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Clinical Studies

# Iatrogenic vertebral artery injury during anterior cervical spine surgery

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### Abstract

#### Background context

Iatrogenic injury to the vertebral artery during an anterior cervical decompression is a rarely mentioned but potentially catastrophic complication.

#### Purpose

This study was designed to examine the incidence and management of iatrogenic vertebral artery injury (IVAI) in a large database.

#### Study design/setting

This was a retrospective study performed at a large teaching institution over a 7-year period (1994–2001).

## Patient sample

All anterior cervical spinal procedures performed for herniated or degenerative disc disease, or cervical spondylosis were identified, as were incidences of IVAI. Anterior cervical procedures performed for trauma, neoplasia, or infection were excluded from this study.

## Outcome measures

Neurological and associated morbidity as well as mortality were recorded.

## Methods

Data were accessed through an institution-wide electronic medical record search through the operative reports of 10 spine surgeons. Hospital and clinical charts of IVAI cases were subsequently reviewed. Demographic data and intraoperative strategies for repair were recorded.

## Results

A total of 1,976 patients underwent anterior cervical spinal procedures in the review period. Six cases of IVAI were identified. In three of the six patients, arterial bleeding was controlled with hemostatic agents. Of these three, two suffered complications. The initial management of controlling arterial bleeding is by hemostatic agents; however, one must also consider repair or ligation. The remaining three patients were treated with primary repair or ligation, and no complications were noted.

## Conclusions

IVAI is a rare complication (0.3%) of anterior cervical procedures. The arterial bleeding can usually be controlled with topical hemostatic agents, but mortality may occur in instances where it cannot be adequately addressed in a timely fashion.



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## Keywords

Vertebral artery; Anterior cervical spine; Cervical corpectomy; Anterior cervical discectomy and fusion (ACDF); Iatrogenic

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