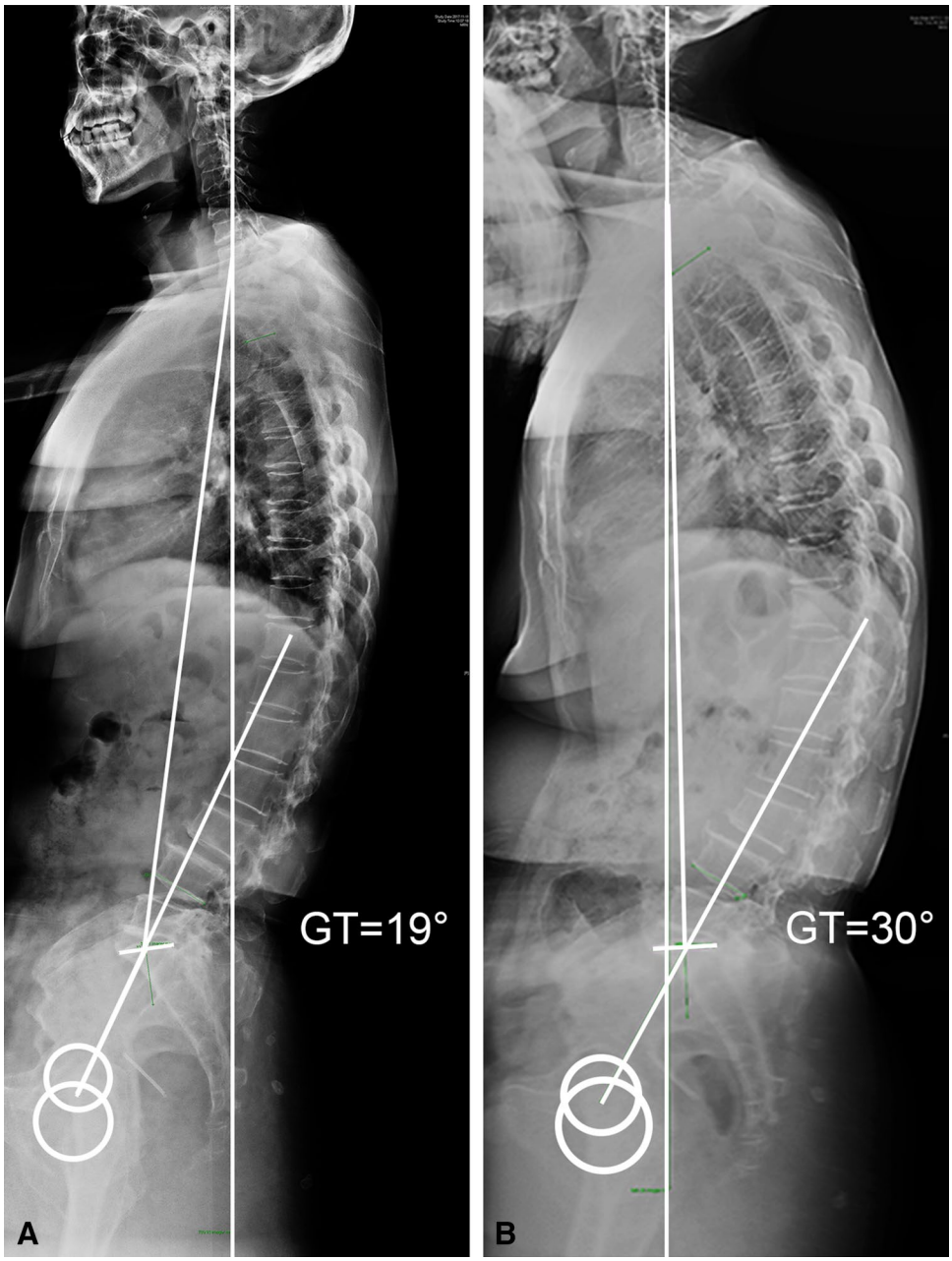

Fig. 1 Female, 64 years old. **a** After rest, GT = 19°, kyphosis = 49°, SVA = − 46 mm, PT = 24°, PI = 32°; **b** After walking for 5 min, GT = 30°, kyphosis = 65°, SVA = 30 mm, PT = 30°, PI = 32°. Increasing kyphosis with back muscle fatigue, restricted pelvic retroversion with small value of PI, and trunk inclination lead to the increase in GT. *GT* global tilt, *SVA* sagittal vertical axis, *PT* pelvic retroversion, *PI* pelvic incidence

be affected by the subject's posture when spinal segments movement can't occur, especially at long-fused spine with pelvic fixation after corrective surgery.

Compliance with ethical standards

Conflict of interest There is no interest conflict among all the authors.

Reference

1. Obeid I, Boissière L, Yilgor C et al (2016) Global tilt: a single parameter incorporating spinal and pelvic sagittal parameters and least affected by patient positioning. Eur Spine J 25(11):3644–3649