

# Atlantooccipital dislocation

Occipitocervical dissociation (OCD) or atlantooccipital dislocation (AOD) was first described by Blackwood in [1908](#) and was considered quite rare as compared to another [cervical spine injury](#).

## General information

Atlantooccipital dislocation (AOD), AKA craniocervical junction dislocation, AKA “internal decapitation” (often by the lay press): disruption of the stability of the craniocervical junction (which results from ligamentous injuries). Probably underdiagnosed, may be present in  $\approx 1\%$  of patients with “cervical spine injuries” (definition of cervical spine injuries not specified), found in 8–19% of fatal cervical spine injury autopsies.

More than twice as common in pediatrics as in adults, possibly owing to the flatter (i.e., less cupped) condyles in peds, the higher ratio of cranium-to-body weight, and increased ligamentous laxity. Patients usually either have minimal neurological deficits or exhibit bulbar-cervical dissociation (BCD). Some may exhibit cruciate paralysis. Most mortality results from anoxia due to respiratory arrest as a result of BCD.

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Atlanto-occipital dislocation occurs 5 times more commonly in children than adults, and is believed to be caused by hyperextension.

## Clinical

[Atlantooccipital dislocation clinical features](#).

## Treatment

### Initial management

If AOD is suspected, immediately immobilize the neck with halo orthosis or with sandbags. ✖ Cervical traction is contraindicated to reduce AOD because there is a 10% risk of neurologic deterioration.

### Subsequent management

Controversial whether operative fusion vs. prolonged immobilization (4–12 months) with halo brace is required. However, posterior occipitocervical fusion is usually recommended.

Level III

1)

- internal fixation & arthrodesis (fusion) using one of a variety of methods
- ✕ CAUTION: cervical traction is not recommended in the management of AOD

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The most frequent method used to treat this condition is occipitocervical fusion. There has been a tendency in recent years to minimize the extent of stabilization, performing occipitotlantal fusion only. However, it is difficult to achieve a solid fusion between C0 and C1, and the long-term effect of the insufficiency of lig. alaria on C0-C2 stability is unknown <sup>2)</sup>.

## Outcome

[Atlantooccipital dislocation outcome.](#)

## Case reports

[Atlantooccipital dislocation case reports.](#)

1)

Theodore N, Aarabi B, Dhall SS, et al. The diagnosis and management of traumatic atlanto-occipital dis- location injuries. Neurosurgery. 2013; 72 Suppl 2: 114-126

2)

Jeszenszky D, Fekete TF, Lattig F, Bognár L. Intraarticular atlantooccipital fusion for the treatment of traumatic occipitocervical dislocation in a child: a new technique for selective stabilization with nine years follow-up. Spine (Phila Pa 1976). 2010 May 1;35(10):E421-6. doi: 10.1097/BRS.0b013e3181c91fa1. PubMed PMID: 20393390.

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