

Surgical drainage of the maxillary sinus

Introduction to the symposium

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The present symposium was originally announced as a round table on the surgical treatment of paranasal sinusitis.

As this is a rather broad theme, we have decided to restrict our meeting to the surgical drainage of the maxillary sinus.

In spite of the many publications on this topic the discussion how the diseased antrum should be approached is still going on. The recently developed techniques of antroscopy and nasal endoscopy have introduced new elements in this discussion.

Four access routes to the maxillary antrum have been developed, in their chronological order: 1. transalveolar, 2. through the middle meatus, 3. through the canine fossa and 4. through the inferior meatus.

Transalveolar

This access was mentioned already in the first description of the antrum by Highmore in 1651. It has since been advocated many times but at present it is only in use in patients with sinusitis and a alveolar fistula, due to extraction of a (pre-)molar tooth.

Middle meatus

Puncturing of the antrum through the middle meatus dates from the middle of the 18th century. This approach became popular around 1900-1910, when it was advocated by Killian, Siebenmann and others. In recent years the advantages of drainage through this route have been stressed again by MacBeth (1968) and by Lavelle and Harrison (1971).

Those who favour this approach claim that drainage into the nose through an opening in the naso-antral wall at the level of the inferior meatus is unphysiological.

Well known techniques are enlarging the maxillary ostium or making a supplementary ostium in the middle meatus. Endonasal ethmoidectomy can also be considered a means to improve antral drainage through the middle meatus.

Canine fossa

Historically opening of the canine fossa has been the third method to gain access to the antrum. This approach was first described in France around 1800 and be-

came widely popular after the publication of the surgical technique by three different authors: Caldwell from New York (1893), Spicer from London (1894) and Luc from Paris (1897). Already during the twenties opposition against this method arose and this operation has gradually become less and less popular. Objections that have been put forward are:

- a radical operation of the antrum is rarely necessary;
- removal of the mucosa leads to irreversible damage (e.g. Legler, 1974);
- postoperative neuralgia and anesthesia occurs in a great number of the cases (e.g. Kortekangas, 1967; Flemming et al., 1967).

In order to minimize the disadvantages all kinds of technical variations have been proposed, such as vertical incision instead of a horizontal (Brusis, 1979), a gingival incision (Neves Pinto, 1981), a more lateral opening of the antrum and the use of an osteoplastic flap (e.g. Feldmann, 1978).

Those who are in favour of Caldwell-Luc's operation stress that this technique gives the best view and therefore is the only method which enables us to remove all diseased mucosa.

Inferior meatus

Drainage through the inferior meatus was first carried out by the end of the 19th century. After Miculicz (1887) had introduced puncturing of the antrum by this way, Lothrop (1897) and Claoué (1902) published a method of making an opening in the lateral wall of the inferior meatus. Cláoué (1902) described his naso-antrostomy operation. This technique has become very popular in spite of the fact that it is considered unphysiological by many (e.g. MacBeth, 1968). Others claim that it is an effective procedure (e.g. Mann and Beck, 1978). Soon after it had become into general use removal of diseased mucus lining and polyps was attempted through this opening. In the last ten years several publications on this techniques appeared in which the use of the microscope or endoscope is advised (Wigand and Steiner, 1977).

The three speakers of today, Prof. Wigand from Erlangen, Dr. Buiters from Groningen and Prof. Legler from Mannheim, have a long experience in this field and they have published several papers on the subject. After their individual presentations they will discuss more freely the various aspects and questions related to this topic. So far the books on this subject have not yet been closed. Very probably each approach will have his own indications in future.

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