

## TWO SUCCESSIONAL INCIDENTAL FINDINGS IN THE SAME PATIENT – WHAT WOULD YOU DO?

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### ABSTRACT

Incidental findings become more frequent as health care becomes accessible and medical investigations get more efficient and effective. We report the case of a completely asymptomatic 58 year-old female referred to our service for further investigation of an incidental finding: a right carotid artery stenosis. The investigations made in our department unveiled another incidental finding: an anterior communicating artery aneurysm. This complicated vascular pathology and the particularities of the case make the long-term therapeutic decision a difficult one to make.

**Key words:** carotid artery stenosis, unruptured anterior communicating artery aneurysm, incidental findings, therapeutic decisions

### CASE REPORT

We report the case of a 58 year-old Caucasian female patient referred to the Neurology Department for further investigation of an incidental finding – a right internal carotid artery (ICA) stenosis of approximately 70% detected on ultrasound examination of the cervico-cerebral arteries.

The patient is nonsmoker, known to suffer from hyperlipidaemia and hypertension and has no family history of cardio-vascular disease.

On admission the patient was conscious, well-oriented, BMI = 23 kg/m<sup>2</sup>, blood pressure – 115/80 mmHg, heart rate – 72 bpm, temperature – 36,6° C, without neck stiffness, cranial nerve deficits, motor or sensory deficits; no gait, coordination or language abnormalities were found; the osteo-tendinous reflexes were symmetric, and no pathological reflexes were present.

The laboratory tests showed a normal blood count, coagulation and biochemistry panel except for slight hypercholesterolemia.

During hospitalization a head computed tomography (CT) and angioCT was performed which confirmed the presence of a right ICA stenosis and also showed an anterior communicating artery (ACoA) aneurysm (figure 1 and 2). No images

suggestive of ischemic stroke, either acute or not, were found.

A cerebral angiography was performed to better assess the degree of stenosis and the dimensions of the aneurysm. The selective catheterization of the right common carotid artery (CCA) (figure 3) showed severe (90%) stenosis at the origin of the right ICA and an aneurysm of 4-5 mm with wide pediculum situated on the ACoA (figure 4). The selective catheterization of the left CCA showed no abnormalities but the ACoA aneurysm didn't fill through this route.

### DISCUSSION

Unruptured intracranial aneurysms are diagnosed with increasing frequency as cerebral imaging techniques improve and are applied more commonly and are generally treated electively. The following are three options of treating intracranial aneurysms [1].

- observation;
- craniotomy and clipping;
- endovascular coiling.

The International Study of Unruptured Intracranial Aneurysms (ISUIA) aimed to assess the natural history of unruptured aneurysms and to measure

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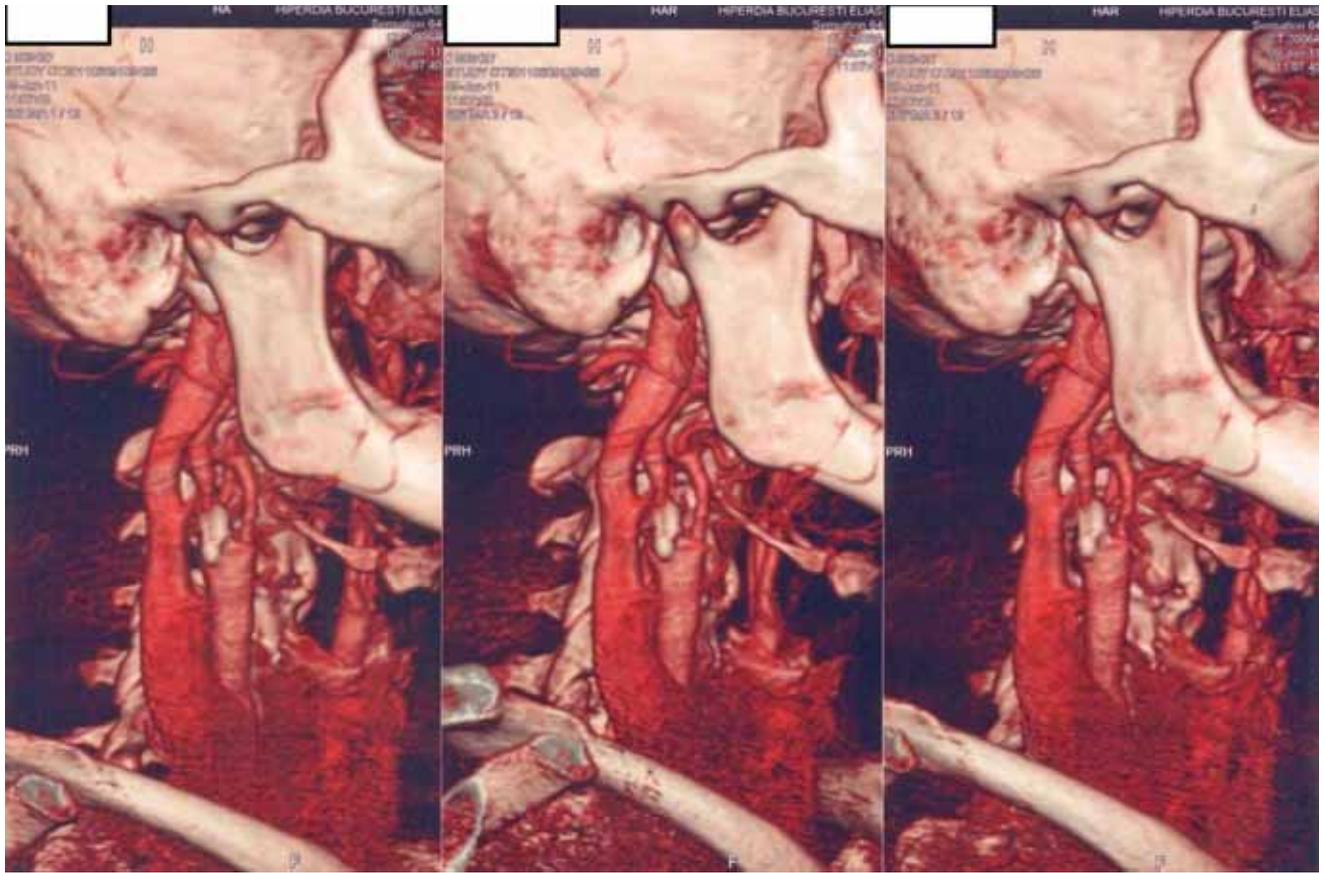


