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MORPHOLOGICAL AND BIOCHEMICAL FINDINGS IN NASAL MUCOSA FROM CLUSTER HEADACHE PATIENTS

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Nasal congestion and rhinorrhea are among the symptoms most frequently experienced during cluster headache (CH) attacks, usually on the painful side. In this study, we evaluated the morphological aspects of nasal mucosa obtained from either side in 5 drug-free male CH patients, 2 with episodic CH (in active phase) and 3 with chronic CH, according to the criteria of the International Headache Society. The mean ± SD age of patients was 34.2 ± 2.6 years, and the duration of disease was 6.4 ± 4.3 years. In addition, tissue content of substance P (SP) and the vasoactive peptides neuropeptide Y (NPY), calcitonin gene-related peptide (CGRP) and vasoactive intestinal polypeptide (VIP) was measured. Nasal mucosa was obtained at the level of the anterior region of the middle turbinate. In CH patients, we found hypotrophy and fibrosis of serosal glands on both sides, compared to tissues from normal subjects. Tissue content of VIP and CGRP was normal, whereas a clear decrease in SP content was seen in the nerve endings, particularly on the pain side, suggesting an increased discharge of SP. NPY was markedly reduced in all patients, particularly on the pain side, indicating an increased release of this peptide. These data suggest that in CH the occurrence of rhinorrhea may not reflect increased activity of serosal glands, but rather oedemal/vasomotor phenomena located in the turbinate. The reduced SP content further supports the involvement of this mediator in the pathogenesis of pain and vascular hyperreactivity in CH. Finally, the finding of reduced NPY content in the nerve endings of nasal mucosa is compatible with impaired vascular control in these patients.