Pituitary apoplexy diagnosis

CT or MRI shows a hemorrhagic mass in sella turcica and/or suprasellar region, often distorting the anterior third ventricle.

Cerebral angiography should be considered in cases where differentiating pituitary apoplexy from aneurysmal subarachnoid hemorrhage is difficult.

Two magnetic resonance imaging (MRI) signs of pituitary apoplexy are the “pituitary ring sign” and “sphenoid sinus mucosal thickening”. The occurrence of both these MRI signs together in patients with ischaemic pituitary apoplexy was investigated. A literature review searching the terms “pituitary ring sign” and “sphenoid sinus mucosal thickening” in the context of pituitary apoplexy from 1990 was performed. To be included in the study, each case had to have ischaemic pituitary apoplexy defined as the acute expansion of a pituitary neuroendocrine tumor or, less commonly, in a non-adenomatous gland, from infarction without hemorrhage or very little hemorrhage and a T1-weighted MRI of the brain with contrast that displayed both “sphenoid sinus mucosal thickening” and a “pituitary ring sign” either on an actual study (the author's cases) or in a figure in an article from the literature that could be reviewed and clearly illustrate these two signs. Twelve cases of ischaemic pituitary apoplexy were found, all with MRI images that showed both of these signs. Ten cases from the literature (3 of which were published by this author) plus an additional 2 recently evaluated in our hospital, totaled the 12 cases. Thus, 5 of the total 12 cases were evaluated by this author. Of these 12 patients, both headache and visual loss were present in 5 patients, headache alone was indicated in 5 patients (10 of the 12 presented with headache), and no initial symptoms identified in 2 patients (incidentally found Non-Functioning Pituitary Neuroendocrine Tumors on MRI). These findings indicate that each sign (“pituitary ring sign” and “sphenoid sinus mucosal thickening”) may exist alone with or without pituitary apoplexy, yet both signs together in the appropriate clinical context is a strong predictor of pituitary apoplexy [1)].

1)
Vaphiades MS. Pituitary Ring Sign Plus Sphenoid Sinus Mucosal Thickening: Neuroimaging Signs of Pituitary Apoplexy. Neuroophthalmology. 2017 Aug 9;41(6):306-309. doi: 10.1080/01658107.2017.1349807. PMID: 29344069; PMCID: PMC5764063.