

Anterior cervical V-shaped osteotomy and fusion (ACVF) for Retro-Corporeal decompression bypassing anterior vertebral body: A technical note and case series

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Background: Anterior cervical discectomy and fusion (ACDF) is a classic procedure with a limited ability to treat compression along the vertebral canal into the back of the adjacent vertebral body (Fig.1), leading to the risk of unnoticed inadequate decompression. Anterior cervical corpectomy and fusion (ACCF) can be applied in this case, but the higher complication rates restrict its usage. We aimed to describe a procedure named anterior cervical V-shaped osteotomy and fusion (ACVF) for the treatment of post-vertebral body compression.

Research question: Is ACVF a safe and effective procedure for retro-corporeal decompression?

Design: Case series report.

Methods: ACVF was performed in four patients with cervical myelopathy by retro-corporeal compression. The main procedures included discectomy at two adjacent levels, V-shaped osteotomy of the posterior vertebral body to connect two intervertebral spaces, and fusion device placement similar to a two-level ACDF (Fig.2 and 3).

Results: Postoperative image demonstrated adequate decompression and unimpaired fusion process. Follow-up confirmed improvement in symptoms and neurological function. The vertebra heights were maintained without significant collapse (Fig. 4 and 5). No complications related to this technique were recognized.

Discussion: ACVF may be safe and effective for spinal cord decompression in the case of retro-corporeal compression, with the potential to serve as a substitute for ACCF and avoid the complications associated with corpectomy and long implants.

Fig.1 Preoperative images of case 2. MRI showed compression behind C6 vertebral body.

Fig.2 Intraoperative photos of case 2. A complete decompression was confirmed by electrode (e).

Fig.3 ACVF diagrams and intraoperative CT of case 4.

Fig.4 Follow-up images of case 1.

Fig.5 Pre-post surgery MRI of case 1.

Fig. 1

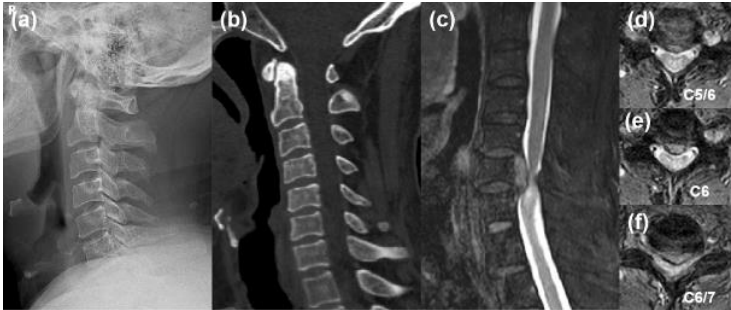


Fig. 2

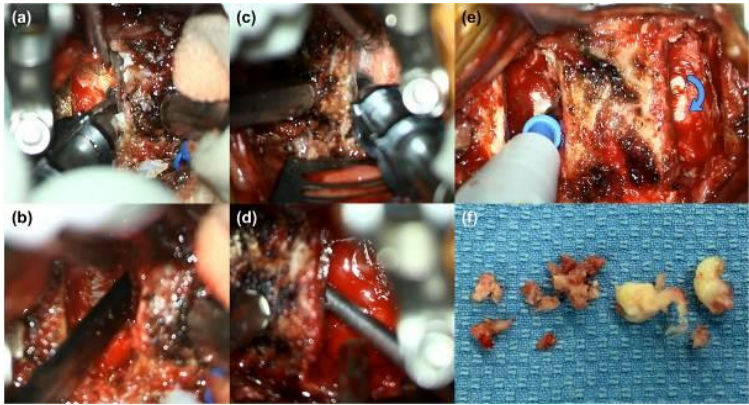


Fig. 3

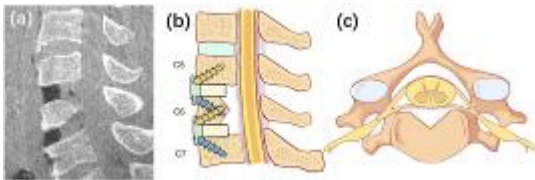


Fig. 4

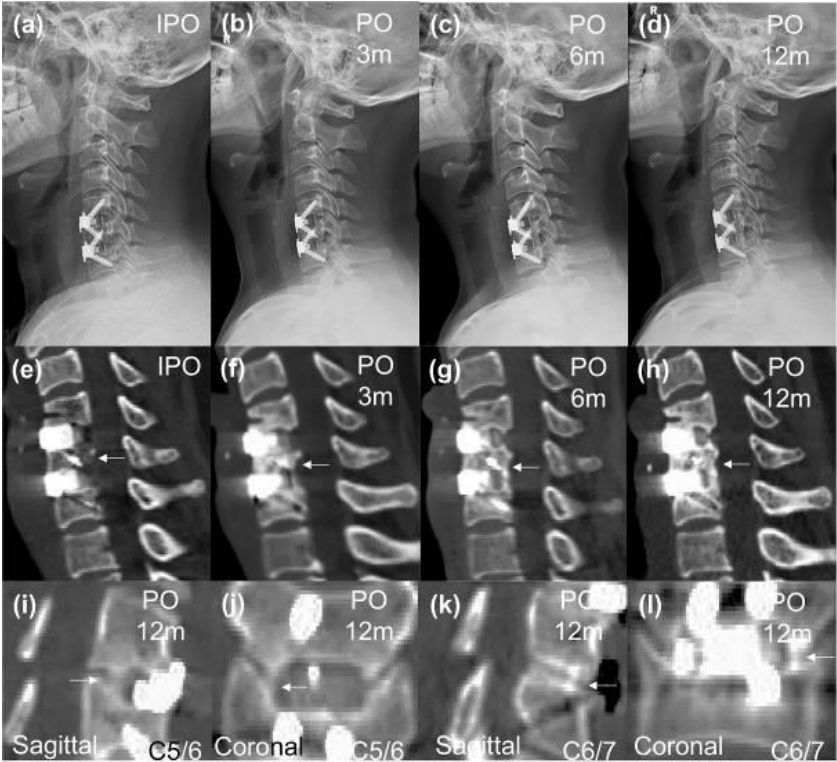


Fig. 5