Figure 1. AngioCT: right ICA stenosis.

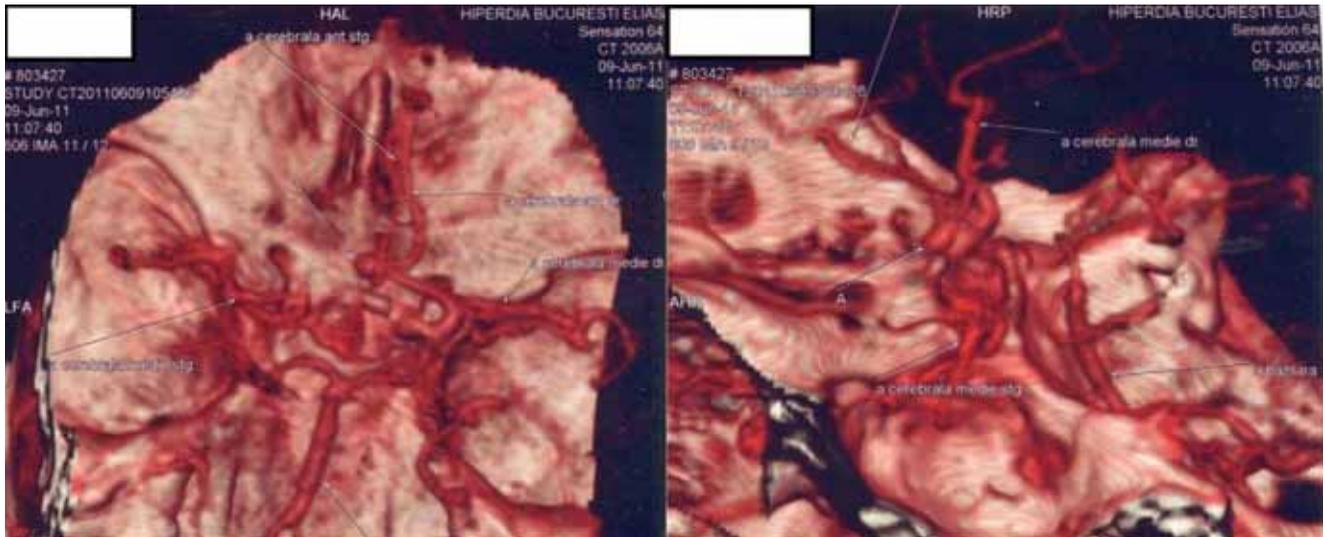


Figure 2. AngioCT: anterior communicating artery aneurysm.

the risk associated with their treatment. The results showed that for unruptured aneurysms in the internal carotid, anterior communicating, anterior cerebral, and middle cerebral arteries, the seven and a half-year rupture rate of lesions with diameters less than 10 mm was less than 0.4% which corresponds to a yearly 0.05% rupture rate. [2, 3]

The European Federation of Neurological Societies Guidelines on Ischemic Stroke and Transient Ischemic Attack states that carotid surgery is not recommended for asymptomatic individuals with significant carotid stenosis (NASCET 60-99%), except in those at high risk of stroke (Class I, Level C) [4]; also carotid angioplasty, with or without

