



## ORAL PRESENTATION

# Proatlantal artery type I: a case report of a persistent carotid-vertebrobasilar anastomosis

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### Abstract

**Background:** The proatlantal artery is the most proximal of four intersegmental carotid-vertebrobasilar anastomoses, which are present for a few days in the embryonic period. In the adult, it persists as the horizontal segment of the vertebral arteries (VA). In some cases, it might persist as a primitive carotid-vertebrobasilar anastomosis between the lower segment of the internal carotid artery (ICA) - type I; or less commonly, from the external carotid artery (ECA) - type II. Rarely, it originates from the common carotid artery. This artery reaches the basilar artery by crossing the occipito-atlantal space and foramen magnum and is often associated with hypoplasia or agenesis of the VA.

**Case Description:** An 84-year-old male, with history of hypertension, dyslipidaemia and atrial fibrillation, was submitted to a diagnostic angiography for further characterisation

of a complete occlusion of the right ICA and lack of flow on both VA, documented on carotid ultrasound imaging. There was no past history of cerebrovascular events. The angiogram confirmed total occlusion of the right ICA bulb segment, and crossflow to the right anterior and middle cerebral arteries through the anterior communicating artery. The origin of both VA was not visualised. The basilar artery and posterior cerebral arteries were supplied by an anastomosis between the left internal carotid artery and the basilar artery - the proatlantal artery (type I).

**Conclusion:** Knowledge of the vascular morphogenesis enables the neuroradiologist to distinguish between a pathologic or variant vessel and to understand its importance for the maintenance of the hemodynamic balance of the encephalic circulation.

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