



Answer to the Letter to the Editor of V. Kumar, et al. concerning “The contribution of preoperative balanced halo-pelvic traction to severe rigid spinal deformity correction” by Z. Zhou et al. (Eur Spine J [2023]; doi: 10/1007/s00586-023-07916-w)

Kai Cao¹

Received: 12 September 2023 / Accepted: 14 September 2023 / Published online: 29 September 2023
© The Author(s), under exclusive licence to Springer-Verlag GmbH Germany, part of Springer Nature 2023

Dear Editor,

The below is our response to the letter:

On behalf of the authors, I am happy that readers are interested in our work. We hope that our work will be helpful for the spine surgeons in treating the severe rigid spinal deformity. In our work, the total deformity correction for major curve achieved after surgery was 57.3% through posterior approach and multi-level Ponte osteotomy. We might have provided another choice which could avoid high-grade osteotomy but achieve a satisfied correction.

In the current study, the inclusion and exclusion were stated in the paper (Materials and methods—Patient data). “The inclusion criteria were as follows: (1) patient’s age more than 18 years; (2) main coronal curve larger than 90°; and (3) flexibility less than 30%. Exclusion criteria: (1) patients had a history of spinal surgery; (2) patients had severe comorbidity; (3) patients had infective spinal disorders or tumors; and (4) patients could not tolerate traction.”

The severe comorbidity includes the condition that can not allow the patients to tolerate the surgery but is not limited to severe cardiopulmonary disease, severe anemia, coagulation disorder, cerebral infarction, severe osteoporosis and so on. The readers questioned the exact upper vertebral level used for measuring the thoracic kyphosis varies. In the current study, because of the variety of deformity, we focused on the main curves in coronal and sagittal plane, and measured the segmental kyphotic Cobb angle instead of thoracic kyphosis, which is the angle between the upper

and lower end vertebrae in sagittal plane. In our study, the HPT-related complications were not rare. However, the most common complication was Halo screw or pelvic pin loosening. Pelvic pins were inserted from the ASIS and went out from the PSIS through the iliac bone. So, the loosening pins would not injure any tissue, but just slide a little in the horizontal pin canal only if under pulling or pushing force, which did not influence the vertical traction effect of apparatus. Additionally, pelvic pins loosening all occurred in the late stage of traction, we would then shift the patient to surgery soon. So, we need not pay particular attention to this issue.

At last, the readers are interested in the postoperative rehabilitation protocol. Same as in all spinal surgeries, the rehabilitation is important for the patient and the Enhanced Recovery after Surgery (ERAS) Spine Care should be adopted. General rehabilitation protocol is the following: education should be processed before the surgery. The surgical procedures, expectations, risks and benefits should be explained to the patients which could help them to relieve their anxiety. In the bed rest time in the early stage after operation, pain management, respiratory exercise and wound care are mandatory. Movement of upper and lower limbs should be encouraged earlier after surgery which could be helpful in preventing thrombosis and recovering the limbs muscle power. The patients are encouraged to start ambulation under the assistance of devices/walkers as soon as early. The daily activity volume should be increased gradually depending on the patients’ condition. Brace should be taken for 1–3 months post-surgery and the patients are followed-up in outpatient every 3 months and every 1 year after 1-year follow-up.

✉ Kai Cao
kaichaw@126.com

¹ The Orthopaedic Hospital, The First Affiliated Hospital of Nanchang University, #1519 Dongyue Ave., Nanchang 330209, Jiangxi, China