

Arteriovenous fistula following dominant vertebral artery injury as a complication of posterior C1-2 screw fixation. A case report and review of the literature

김 영 진

단국대

Although many various fixation techniques have been developed for management of atlantoaxial instability, a screw fixation of posterior C1 lateral mass and C2 pedicle has emerged as a preferred treatment based on its pronounced biomechanical strength. This technique provides more resistance to the translational and rotational forces as compared with the previous technique. However, the technique of screw fixation poses inherently a risk of vertebral artery injury because of the complex anatomy of the cervical spinal bony structures and adjacent vertebral artery (VA).

A 72 years old woman presented with rheumatoid arthritis and atlantoaxial subluxation for management of her severe neck pain and motor weakness of upper extremities worsening progressively. The atlantodental distance (ADI) was measured more than 10mm on the cervical lateral radiograph and C1 posterior arch compressed to the spinal cord posteriorly on MR Images. The patient underwent a screw fixation of posterior C1 lateral mass and C2 pedicle and there was a dominant vertebral artery injury during the C2 pedicle screw fixation on the left side. A postoperative digital subtraction angiography (DSA) demonstrated an arteriovenous fistula at V3 segment near C2 pedicle and revealed diminished back flow from the vertebral artery after placement of interventional endovascular stent.

We report a case of a dominant vertebral artery-to-epidural venous plexus fistula after posterior C1-C2 screw fixation, which was treated with endovascular stenting, and review the available related literature.