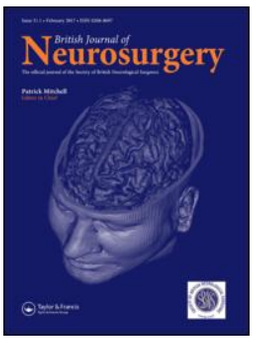

British Journal of Neurosurgery

ISSN: 0268-8697 (Print) 1360-046X (Online) Journal homepage: http://www.tandfonline.com/loi/ibjn20

Neurosurgical image: giant pituitary adenoma and multiple aneurysms

Himanshu Agarwal, Chandril Chugh, Saraj Singh & Prakash Singh

To cite this article: Himanshu Agarwal, Chandril Chugh, Saraj Singh & Prakash Singh (2018): Neurosurgical image: giant pituitary adenoma and multiple aneurysms, British Journal of Neurosurgery, DOI: 10.1080/02688697.2018.1429571

To link to this article: https://doi.org/10.1080/02688697.2018.1429571

Published online: 26 Jan 2018.

BRITISH JOURNAL OF NEUROSURGERY, 2018
https://doi.org/10.1080/02688697.2018.1429571

Taylor & Francis
Taylor & Francis Group

NEUROSURGICAL IMAGE

Neurosurgical image: giant pituitary adenoma and multiple aneurysms

Himanshu Agarwal, Chandril Chugh, Saraj Singh and Prakash Singh

Department of Neurosciences, Max Superspeciality Hospital Saket, New Delhi, India

ABSTRACT

Pituitary adenomas are associated with intracranial aneurysms. Giant non-functioning pituitary adenomas with aneurysms in their vicinity pose technical surgical challengesas aneurysm rupture can be catastrophic during surgery. We present the case of a middle aged women who presented with progressive visual loss in both eyes caused by a giant pituitary adenoma compressing the optic chiasma. She also had associated mirror image carotid aneurysms embedded in the tumour. They were successfully coiled preoperatively and the tumour was removed safely with improvement of her symptoms.

ARTICLE HISTORY
Received 6 December 2017
Revised 15 January 2018
Accepted 15 January 2018

KEYWORDS
Aneurysm; pituitary; adenoma; coiling

We present a case of a 49 year old woman who presented with progressive blurring of vision in both eyes for the past six months. MRI brain showed a giant pituitary adenoma causing compression on the optic chiasma (Figure 1). Further workup confirmed that it was a non-functional adenoma. MRA also showed incidental mirror aneurysms arising from both internal carotid arteries in the region of the carotid cave (Figure 2). Aneurysms were medially directed and embedded in the tumour. The patient underwent a DSA to confirm the MRI findings. DSA showed that the right ICA aneurysm measured 7 mm × 10 mm with a 5 mm neck, while the aneurysm on left ICA measured 3 × 2.5 mm with a 3 mm neck (Figure 3). They were treated with endovascular balloon assisted coiling (Figure 4), to minimize the risk of intraoperative complications during tumour surgery. She then underwent trans-nasal, trans -sphenoidal tumour decompression two days after coiling. Visual acuity in both eyes improved after surgery and she was subsequently discharged home without any complications.

Intracranial aneurysms are associated with pituitary adenomas.[1] Various hypotheses have been postulated to explain this, such as, increased blood flowin vessels supplying the tumouror direct infiltration of vessel walls by the tumour.[2] Most of these aneurysms are diagnosed incidentally during tumourworkup. Rarely, aneurysms can present with pituitary apoplexy or