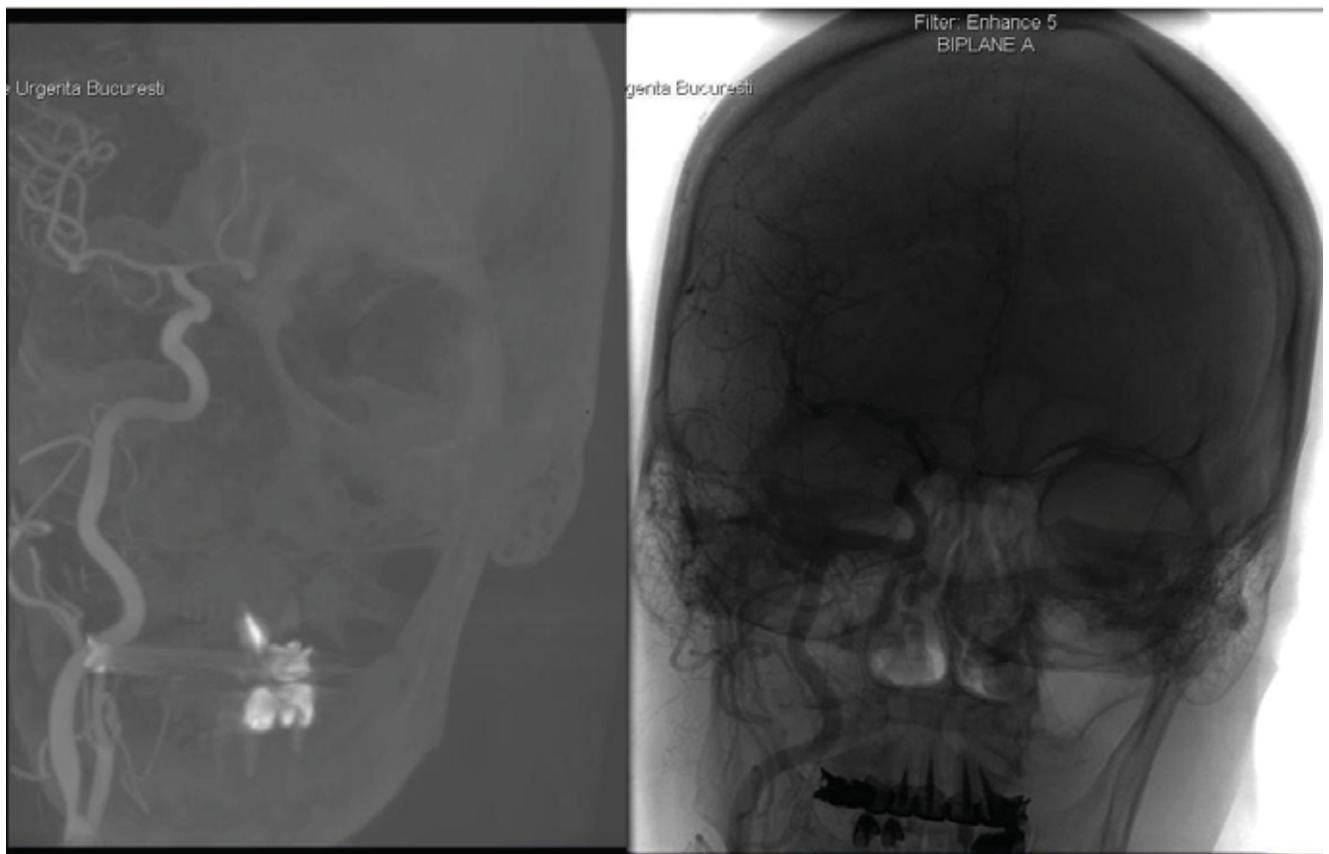


**Figure 3.** Cerebral angiography: right ICA stenosis

stenting, is not recommended for patients with asymptomatic carotid stenosis (Class IV, GCP) [4].

Given that the carotid artery stenosis is completely asymptomatic and that the aneurysm is both of small dimensions and also haemodynamically protected (it is only filled by the stenotic ICA), neither the ICA stenosis nor the ACoA aneurysm has an indication for invasive treatment but for maximal medication and periodical observation.

However, if the right ICA stenosis becomes symptomatic there will be the need of revascularization by either carotid endarterectomy or carotid angioplasty and stenting [4]. But the treatment of the ICA stenosis will radically change the haemodynamics of the anterior cerebral circulation, vastly increasing the risk of aneurysmal rupture. Also, the ACoA aneurysm cannot be treated by endovascular coiling as the endovascular catheters required for coiling can't pass through the right ICA stenosis and the left ICA doesn't communicate with the aneurysm. So the only option is craniotomy and clipping of the ACoA aneurysm followed by either carotid endarterectomy or carotid angioplasty and stenting.



**Figure 4.** Cerebral angiography: ACoA aneurysm

## CONCLUSION

For the time being the patient was released from the hospital with maximal medication – antiplatelet,

hypolipaeimant and antihypertensive therapy – and will be monitored periodically by ultrasound examination of the cervico-cerebral arteries and cerebral angiography.

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