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**Is pituitary screening necessary in cluster headache?**

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**Background:**

Cluster headache (CH), one of the most painful conditions known to humans, can occur secondary to pituitary disease. To date, it remains unclear as to whether a higher prevalence of pituitary tumours exists in CH patients and, as a result, if pituitary imaging is required in the diagnostic assessment of CH patients. The aim of this study was to determine the incidence of pituitary adenomas in CH patients and to identify clinical predictors of pituitary adenomas in CH patients.

**Methods:**

A retrospective study was conducted of all consecutive patients diagnosed with CH between 2007 and 2017 in a headache center. Data including demographics, attack characteristics, response to treatments and routine pituitary function tests were recorded. Univariate and multivariate analysis using random forests were used to analyse the data.

**Results:**

718 CH patients attended the headache clinic; 643 underwent a standard MRI scan of whom 376 also underwent a dedicated pituitary MRI. Pituitary adenomas occurred in 17 of 376 patients (4.52%). Non-functioning microadenomas (n=13) were the most common abnormality reported. Two patients, one of whom lacked the symptoms of pituitary disease, required treatment for their pituitary lesion. No statistical difference was found between patients with pituitary adenoma and with normal pituitary MRI in terms of demographic, clinical characteristic or response to treatment. Systematic pituitary MRI scanning only benefited a single patient in the entire cohort.

**Conclusion:**

The incidence of pituitary adenomas in CH is similar to that reported in the general population thereby precluding an over-representation of pituitary lesions in CH. We conclude that the diagnostic assessment of CH patients should not include routine pituitary screening. Only patients with standard brain MRI findings or symptoms suggestive of a pituitary disorder require pituitary imaging.

**Classification of evidence:**

This study provides Class IV evidence that routine dedicated pituitary MRI scans are not indicated in CH patients

