How to diagnose sinus fungus balls in the paranasal sinus? An analysis of an institution’s cases from January 1999 to December 2006

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BACKGROUND: The diagnosis of a sinus fungus ball (SFB) is often not clear despite well-defined diagnostic criteria. OBJECTIVE: To study the radiological, intraoperative and histological diagnostic accuracy in comparison to results from mycological and histological analysis. METHODS: Systematic review of 724 files from patients treated for chronic rhinosinusitis from 1999 – 2006 at our institution. RESULTS: The sensitivity, specificity, positive and negative predictive value (PPV, NPV) of pre-operative CT imaging was 83%, 94%, 56% and 98% respectively, whereas, based on intra-operative findings, it was 98%, 93%, 57% and 100%. CONCLUSIONS: A high number of misdiagnoses was found possibly due to sampling error. A severe inflammatory reaction of the surrounding tissue was found more often in SFB than in controls in our study and this we suggest could be an additional sign for fungal infection. Fungal cultures did not contribute to a correct diagnosis.