ence upon the evil prognosis of diffuse cranial osteomyelitis. Spon toneous cure can scarcely be hoped for, and all the cases whic have hitherto recovered undoubtedly owe their escape to promp surgical intervention.

We have already commented upon the great contrast shown i the records between the chances of recovery in diffuse spontaneou osteomyelitis as compared with diffuse post-operative osteomyeliti Even under modern surgical treatment a successful result in th latter class has not yet been reported as far as I can discover. It i possible, however, that early diagnosis and immediate interventio may, in the future, render the outlook even in these cases les gloomy that it is at present.

(*To be continued.*)

SOCIETIES' PROCEEDINGS.

BRITISH MEDICAL ASSOCIATION.

Meeting at Liverpool, 1912.

SECTION OF LARYNGOLOGY AND RHINOLOGY.

JOHN MIDDLEMASS HUNT, M.B., *President.*

Abstract Report by MR. HAROLD KISCH.

(*Continued from p.* 39.)

Discussion on the Treatment of Chronic Suppurative Ethmoiditis

OPENING PAPER BY **Prof. L. Hajek**—*continued.*

II.

We come now to the problem of chronic ethmoiditis, where the sup puration predominates in the clinical picture. Here we must at on differentiate between the (1) open and the (2) closed empyema, becaus the treatment is different in both kinds.

(1) *Open Suppuration of the Ethmoid.*—Here we must, first of all, l guided by the diagnosis. I should like to say that the procedur required for an exact diagnosis form at the same time an important pa of treatment. In order to fulfil the requirements, one has to remove a visible polypi and hypertrophied parts of the interior of the nose. Als the middle turbinate must be sacrificed mostly, because it is partl degenerated, and partly occludes the free view of the ethmoid labyrint At times the middle turbinate can be saved, and we should aim at savin this organ, for it possesses a functionating cavernous body. Only aft making free the middle meatus we are able to state whether an ethmoi suppuration is present alone or in combination with affections of oth sinuses. Also the extent of the suppuration of the labyrinth can l recognised only after obtaining free access to the middle meatus an repeated use of the probe.

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Let us suppose, for instance, we have to deal with an open suppuration of the anterior ethmoid cells—that is, those opening into the middle meatus—and that we have succeeded in finding out that the pus comes out on the roof of the middle meatus, between the bulla and the insertion of the middle turbinate—that is, one of the typical openings of the ethmoid cells. The curved probe goes about 1 cm. laterally towards the lamina papyracea. We then open the ethmoid from the roof of the middle meatus through this ostium ethmoidale. It is most convenient to use for this purpose my ethmoid hook to break down the bony walls around the ostium and then to enlarge the cavity by means of the ethmoid curettes mentioned before, biting away the surrounding bone. If the disease has advanced further into the ethmoid, one can open the way into the diseased cells, remove their walls, and in a few minutes one can see nearly every point, control it with the probe and get an excellent orientation regarding all details.

In other cases the main suppuration is localised in the infundibular cells. The entire mucous lining of the hiatus semilunaris of the infundibulum and of the cells opening into the latter is diseased. In such cases the best plan is to resect first of all the processus uncinatus, beginning at its anterior end at the attachment to the agger nasi. A free access to numerous infundibular cells is obtained by a resection of a part of the bulla. It must be emphasised that the endo-nasal removal of the infundibular cells requires great caution. The variable anatomic conditions postulate restriction, for the orbit is endangered if one goes too far laterally, and if the infundibular cells reach high up the roof of the ethmoid, the lamina cribrosa may be injured. Therefore, if infundibular cells reach high up, the extra-nasal route is indicated. But with the exception of the rare cases of infundibular cells reaching high up, all other parts of ethmoid labyrinth can be removed by the endo-nasal route.

In suppuration of the posterior ethmoid labyrinth we can act in a twofold way: Either we begin with the operative removal of the anterior labyrinth, and then by gradual progression we enter the posterior part if the anterior and posterior labyrinth are diseased; or we open only the posterior labyrinth if the anterior is healthy. The preferable place for opening the posterior labyrinth is situated just above the line of attachment of the middle turbinate in the upper meatus (Hajek (2)). Here my ethmoid hook can easily be applied, and will open by pulling it in a forward, inward, and downward direction the posterior ethmoid labyrinth safely. If a part of the anterior labyrinth is also opened by this procedure it does not matter much, for sometimes it must be done in any case for better orientation. The removal of the walls of the posterior labyrinth up to the anterior wall of the sphenoid sinus offers but little technical difficulty. Owing to the depth of the ethmoid labyrinth at this point an injury of the orbit is not at all likely, but one must be on the look-out for it when working on the infundibular cells in the hiatus. Such injuries of the orbit have been observed already repeatedly, and I have seen them, too, several times, but luckily without any further harm.

An important question is that dealing with the intervals between the operative sittings. One should never operate until all the reaction caused by the previous operation has subsided. If we operate before the reaction has subsided, then the next reaction is more intensive; furthermore, after an operation on the ethmoid also the healthy parts of this region are swollen and can appear like polyps, which, however, return to the normal

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state after a few days. This makes the differentiation between healthy and diseased parts much more difficult, sometimes even impossible.