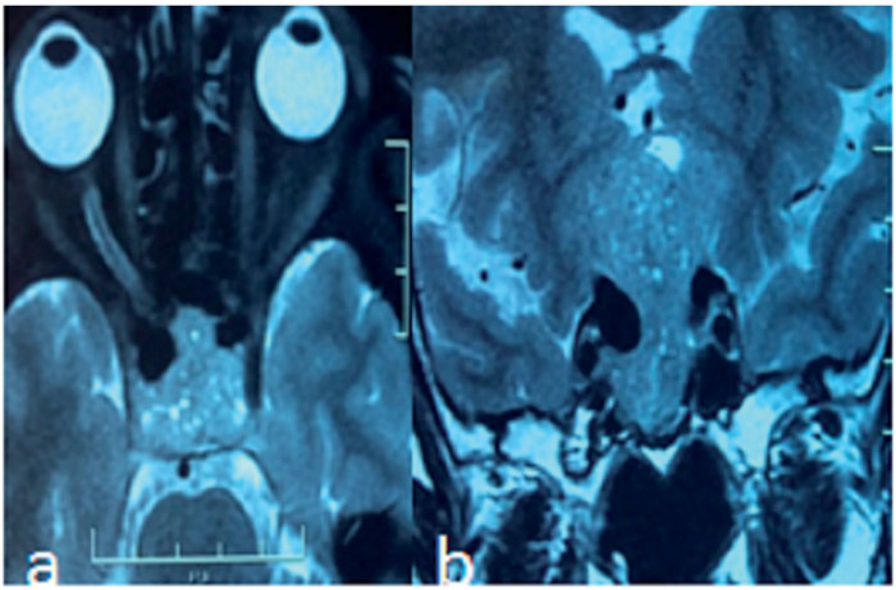

Figure 1. Axial (a) and coronal (b) T2W images showing large pituitary adenoma with saccular flow voids embedded in tumour, suggesting aneurysms arising from internal carotid arteries.

CONTACT Himanshu Agarwal himanshu.20rd@gmail.com West Block Max Superspeciality Hospital, First Floor, Saket, New Delhi, 110017 India

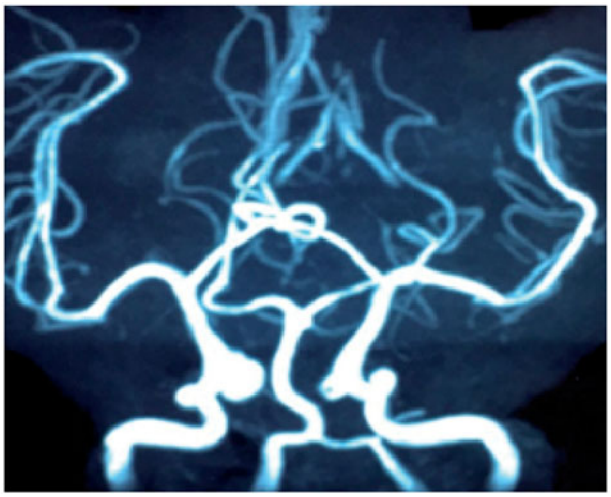

Figure 2. Time of flight MRA showing mirror aneurysms arising from bilateral ICA's directed medially.

epistaxis.[3] Most of these aneurysms arise from the arteries located in the vicinity of the tumour and present a challenge to safe and complete resection, especially for aneurysms which project into the sella. In this case the patient needed urgent surgery to avoid permanent visual loss and this precluded the use of flow diverters or stents, both of which require long term dual antiplatelet treatment. Pre-operative balloon assisted endovascular coiling of these aneurysms is a safe and secure option to achieve aneurysm occlusion without delaying adenoma surgery.[4]

Disclosure statement

No potential conflict of interest was reported by the authors.

