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Occurrence of asymptomatic sinusitis in common cold and other acute ENT-infections

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INTRODUCTION

Among adult patients with local symptoms of acute sinusitis, their complaints and the clinical findings are frequently guiding enough to establish the diagnosis, sinus empyema - or to exclude this diagnosis. In one fourth of these cases, however, the clinical picture is vague or even misleading why an inadequate therapy may follow (Berg and Carenfelt, 1985). For this reason it might be questioned whether the sinus empyema also occurs in an asymptomatic or disguised form among patients with the picture of a common cold.

To study this question, 100 consecutive patients were examined, all without any complaints suggesting a sinusitis, but suffering from common cold or other acute ENT-infection. To avoid radiographic exposure of these patients and to minimize the number of diagnostic antral punctures, ultrasonography was used for screening detection of retained secretion in the maxillary and the frontal sinuses.

MATERIAL AND METHODS

100 consecutive adult patients (58 female and 42 male) with common cold or other acute infection such as pharyngitis, tonsillitis, laryngitis, bronchitis or otitis media were accepted for this study, provided that they suffered no local symptoms from the paranasal region. Thus, symptoms such as facial or dental pain, discomfort or tenderness disqualified the patient from the study. Nor were accepted patients with purulent ostial discharge from the sinuses. Another 20 adults without any history of sinusitis and free from known diseases that might compromise the sinuses were used as a control group (healthy adults).

Following the clinical ENT-examination, the maxillary and frontal sinuses were ultrasonographically examined. The A-scan equipment used - Sinuson 810 - is intended for this purpose and is commercially available. The method and the equipment have previously been described by Jannert et al. (1982). The ultrasonographic signs of retained sinus secretion were defined according to Revonta (1980). Signs of swelling of the antral mucosa were considered to be prevailing when the distance from the initial echo to the high-intensity echo was at least 2 cm but not 3.5 cm. When antral secretion was ultrasonographically indicated, a

diagnostic antral aspiration was performed according to the technique previously described (Carenfelt, 1982), as a base for etiological diagnosis. This puncture was carried out immediately following the ultrasonographic examination.

RESULTS

Among the 100 patients examined – all without symptoms or signs of sinusitis – 89 had a clinical picture of a common cold, acute rhinitis, sore throat (acute tonsillitis or pharyngitis), or acute otitis media. Eleven patients suffered mainly from acute laryngitis or bronchitis. Of 100 patients, 37 complained about purulent nasal discharge.

In 9 maxillary sinuses of 9 patients, the ultrasonographic examination indicated retained secretion (Table 1). By diagnostic puncture, an antral empyema was disclosed in 2 of these patients and in a further 2 cases, a nonpurulent sinusitis was established. The frontal sinuses, however, appeared ultrasonographically healthy in all patients.

Mucosal swelling in one or both maxillary sinuses was ultrasonographically indicated in 38 patients, but apparently not more frequently among the patients with purulent nasal discharge (Table 1). Furthermore, such swelling seemed to be about equally frequent in healthy adults, with ultrasonographic signs of mucosal swelling appearing in 6 of the 20 individuals studied.

Table 1. Antral findings in ultrasonography and in diagnostic aspiration.

ultrasonography:	retained secretion			mucosal swelling	normal finding	
antral aspiration:	purulent secretion	non-purulent secretion	normal findings			
patients						
– with purulent nasal discharge	2	2	2	13	18	:37
– without purulent nasal discharge			3	25	35	:63
number of patients	2	2	5	38	53	:100

DISCUSSION

To discriminate the fluid-containing sinus from the aerated one, ultrasonography is a reliable method (Mann et al., 1977; Revonta, 1980), but false negative results have been reported in as many as 24–30% of the patients (Jannert et al., 1982; Berg and Carenfelt, 1985). For the present purpose, however, ultrasonography was considered a more suitable tool than radiography, since it is harmless as well as convenient to the patient.

Except for mucosal swelling of the maxillary sinus, few ultrasonographic indica-

tions of disordered sinuses were found. The pathological implication of the indicated antral swelling should be questioned, however, since such swelling seemed to be about equally frequent in the group of healthy adults. Retained antral secretion was ultrasonographically found in 9 patients but a purulent sinus infection did occur in just 2 of these cases. Even if the possibility of false negative results is taken in consideration, true antral empyema running an asymptomatic course seem to be infrequent in patients with acute ENT-infections.

Adopting ultrasonography as a screening procedure in patients without a convincing clinical picture of sinus empyema, would lead to an overconsumption of antibiotics for two reasons. A false positive indication of antral secretion can be expected to occur in 10% of the cases as the specificity of ultrasonography is about 90% (Revonta, 1980; Jannert el al., 1982; Berg and Carenfelt, 1985). Secondly, the retained antral fluid is of nonpurulent character in more than 30% of the patients with such fluid (Berg and Carenfelt, 1985). The benefit of antibiotic treatment in these patients is questionable (Berg and Carenfelt, 1985). Taking the advantage of ultrasonography in sinus diagnostics, the examiner should also be prepared to perform differential-diagnostic punctures, followed by a proper surgical drainage in case of antral empyema.

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