CASE REPORT

Accidental and potentially life-threatening finding: pulsatile mass of the hypopharynx

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SUMMARY

Anatomical variations of the cervical part of the internal carotid artery (ICA) are not rare in the general population. They are usually asymptomatic and more common in the elderly. We report the case of a 70-year-old Caucasian woman who was referred to our department due to chronic cough. We performed a flexible nasofibrolaryngoscopy that demonstrated the presence of a pulsatile mass in the hypopharynx. After performing a cervical contrast-enhanced CT, the mass turned out to be an aberrant variation of the cervical part of the ICA. This case is intended to alert otolaryngologists, anaesthesiologists, radiologists and surgeons for this accidental finding and the possible consequences for the patient if not diagnosed and properly oriented.

BACKGROUND

Anatomical variations of the cervical part of the ICA affect 10%–40% of the general population and are usually asymptomatic.¹ Despite this benign clinical presentation, this anatomical variant may be potentially fatal if undiagnosed and untreated.^{2–4}

CASE PRESENTATION

We are reporting the case of a 70-year-old Caucasian woman who was referred to our department with a 20-year-old history of cough. She denied smoking and alcohol consumption. She had a personal history of asthma, non-allergic rhinitis, arterial hypertension, dyslipidaemia, chronic gastritis, gastro-oesophageal reflux disease and anxiety. These conditions were treated with montelukast (10 mg/day), inhaled salmeterol and fluticasone propionate (50 µg and 100 µg), fluticasone furoate nasal spray (27.5 µg/day), loratadine (10 mg/day), losartan (50 mg/day), bisoprolol (2.5 mg/day), atorvastatin (20 mg/day), pantoprazole (20 mg/day) and triazolam (0.25 mg/day).

Physical examination was unremarkable, except for the flexible nasofibrolaryngoscopy that revealed a pulsatile mass on the posterior-right side of the hypopharynx (figure 1). On this finding, a contrast-enhanced CT of the neck was ordered and demonstrated accentuated tortuosity of the internal carotid artery (ICA), with a medialised path over the right paramedian retropharyngeal space, being responsible for a moderate asymmetric bulging of the right posterior wall of the hypopharynx (figure 2A,B).

Figure 1 Image obtained from the nasofibrolaryngoscopy demonstrating a pulsatile mass of the right posterior wall of the hypopharynx (white arrow).

INVESTIGATIONS

Since rhinitis was controlled and otorhinolaryngological examination found no other possible cause for the patient's symptom, the patient was referred to the departments of pneumology and gastroenterology to exclude respiratory and gastric cough causes.

OUTCOME AND FOLLOW-UP

Taking into account the incidental finding of this anatomical variation, the absence of symptoms, the advanced age of the patient and the risks of a surgical correction, a conservative approach was

Figure 2 Coronal (A) and axial (B) sections of cervical contrast-enhanced CT demonstrating an accentuated tortuosity of the internal carotid artery, with a medialised path over the right paramedian retropharyngeal space (A—white arrow) being responsible for a moderate asymmetric bulging of the right posterior wall of the hypopharynx (B—white arrow).

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chosen. The patient continues to be followed in our department as well as in the department of pneumology and gastroenterology, with improvement of cough symptoms after therapeutic optimisation. No complications until the present moment have been documented.

DISCUSSION

The ICA typically has a vertical, straight, upward trajectory to the base of the skull, without giving off any branches.¹

Despite this classic trajectory, most authors have reported that 10%–40% of the general population has an aberrant course of the ICA and this may be underdiagnosed.¹ In most of the cases, these anomalies are unilateral, affect more frequently the right carotid artery and are more common in the elderly women.^{1 4 5} Despite having an unclear physiopathology, most of the studies have advocated congenital causes or acquired factors (such as arterial hypertension or atherosclerosis) as the main causes implicated in aberrant ICA anomalies.⁴

Aberrant ICAs are usually asymptomatic and encountered accidentally.¹ When symptomatic, a variety of symptoms are described and they depend on the location of the anatomical alteration. The described symptoms are sore throat, dysphagia, dysphonia, foreign body sensation in the pharynx and obstructive sleep apnoea.^{2 6–8}

Although aberrant ICAs are usually benign and accidental, it is important to recognise and to take into account their potential complications. Common otorhinolaryngological procedures (adenoidectomy, tonsillectomy, uvulopalatopharyngoplasty,

drainage of tonsillar or parapharyngeal abscesses, open head and neck surgeries), anaesthetic procedures (endotracheal intubation, blockage of the glossopharyngeal nerve by local transoral anaesthesia, insertion of nasogastric tubes) and radiological procedures (endoluminal treatment of atherosclerosis or aneurysms) may potentially harm these patients.^{1–4 6}

This case aims to alert otolaryngologists, anaesthesiologists, radiologists and surgeons for this accidental finding and the possible consequences for the patient if not diagnosed and properly oriented.

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Learning points

- Anatomical variation of the internal carotid artery (ICA) is not rare.
- These anomalies are usually asymptomatic and more frequent in the elderly.
- The close relationship of the cervical part of the ICA with the pharyngeal wall makes these findings of crucial importance, given that it is a common site of otorhinolaryngological surgery or anaesthetic manipulation.

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