

INTRACRANIAL INTRASELLAR KISSING CAROTID ARTERIES

Case report

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ABSTRACT - Intracranial "kissing" carotid arteries are a rare variant of the carotid arteries, where both internal carotid arteries deviate medially and touch each other near the midline within the sphenoid sinus or the sphenoid bone, including the sella. This anomaly is particularly important since it may cause or mimic pituitary disease and also may complicate transsphenoidal surgery. We report a rare case of intracranial intrasellar kissing carotid arteries in a 57-years-old woman that was submitted to a computed tomography angiography during investigation of a sudden headache, and to discuss the clinical relevance of this radiological finding.

KEY WORDS: kissing carotid arteries, transsphenoidal surgery, pituitary adenoma, computed tomography angiography.

Artérias carótidas intracranianas intra-selares "que se beijam": relato de caso

RESUMO - Artérias carótidas intracranianas "que se beijam" representam rara variação da anatomia arterial, onde ambas as artérias carótidas internas desviam-se medialmente e tocam-se próximo à linha média dentro do seio esfenoidal ou do osso esfenóide, incluindo a sela túrcica. Essa anomalia é particularmente importante, pois pode causar ou simular doença pituitária e ainda pode complicar uma cirurgia transesfenoidal. Relatamos um raro caso de artérias carótidas intracranianas "que se beijam" em mulher de 57 anos, a qual foi investigada por angiotomografia por quadro de cefaléia súbita. Discutimos a relevância clínica desse achado radiológico.

PALAVRAS-CHAVE: artérias carótidas que se beijam, cirurgia transesfenoidal, adenoma de hipófise, angiotomografia.

Intracranial kissing carotid arteries are a rare variant of the carotid arteries, where both internal carotid arteries deviate medially and touch each other near the midline within the sphenoid sinus or the sphenoid bone, including the sella¹. Its prevalence is not found in literature. This anomaly is particularly important since it may cause or mimic pituitary disease^{1,2} and also may complicate transsphenoidal surgery^{1,3,4}.

We report a rare case of intracranial intrasellar kissing carotid arteries documented by computed tomography angiography (CTA) and discuss its clinical relevance.

CASE

A 57-year-old Caucasian woman, with a negative past medical history, sought treatment after experiencing a sudden and atypical headache some days before the medical appointment. She also referred recurrent episodes of dizziness for almost three months. There were no other complaints. The patient's neurological examination was intact.

Imaging investigation – The CTA revealed intracranial intrasellar kissing carotid arteries (Figs 1, 2 and 3).

Treatment and outcome – Conservative treatment was the choice for this patient. After a six months follow-up clinical examination, she was asymptomatic and had no other complaints.

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Fig 1. CTA (Axial View): Intracranial intrasellar kissing carotid arteries.

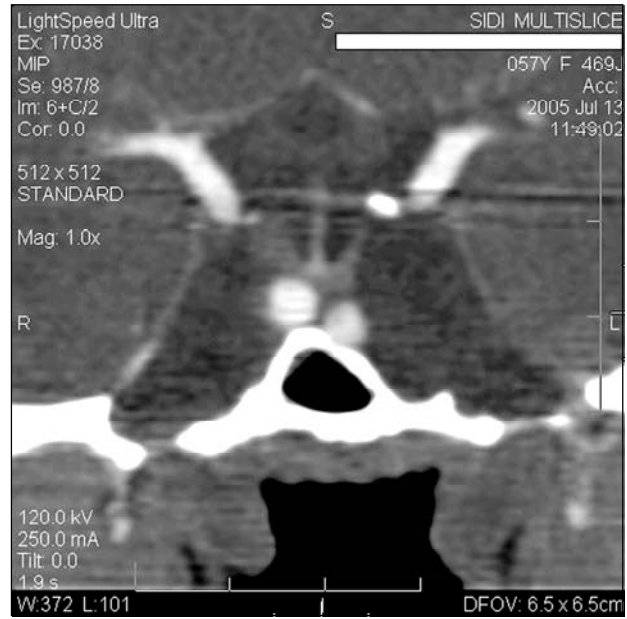


Fig 2. CTA (Coronal View): Intracranial intrasellar kissing carotid arteries.

