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"Black turbinate sign": a potential predictor of mucormycosis in cavernous sinus thrombophlebitis

"Sinal da concha preta": um potencial preditor de mucormicose nas tromboflebites do seio cavernoso

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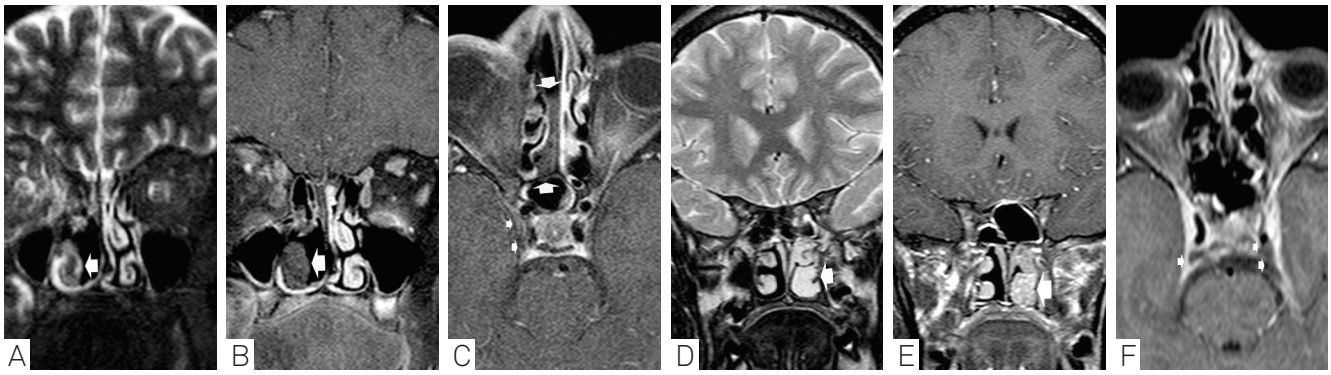

Figure. Mucormycosis exhibiting "black turbinate sign" that is characterized by low signal intensity (large arrow) of the right inferior nasal turbinate on the coronal T2 image (A) and the absence of enhancement (large arrows) after intravenous gadolinium administration on coronal (B) and axial (C) T1 images; note the typical ipsilateral CST (small arrows). The lack of these features can be observed in the comparative images of bacterial rhinosinusitis associated with bilateral CST (arrows in D-F). Both patients had additional orbital compromise.

Rhinosinusitis has the potential to result in catastrophic intracranial extension in the presence of predisposing conditions, such as diabetes, immunosuppression (fungus) or the incomplete treatment of bacterial infection. It is assumed that cavernous sinus thrombophlebitis (CST) is secondary to retrograde extension due to a valveless system of the vein that communicates paranasal cavities to the cavernous sinus[1]. The "black turbinate sign" results from dry gangrene in affected tissues, which presents in early stages paranasal mucormycosis. Conversely, bacterial sinusitis does not promote local necrosis and, therefore, it affects neither mucosal enhancement nor its T2 signal intensity[2].

A poor prognosis of CST highlights the relevance of correct diagnosis for early treatment. The "black turbinate sign" could represent a potential discriminating feature to distinguish mucormycosis in CST etiology (Figure).

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