

# Contralateral C7 nerve transfer through posterior vertebral approach combined with selective posterior rhizotomy of the affected cervical nerve in the treatment of central upper limb spastic paralysis: A case report

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## ABSTRACT

**Background:** C7 nerve transfer alone can improve upper limb motor function and partial spasticity. Selective posterior rhizotomy (SPR) of the cervical nerve alone can comprehensively improve spasticity but without neuromotor regeneration. We propose a novel possible improvement of CC7 nerve transfer through the posterior vertebral approach, which was combined with SPR of the affected cervical nerve.

**Case report:** A 33-year-old male patient presented with craniocerebral trauma, paralysis of the right limbs, and hypesthesia 8 months earlier. The dysfunction of the affected hand was already present at admission. The patient reported a previous history of hypertension for several years and oral antihypertensive drugs, and blood pressure was controlled within a normal range. The muscle strength of the right lower limb was grade IV. The Fugl-Meyer score of the right upper limb was 7 points, and the modified Ashworth score was 10. The patient

successfully underwent CC7 transfer and SPR without complications. On the day after surgery, the left upper limb motions were normal. The Fugl-Meyer score was 9, and the modified Ashworth score of the right upper limb was 2.

**Conclusion:** CC7 nerve transfer through the posterior vertebral approach combined with SPR of the affected cervical nerve can possibly improve the surgical outcomes of selected patients with upper limb motor dysfunction and partial spasticity. This method has not been reported in the literature before, and additional studies are necessary.

**Keywords:** hemiplegia; C7 nerve; transfer; selective posterior rhizotomy.