Endocrine (2019) 64:420–421
https://doi.org/10.1007/s12020-019-01866-4

ENDOCRINE IMAGING

Pituitary crush

Parin Rattananon[1] · Sakditad Saowapa[1] · Chutintorn Sriphrapradang[1]

Received: 28 January 2019 / Accepted: 6 February 2019 / Published online: 15 February 2019

A 77-year-old cachectic man presented with a 1-month history of dizziness, nausea, vomiting, poor appetite, and weight loss. Four months earlier, he had peptic ulcer perforation and superior mesenteric artery pseudoaneurysm successfully treated with surgical repair. Reduced visual acuity was detected in both eyes. He had a right relative afferent pupillary defect along with the pale optic disc. Serum sodium was 108 mEq/L. Further investigations revealed secondary adrenal insufficiency with a morning cortisol of 2.5 mcg/dL and an adrenocorticotropic hormone (ACTH) level of 16 pg/mL. Low free thyroxine levels of 0.68 ng/dL (reference range, 0.93–1.6) and low thyroid-stimulating hormone (TSH) of 0.074 mIU/L (reference range, 0.35–4.94) were also discovered. Serum testosterone was <20 ng/dL with low follicle-stimulating hormone (FSH) of 1.1 mIU/mL, and high prolactin levels of 53.5 ng/mL (reference range, 4.0–15.2). Hormonal investigations were compatible with panhypopituitarism. Dizziness and hyponatremia were rapidly resolved after glucocorticoid and levothyroxine replacement. Magnetic resonance imaging (MRI) of the pituitary showed bilateral giant internal carotid arteries aneurysms with pressure effect to the pituitary gland (Fig. 1). The final diagnosis was unruptured bilateral cavernous carotid aneurysm. Due to patient frailty, he received conservative management. Six weeks later, he passed away from severe pneumonia.

Cavernous carotid aneurysms: a rare cause of hypopituitarism

Cavernous carotid aneurysms are rare and represent 2–9% of all intracranial aneurysms [1]. The exact etiology is not known, but it may be caused by degenerative change, trauma, or infection. Most patients often present with neuro-ophthalmic manifestations, e.g. diplopia, retro-orbital pain, headache, diminished vision. Rare but serious complications are cerebral infarction, carotid cavernous fistula, massive epistaxis, and subarachnoid hemorrhage. When aneurysm extends into the sellar region, it rarely cause hypopituitarism with the prevalence of 0.17% [2]. Cavernous carotid aneurysms can mimic pituitary tumors and potentially result in catastrophic events if they are not recognized. Hypopituitarism may be caused by interfering with pituitary blood flow and direct pressure effect on the pituitary gland. Indications to treat cavernous carotid aneurysms are symptomatic mass effect, symptoms from acute thrombotic changes, ruptured aneurysm, bony erosion, radiographic evidence of projection into subarachnoid space, underlying coagulopathy, large aneurysm (>10 mm), and evidence of aneurysm growth. Endovascular intervention is the effective treatment. Direct surgery is reserved for cases of failure to endovascular intervention [3].

Compliance with ethical standards

Conflict of interest The authors declare that they have no conflict of interest.

Ethical approval This article does not contain any studies with human participants or animals performed by any of the authors.

Informed consent Informed consent was obtained from the patient's relative to publish his medical records in anonymous form.

Publisher's note: Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

✉ Chutintorn Sriphrapradang
chutins@gmail.com

[1] Faculty of Medicine Ramathibodi Hospital, Department of Medicine, Mahidol University, Bangkok 10400, Thailand

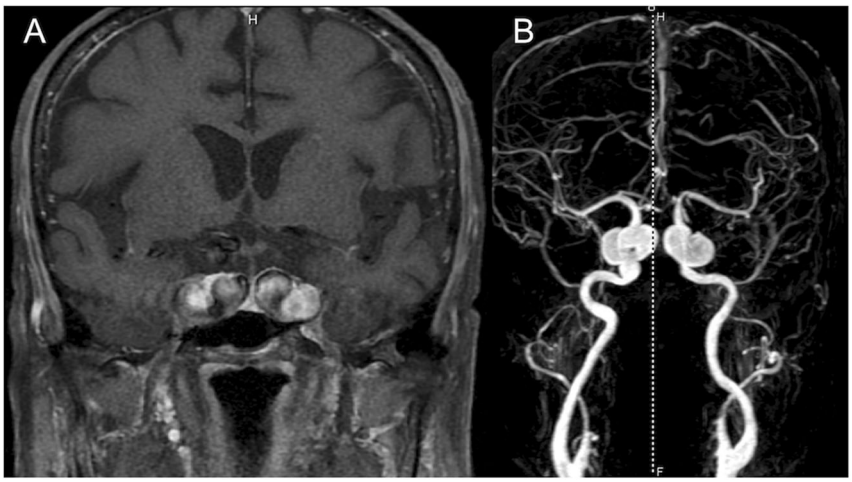

Fig. 1 **a** Contrast T1-weighted magnetic resonance imaging (MRI) coronal image showed bilateral giant cavernous aneurysms with pressure effects "crush" into the pituitary gland. No focal lesion was seen in visualized pituitary gland. **b** MR angiography of the internal carotid arteries demonstrated the presence of large fusiform dilatation with tortuosity of cavernous and supraclinoid segments of bilateral internal carotid arteries

References

1. H. Stiebel-Kalish, Y. Kalish, R.H. Bar-On, A. Setton, Y. Niimi, A. Berenstein, M.J. Kupersmith, Presentation, natural history, and management of carotid cavernous aneurysms. Neurosurgery **57**(5), 850–857 (2005)
2. H.M. Heshmati, V. Fatourechi, S.A. Dagam, D.G. Piepgras, Hypopituitarism caused by intrasellar aneurysms. Mayo Clin. Proc. **76**(8), 789–793 (2001). https://doi.org/10.1016/S0025-6196(11)63222-9
3. S. Ambekar, V. Madhugiri, M. Sharma, H. Cuellar, A. Nanda, Evolution of management strategies for cavernous cartoid aneurysms: a review. World Neurosurg. **82**(6), 1077–1085 (2014)