Incidence of intracranial aneurysm associated with pituitary adenoma

- Basant Pant M.D.,
- Kazunori Arita,
- Kaoru Kurisu,
- Atsushi Tominaga,
- Kuniki Eguchi &
- Tohru Uozumi

Neurosurgical Review **volume 20**, pages13–17 (1997)Cite this article

Abstract

The incidence of in tracranial aneurysm associated with pituitary adenoma is not definitely established although reported higher than in general population. This study was designed to find the existence of such association in a large series of pituitary adenoma cases.

A retrospective study of 467 cases of pituitary adenoma (mean age: 41 ± 15 years) was done. All patients underwent cerebral angiography at least of anterior circulation, detailed hormonal study, and 155 cases had additional magnetic resonance (MR) angiography. Twenty-five cases (5.4%) of pituitary adenoma (mean age 52 years) had intracranial aneurysm, 97% on anterior circulation, and 12% had multiple aneurysms. Two cases presented with aneurysmal rupture and the rest were incidental. Aneurysm was more frequently seen with increasing age ($p < 0.001$) and the age distribution resembled that of aneurysm among general population. Although the combination was most frequent among nonfuctioning adenoma (8.8%), and least frequent among prolactinoma (2.4%), this association was again due to age factor. There was no association between hormone secretion, size and invasive nature of the tumor. The results showed no association between intracranial aneurysm and pituitary adenoma. Our speculation is that such occurrence is merely a chance factor and the risk is no greater than that among general population.

References

1. ACQUI M, L FERRANTE, B FRAIOLI, F COSENTINO, A FORTUNA, L MASTRONARDI: Association between intracranial aneurysm and pituitary adenoma; aetiopathogenetic hypothesis. Neurochirurgia 30 (1987(177–181

   PubMed **Google Scholar**

2. ARTTA K, T UOZUMI, S OKI, S KUWABARA, S OHBA, T NAKAHARA: Moyamoya disease associated with pituitary adenoma-report of two cases. Neurologia Medico-Chirurgica 32 (1992) 753–757

   PubMed **Google Scholar**

3. DU BOULAY GH: Some observations on the natural history of intracranial aneurysms. Br J Radiology 38 (1965) 721–57

   Google Scholar

4. HANDA J, I MATSUDA, H HANDA: Association of brain tumor and intracranial aneurysms. Surg Neurol 6 (1976) 25–29

   PubMed **Google Scholar**

5. HOUSEPIAN EM, JL POOL: A systematic analysis of intracranial aneurysms from the autopsy files of the Presbyterian Hospital, 1914–1956. J Neuropathol Exp Neurol 17 (1958) 409–423

   PubMed **Google Scholar**

6. JAKUBOWSKI J, B KENDALL: Coincidental aneurysm with tumors of pituitary origin. Journal of Neurology, Neurosurgery, and Psychiatry 41 (1978) 972–979

   Google Scholar

7. JORDAN RM, CW KERBER: Rupture of a parasellar aneurysm with a coexisting pituitary tumor. Southern Medical Journal 71 (1978) 741–742

   PubMed **Google Scholar**

8. LIPPMAN HH, BM ONOFRIO, HL JR BAKER: Intrasellar aneurysm and pituitary adenoma: report of a case. Mayo Clin Proc 46 (1971) 532–535

PubMed **Google Scholar**

9. MANGIARDI JR, SN ALEKSEC, M LIFSHITZ, R PINTO: Coincidental pituitary adenoma and cerebral aneurysm with pathological findings. Surg Neurol 19 (1983) 38–41

PubMed **Google Scholar**

10. MCCORMICK WF, GJ ACOSTA-RUA: The size of intracranial saccular aneurysms. J Neurosurg 33 (1970) 422–427

PubMed **Google Scholar**

11. NAKAGAWA T, K HASHI: The incidence and treatment of asymptomatic, unruptured cerebral aneurysm. J Neurosurg 80 (1994) 217–223

PubMed **Google Scholar**

12. OKADA H, N KODAMA, K MINEURA, T SAKAMOTO, J SUZUKI: A ruptured aneurysm associated with pituitary tumor. No Sinkei Geka 8 (1980) 379–381

Google Scholar

13. SEKHAR LN, RC HEROS: Origin, growth, and rupture of saccular aneurysm: a review. Neurosurg 8 (1981) 248–260

Google Scholar

14. TSUCHIDA T, R TANAKA, M YOKOYAMA, H SATO: Rupture of anterior communicating artery aneurysm during transsphenoidal surgery for pituitary adenoma. Surg Neurol 20 (1983) 67–70

PubMed **Google Scholar**

15. WAKAI S, T FUKUSHIMA, T FURIHATA, K SANO: Association of cerebral aneurysm with pituitary adenoma. Surg Neurl 12 (1979) 503–507

Google Scholar

16. WHITE JC, HT JR BALLANTINE: Intrasellar aneurym simulating hypoiphyseal tumors. J Neurosurg 18 (1961) 34–50

PubMed **Google Scholar**