

Proatlantal intersegmental artery

The proatlantal intersegmental artery is one of the [persistent carotid-vertebrobasilar anastomoses](#).

It maintains the [posterior circulation](#) until the [vertebral artery](#) are fully developed between the seventh and eighth gestational weeks. When this artery fails to obliterate, it becomes persistent one. The proatlantal intersegmental artery, most commonly, is an incidental finding or it may be of clinical significance in some patients ¹⁾

Classification

Two types depending on its origin:

Type I

(~55%) also known as the proatlantal intersegmental artery arises from the internal carotid artery corresponds to the first segmental artery

During color Doppler examination of a 41-year-old man who presented with vertigo, a right vertebral artery could not be found. Both MR angiography and digital subtraction angiography revealed a large anastomotic vessel between the right internal carotid and vertebral artery. It was thought to be type I proatlantal artery. Furthermore, the external carotid arteries were bilaterally absent. Although each vascular anomaly mentioned above is rare, it even more rare for these variations to occur simultaneously ²⁾.

Type II

[Type 2 Proatlantal Intersegmental Artery](#)

Differential diagnosis

It can be easily confused for another [persistent carotid-vertebrobasilar anastomoses](#), the [persistent primitive hypoglossal artery](#) but a key differentiator is that proatlantal arteries courses through the [foramen magnum](#) whereas the persistent hypoglossal artery courses through the [hypoglossal canal](#).

Case reports

Bilateral proatlantal intersegmental arteries are an extremely rare occurrence, of which only 3 cases

have been reported in the literature. An analysis of vascular anomalies associated with Galen's vein malformations revealed 3 children in whom persistence of type II proatlantal arteries was seen. These included one child in whom proatlantal arteries were persistent bilaterally. We report the clinical and angiographic findings and discuss the embryologic and therapeutic implications of this unique association ³⁾.

A case of the proatlantal intersegmental artery (PIA) arising from the external carotid artery (ECA) is presented. The PIA gave rise to the occipital artery, a finding which may support the hypothesis that the distal part of the occipital artery is derived from it. The possibility that the PIA of ECA origin might be a hypertrophied collateral occipital artery is also suggested. The importance of the anteroposterior view in differentiating the PIA of ECA origin from the first cervical intersegmental artery is stressed ⁴⁾.

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⁴⁾
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