In breaking-down suppurating ethmoid cells it is important that the opening be a large one. If this is insufficient the reactive swelling may cause retention of the secretion, with a rise of temperature and threatening symptoms. I have published a case (Hajek (19)) in which the condition was extraordinarily obstinate, so that the operation, done by one of my assistants, was insufficient. We lost this patient through meningitis, caused by violent reaction and retention of secretion. If we are in doubt whether we shall be able to obtain sufficient drainage for the pus, then it is better not to operate endo-nasally, but to use the external route under general anæsthesia. The aim of after-treatment is, indeed, to prevent all retention. Therefore packing should not be used. If this is not possible the packing should be removed as early as possible, or at least it should be applied as loosely as can be. The healing or scarring of the mucous membranes of this region takes weeks, if not months. It is a good plan to soften the crusts, as long as after-treatment lasts, by means of oil and ointments. Sometimes it becomes necessary to promote healing a little with silver nitrate where the granulations on the edges of the injured bone threaten to become too exuberant.

(2) *Extra-nasal Method.*—The extra-nasal method is indicated:

(i) In suppurative ethmoid disease, when the endo-nasal method was not sufficient owing to the inaccessibility of the infundibular cells, also orbital cells, reaching up very high.

(ii) Where the accessibility to the ethmoid is restricted owing to a narrow nose, and where threatening symptoms do not permit waiting until sufficient space is obtained by an operation for the anomaly of the septum.

(iii) In ethmoid suppuration when complicated with marked disease of the frontal sinus.

(iv) In ethmoid suppuration when the endo-nasal method could not ward off a threatening bursting of the suppuration into the orbit, or when bursting has taken place already with formation of abscess.

Kuhnt and Grünwald lay open the ethmoid labyrinth by an incision through the skin; Jansen has forced his way into the ethmoid labyrinth through the maxillary sinus.

The incision devised by Killian (23), with resection of the frontal process, is the best for most cases. Of course, in cases of formation of a fistula or abscess one does not always adhere to the typical operation, but has to regard the individual requirements of the case. Especially in cases of abscess-formation all cosmetic considerations must be put aside: one must abstain from primary suture, and even the orbital bridge cannot be saved. In extensive abscess in the orbit, especially in retro-bulbary abscess, the access to the region one wants to operate cannot be large enough; one cannot pay attention to save the attachment of the trochlea; even parts of the lamina papyracea must be removed if they are necrotic.

Ethmoidectomy, recommended by Guiset (25), will be hardly ever the typical operation in indicated cases of abscess alone, but *de facto* will approach it the more the lamina papyracea has to be sacrificed.

Even the radical methods do not guarantee a healing without recurrence. Also after the radical operation it will be necessary, just as after the endo-nasal method, to control the case for weeks, months or years for the sake of removing now and then remaining or newly formed polypi.

After operations of the ethmoid labyrinth fatal brain complications

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have occurred. Dreyfus (26) and Gerber (27) have compiled these cases.

(3) *Closed Empyemata.*—At times after evulsion of a polypus situated high up pus wells up. The evulsion was succeeded by the diagnosis of the empyema, hitherto latent. Similar conditions prevail as regards the majority of circumscribed or diffuse dilatation of the ethmoid labyrinth. For instance, in the region of the middle turbinate or the middle meatus one sees a more or less marked bony enlargement, or tumour, the exact origin of which cannot be stated *à priori*. It can be either an enlarged middle turbinate or an ethmoid cell dilated by mucus or pus, or a bulla ethmoidalis dilated by pathological contents, or the process uncinatus enlarged by the same cause. The probe tells us that all these formations are cystic cavities with bony walls. Exact palpation shows a more or less distinct fluctuation here and there, which demands the opening of the cyst in that place.

The endo-nasal opening of the closed ethmoid empyema is nearly always sufficient to effect a complete drainage. External opening is mostly not necessary, except that an extension into the orbit and abscess-formation call for it urgently. The symptoms of dislocation of the bulbus which occurs in consequence of a closed empyema disappear generally in a short time.

III.

The chronic suppurative inflammations of the ethmoid which appear under the symptoms of ozæna require a separate discussion. The suppurative inflammation of the ethmoid bone must be treated on the same lines as the hyperplastic inflammation of the ethmoid bone, but the indications for their operative treatment must be very much restricted in ozæna, as the therapeutic gain is mostly quite insignificant. According to my experience, only those cases of ozæna with chronic ethmoiditis should be operated on where the ethmoid labyrinth or part of it is the main source of the suppuration, and where we can therefore hope to improve or stop the bulk of suppuration by a change in the condition of the ethmoid. Only in cases of threatening complications of a closed empyema we may abstain from conservative methods.

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(*To be continued.*)

ROYAL SOCIETY OF MEDICINE.—OTOLOGICAL SECTION.

November 15, 1912.

Dr. J. Dundas Grant, *President of the Section, in the Chair.*

Two Cases of Vertigo in which the Blood-pressure was very low and Reactionary Vertigo was excessive after rotation.—Richard Lake, F.R.C.S., and A. Ferguson Penny, F.R.C.S.I.—The main feature in both cases was the association of vertigo of a severe type with an exceedingly low blood-pressure. In the second case the attacks of vertigo were so frequent as totally to incapacitate the patient. Even a slight movement of the head to one side or the other was sufficient to provoke an attack, which, in every instance, was accompanied with a feeling of nausea. The administration of ernutin with the object of raising the blood-pressure proved satisfactory in both cases. The first case was noted, and treated with ernutin, before we had seen Dr. Byrne's book, and although we had every reason to be satisfied with the action of that remedy in this particular case, we commenced the treatment of the second case with strychnine and atropine. After four days' treatment she reported that she was considerably worse, and she was then given ernutin. Her condition improved markedly and rapidly as the result of the exhibition of this remedy.

Case 1.—Male, aged fifty-five, but looked considerably older. Slight deafness on both sides, which began twenty years ago, and tinnitus also, most marked in the right ear, but not severe. Never any discharge, and

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