INFREQUENT DIAGNOSIS OF THE LUSORY RIGHT VERTEBRAL ARTERY: REPORT OF TWO CASES AND THEIR CLINICAL IMPLICATIONS.

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ABSTRACT

The right and left vertebral arteries originate, most commonly, from the corresponding subclavian arteries, without presenting a mediastinal path. The anomalous origin of the right vertebral artery is quite rare, with few cases described in the literature and, in general, it is an incidental finding in imaging studies. The vertebral artery with anomalous origin can present a retroesophageal path, and thus it can be called lusory right vertebral artery.

KEYWORDS

Vertebral artery; Anatomic Variation; Computed tomography.

Introduction

The vertebral artery originates, most commonly, from the postero-superior aspect of the proximal segment of the corresponding subclavian arteries, following a cervical path through the foramen of the transverse processes from C1 to C6, without presenting a mediastinal path. Among the anomalous origins of these vessels, the most common is the left vertebral artery originating directly from the aortic arch, between the left common and subclavian carotid arteries, with a prevalence ranging from 2.4% to 5.8% and, in these cases, the vertebral artery usually enters the transverse foramen of C4-C5 instead of C6 1,6.

The anomalous origin of the right vertebral artery is less frequent, being quite rare, with few cases described in the literature. This variation can be divided into three categories: direct origin of the aortic arch, origin of the carotid or brachiocephalic arteries, duplicate origin. The vertebral artery with anomalous origin can present a retroesophageal mediastinal path, being called lusory vertebral artery 3.

Objective and Method

To describe two cases of right vertebral arteries with anomalous origins in the aortic arch and retroesophageal mediastinal pathways, being incidental findings in angiography exams.

Discussion

The aortic arch appears as a continuation of the ascending aorta, being oriented most commonly from anterior to posterior and from right to left. In 70% of cases, it has three branches: brachiocephalic trunk, left common carotid artery and left subclavian artery.

The anatomical variants of the aortic arch result from an abnormal segmental arterial interruption during embryogenesis, and some of them may be associated with congenital malformations and even cause compression on adjacent structures, such as the trachea and esophagus 3.

Among the numerous anatomical variants, one of the most common is the right subclavian artery as the last branch of the aortic arch and describing a retroesophageal pathway, which can cause esophageal compression, characterizing lusory dysphagia. The anatomical variants involving the vertebral arteries are less frequent and, when these vessels have a direct origin in the aortic arch in addition to a retroesophageal path, we can call them the lusory vertebral artery 3.

The diagnosis of anomalous vertebral artery is most commonly done incidentally, as the vast majority of patients are asymptomatic. However, this anatomical variation may represent an independent risk factor for arterial dissection and coarctation of the thoracic aorta 2,3.
Figure 3 (Case 1): Sagittal MIP (A), axial (B) and coronal MIP (C) reformatted tomographic sections oblique, showing path of the right lusory vertebral artery between the right transverse process of D1 and the first right costal arch (red arrows).

Figure 4 (Case 2): Lusory right vertebral artery originating from the aortic arch (red arrow) describing a path posterior to the esophagus (yellow arrow) and trachea (blue arrow).

Figure 5/Case 2: Lusory right vertebral artery originating in the aortic arch (red arrow in C), describing a path posterior to the esophagus and trachea, ascending in the right paravertebral region, between the transverse-costal and costo-vertebral joints of D1 (blue arrow in B), and from there through the transverse processes of the cervical vertebral bodies, from C7 (blue arrow in A). Observe a small descending branch starting from the vertebral artery, irrigating the esophagus (green arrows in C).

References