MANAGEMENT OF INFLAMMATION OF THE MAXILLARY SINUS

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INFLAMMATION of the maxillary sinus is a disease that is common despite the current widespread use of the many new antibiotic agents. A systematized approach to the management of this disease, an approach that is useful not only to rhinologists but also to physicians in general, is outlined in this paper. Although the discussion is limited to maxillary sinusitis, many of the aspects discussed are common to other types of sinusitis as well.

Etiology and Classification

The predisposing factors of inflammation of the maxillary sinus may be grouped as follows:

Local—A. Vasomotor rhinitis
1. Allergic
2. Metabolic
3. Chemical
4. Mechanical

B. Septal deformities
C. Turbinate abnormalities
D. Adenoidal obstruction
E. Dental neglect

General—Includes patients having poor hygiene or faulty living conditions or those suffering from chronic debilitating diseases with lowered general resistance, such as diabetes and malnutrition.

The variations in the disorder may be classified as:

A. Catarrhal sinusitis (acute)
B. Suppurative sinusitis
1. Acute
2. Subacute
3. Chronic

C. Hyperplastic sinusitis

The factor actually initiating inflammation of the maxillary sinus usually is an acute rhinitis such as that which accompanies the common cold, influenza, exanthemas, exacerbation or acute onset of allergic rhinitis, and dental sepsis. An estimated 10 per cent are initiated by spread of dental sepsis, either spontaneous or induced by dental manipulation.

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Diagnosis and Treatment

Catarrhal sinusitis (acute). Acute catarrhal sinusitis ordinarily is not differentiated from the acute rhinitis which it commonly accompanies. The patient having acute catarrhal sinusitis may state that he has a cold that is more severe and more prolonged than usual. The symptoms are those of rhinorrhea, nasal obstruction, dull headache or pressure sensation, low-grade fever, and malaise. Roentgenograms taken at the height of an acute rhinitis frequently will show a haziness of the sinuses.

The indications are for treatment of the acute rhinitis, with nasal shrinkage, analgesics, antihistaminics (if an allergic factor is suspected), antibiotics (if the reaction is severe), and preferably also rest in bed and general supportive measures.

Suppurative sinusitis (acute). Patients having acute suppurative sinusitis often believe that they have a toothache and they may consult their dentists first. Pain is referable to the teeth, the malar bone, or the forehead on the affected side. Jarring, or chewing, accentuates the pain. Deep pressure or percussion over the antrum produces pain. Pus usually is seen in the nasal fossae or adherent to the pharyngeal wall, unless the ostium is blocked and nasal drainage is prevented. The turbinates are swollen and hyperemic. In addition to complaining of pain, the patient may complain of purulent discharge, nasal obstruction, and headache. Chills and fever alternately may be present. Transillumination is dark on the affected side. Roentgenograms show diffuse clouding in the region of the antrum or perhaps show the presence of a fluid level. Rarely the patient has an acute septic reaction accompanied by edema and redness of the cheek and edema of the lower eyelid; when these symptoms are present, the clinician should suspect a coexistent diabetes or a sinusitis of dental origin.

The indications, as in acute catarrhal sinusitis, are for conservative management, especially at the onset, with rest in bed, analgesics or narcotics as necessary, nasal shrinkage, and adequate antibiotics. Relief of pain usually can be obtained by shrinking the nasal tissues to promote drainage. Severe pain should be relieved promptly by administration of codeine or morphine, or the patient may seek help elsewhere. Conservative management usually is indicated for the first week of the disease. If the patient does not respond to conservative management or if the pain increases, antral irrigation becomes mandatory.

Suppurative sinusitis (subacute). The term "subacute" has come to have dual meanings. Some physicians define subacute as 1) relating to the duration of the disease; others define subacute as 2) relating to the severity of the disease. The first meaning usually denotes that the symptoms have existed for more than ten days but for less than six weeks. The second meaning usually denotes that from the onset the symptoms are mild, with no febrile response, and discomfort is minimal because of fairly adequate drainage. Perhaps the typical case would be that of the patient who phrases his complaint as "a persistent cold"; the symptoms began three to five weeks previously; there is purulent nasal discharge,

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and over the antrum there is dull discomfort that is particularly noticeable on bending the head downward or on jarring the area.

