The association of intracranial aneurysms and meningiomas: a hospital-based case–control study

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Dear Editor,

Several reports [1] and one case–control study [2] have suggested a higher prevalence of intracranial aneurysms (IAs) in patients with meningiomas. To further assess the relation between IAs and meningiomas the prevalence of meningiomas in patients with aneurysmal subarachnoid haemorrhage (aSAH) was studied and compared to controls.

A prospectively collected series of 1161 aSAH patients and 1487 patients with ischaemic stroke as controls were used. Both patients and controls had undergone routine non-contrast computed tomography (CT) and CT angiography on admission; the reports were reviewed for the description of meningiomas and when a meningioma was described the images were reviewed to confirm its presence. Proportions of aneurysms and odds ratios (ORs) with corresponding 95% confidence intervals (CIs) were calculated to compare the proportions of meningiomas between patients and controls, and multivariable logistic regression was used to adjust for possible confounding by age, sex, smoking and hypertension.

Thousand one hundred and sixty one aSAH patients and 1487 controls with ischaemic stroke were included. Meningiomas were identified in 11 aSAH patients (0.9%; 95% CI 0.5–1.7) compared to 18 controls (1.2%; 95% CI 0.8–1.9). The crude OR for the presence of meningioma in patients with aSAH was 0.78 (95% CI 0.37–1.66); the adjusted OR was 0.69 (95% CI 0.29–1.68).

It is concluded that in our series of patients with IAs the prevalence of meningiomas was comparable to estimates of the prevalence of meningiomas of 0.9% in the general population [3] and was not increased in comparison with patients with ischaemic stroke from the same institution, even after adjustment for confounders. Thus, the presence of an IA does not increase the risk of meningiomas.

In the case–control study comparing the prevalence of unruptured IAs in patients with meningiomas with that in age- and sex-matched controls [2], the prevalence of IAs in patients with meningiomas was higher than estimates in the general population and statistically significantly higher than in controls. The lower prevalence of meningioma in general (0.9% [3]) compared to that of IAs (3.2% [4]) could explain why more IAs are found in patients with meningiomas whilst on the other hand the prevalence of meningiomas in patients with IAs is not found to be increased. Although meningiomas could possibly be a risk factor for the occurrence of IAs, our study shows that IAs are not a risk factor for the occurrence of meningiomas, A common risk factor for meningiomas and IAs is therefore unlikely.

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Disclosure of conflicts of interest

The authors declare no financial or other conflicts of interest.

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