The patient agreed with the publication of her case.

DISCUSSION

The internal carotid artery is divided into four parts: the C1 or cervical portion extends from its junction with the common carotid artery to the external orifice of the carotid canal; the C2 or petrous portion courses within the carotid canal and ends where the artery enters the cavernous sinus; the C3 or cavernous portion courses within the cavernous sinus and ends where the artery passes through the dura mater forming the roof of the cavernous sinus; and the C4 or supraclinoid portion begins where the artery enters the subarachnoid space and terminates at the bifurcation into the anterior and middle cerebral arteries⁵⁻⁷. The distance separating the medial margin of the internal carotid artery from the lateral surface of the pituitary gland usually varies from 1 to 3 mm⁸. Dolichoectatic internal carotid arteries, especially in patients with acromegaly², may deviate medially and at times meet or kiss each other within the sella⁴. In this circumstance, some clinical aspects must be considered.

Hormonal dysfunction may overcome due to pituitary stalk compression causing interference with the delivery of releasing and inhibiting factors to the pituitary and direct destruction of pituitary tissue by the mass effect. Often a combination of these mechanisms is present^{9,10}. Other anomalies of the internal carotid arteries such as intracranial aneurysms locat-

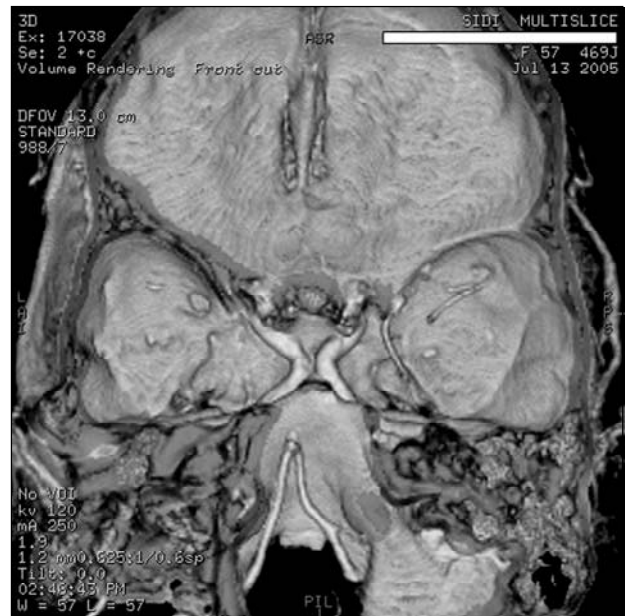


Fig 3. CTA – 3D Reconstruction (Axial View): Intracranial intrasellar kissing carotid arteries.

ed inside the sella or in the parasellar region with intrasellar extension are also reported in literature as a cause of pituitary dysfunction^{9,11-18}.

The finding of intracranial intrasellar kissing carotid arteries may also complicate transsphenoidal approaches^{1,3,4}. Nowadays transsphenoidal surgery is a well established procedure and the principal surgical technique for removal of most pituitary tumors. This approach is considered to be safe with mortali-

ty rates less than 1%. Nevertheless, various complications of this procedure have been reported¹⁹⁻²¹. Vascular complications can contribute to serious morbidity and mortality²⁰⁻²³, therefore transsphenoidal surgery can be hazardous in patients with intracranial intrasellar kissing carotid arteries and its presence must be always excluded by preoperative imaging evaluation.

In conclusion, intracranial intrasellar kissing carotid arteries are a rare anomaly and they can be incidentally found in brain imaging evaluation with CTA. Its clinical relevance must be always remembered, since it may cause or mimic pituitary disease and also may complicate transsphenoidal surgery.

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