Conservative management, as in the other types of sinusitis previously discussed, usually produces a successful result. Nasal decongestants are employed, aided by one or more irrigations to evacuate the purulent antral contents. The course of the disease in many of these cases undoubtedly is shortened by the administration of antibiotics, the use of which, however, is not mandatory.

In the treatment of acute and subacute suppurative sinusitis, it must be remembered that subsidence of the acute symptoms cannot be considered a cure. One should not discharge the patient from observation until objective evidence of cure is demonstrated in the form of normal transillumination, normal roentgenograms, and clear returns from lavage. Antibiotics frequently give temporary symptomatic relief but when administration of the drugs is interrupted there is a prompt flare-up.

Suppurative sinusitis (chronic). More cases of chronic antral suppuration than of any other suppurative sinus disease are seen in clinic practice. It is noteworthy that in cases of chronic antral suppuration it is not the symptoms of pain and headache that bring the patient to the physician; furthermore, frequently nasal symptoms are mentioned by the patient only in answer to the physician's specific questioning. The symptoms that the patient describes as a presenting complaint are related to the chronic purulent drainage from the antral cavity: 1. Postnasal discharge that is removed by hawking and coughing and that usually is most abundant after the patient has been lying down for a period of time. 2. Anterior nasal discharge is a less common complaint. 3. Persistent nasal stuffiness on the affected side because of mucosal engorgement produced by the discharge. 4. Bad odor or taste of the discharge, or the complaint of bad breath. 5. Anorexia. 6. Occasional nausea and vomiting while attempting to clear the discharge. 7. Repeated minor sore throats or chronic pharyngeal irritation. 8. Persistent or recurrent hoarseness. 9. Intermittent or constant tubal obstruction occasionally with serous otitis media, recurrent acute otitis, or chronic otitis with conductive deafness. 10. Rarely, remote symptoms where the antrum may be acting as a focus. All physicians occasionally have seen patients in whom cure of chronic antral suppuration has relieved asthma, rheumatic symptoms, recurrent urinary tract infections, and other remote conditions.

The condition of chronic suppurative sinusitis is suspected on the basis of the history and of the visualization of the discharge, and it is confirmed by transillumination, by roentgenograms of the sinus, and most importantly, by diagnostic antral lavage.

Occasionally, the symptoms will be alleviated following a series of antral irrigations, but this is not the common course. Antibiotics generally are not useful except as an adjunct to surgery. The procedure usually required is the creation of an adequate nasal antral window to assure ventilation and drainage. This procedure is successful in the vast majority of cases.

Attention also must be directed towards eliminating any predisposing factors, such as: nasal polyps, septal deformities, turbinate hypertrophies, associated allergic edema, and dental sepsis.

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There are times when suppuration persists because of irreversible mucosal disease, presence of antral septa with inadequate drainage, cicatricial obstruction of the antral window, or presence of a foreign body. In these cases the Caldwell-Luc procedure (the radical antrum operation) is the one of choice, because the interior of the antrum may be visualized completely, the septa may be broken down, all of the diseased membrane may be removed, foreign bodies may be extracted, and a more adequate nasal antral window may be created.

Persistent suppuration resulting from antral oral fistulas following dental extraction occasionally is seen; to obtain a satisfactory clinical result, the fistula must be repaired either at the time of the antral operation or at a subsequent procedure.

Hyperplastic sinusitis. The term "hyperplastic sinusitis" covers a variety of conditions in which roentgenograms show a thickened membrane, diffuse clouding, or apparent cyst or polyp formation in the antrum, but antral lavage produces only clear returns or a small amount of mucus. Such a situation may result from: prior antral suppuration with scarring of the mucosa with or without prior surgery; formation of a cyst or polyp in the antrum; from antral fracture with organization of a hematoma; or from a vasomotor rhinitis, usually allergic in nature. Treatment is not required except in the cases arising from vasomotor rhinitis, and in these the therapy is aimed at the vasomotor rhinitis and not at the condition in the antrum.

CONCLUSION

The prognosis of suppurative antral disease is excellent from the cure standpoint except in instances of bronchiectasis where the pulmonary disease cannot be excised. Even in these the patient may be symptomatically improved by reducing the amount of purulent secretions.

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