ORCID

Himanshu Agarwal http://orcid.org/0000-0001-5409-0062

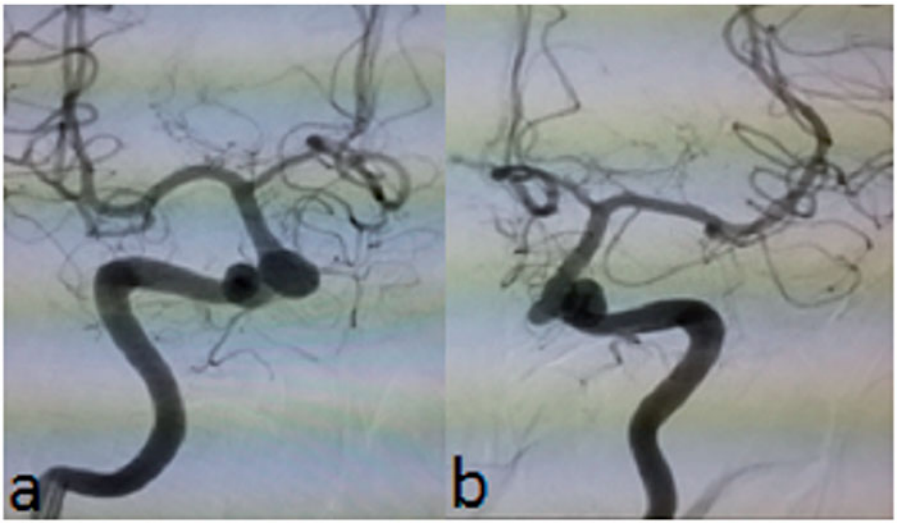

Figure 3. Right (a) and Left (b) ICA angiogram, showing mirror aneurysms arising from bilateral carotid cave, directed medially.

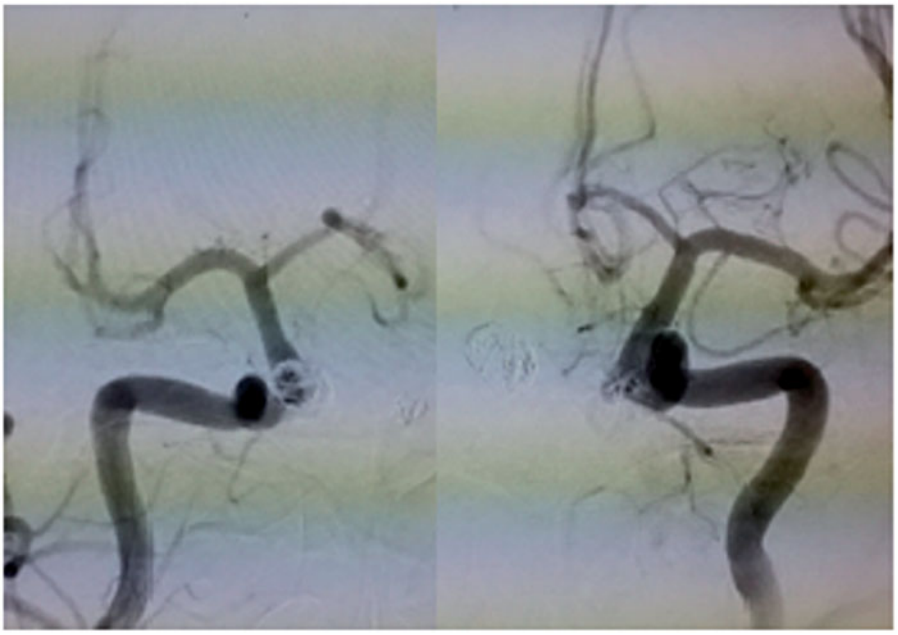

Figure 4. Bilateral ICA angiogram showing occlusion of aneurysms after balloon assisted coil embolisation.

References

1. Pant B, Arita K, Kurisu K, Tominaga A, Eguchi K, Uozumi T. Incidence of intracranial aneurysm associated with pituitary adenoma. *Neurosurg Rev* 1997;20:13–17.
2. Sade B, Mohr G, Tampieri D, Rizzo A. Intrasellar aneurysm and a growth hormone-secreting pituitary macroadenoma. Case report. *J Neurosurg* 2004;100:557–9.
3. Jakubowski J, Kendall B. Coincidental aneurysms with tumours of pituitary origin. *J Neurol Neurosurg Psychiatry* 1978;41:972–9.
4. Yang MY, Chen C, Shen CC. Cavernous aneurysm and pituitary adenoma: management of dual intrasellar lesions. *J Clin Neurosci* 2005;12:477–81.