OUR EXPERIENCE AT FORT OGLETHORPE, GA.,
WITH ACUTE AFFECTIONS OF THE MIDDLE
EAR AND THE MASTOIDS FOLLOWING
MEASLES.*

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One of the first things which forces itself upon the army surgeons is the marked difference in the practice of medicine in military as compared with civil life. This is particularly true of the acute affections of the ear. Much or all that he has learned about these conditions, possibly as the result of years of study, must be promptly forgotten upon his entrance into a military camp. The supreme, all-controlling factor in military practice, at least so far as the upper respiratory tract is concerned, is infection. Infection is ever present, always to be dreaded and constantly to be guarded against. No finer work has been done in the various cantonments of the country than the measures instituted to prevent the spread of infection. Remarkable results have been secured in this respect. Much, unfortunately, because of the inherent conditions present, remains to be done, and at the best we must expect to be called upon to treat in the future as we have in the past, inflammatory conditions affecting the mucous membrane of the upper respiratory tract, of greater or less severity, the result of infection.

During the past winter and spring, these cases formed a large part of the cases at the U. S. Army General Hospital, Fort Oglethorpe, Ga. The medical wards were continually filled with cases of bronchitis or of a severe type of bronchopneumonia, mumps and especially measles.

Of the cases of measles, it was particularly true that a

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majority was associated with acute laryngitis and rhinitis. Of these, the number was large who in the course of the disease developed an acute affection of the middle ear. Many of these, in spite of the most prompt and energetic treatment, went on to acute mastoiditis, requiring immediate operation to avoid serious or fatal intracranial complications. The number of ear cases treated from January 1st to July 14th was 1,685, of which 607 were cases of measles. The symptomatology of the cases of otitis media acuta occurring in measles was strikingly characteristic and differed entirely from the ordinary classical picture met with in civil life. The patient, more or less toxic, with elevation of temperature, pronounced leucocytosis and racked with cough from his bronchitis or bronchial pneumonia, would be found lying entirely free from all complaint or pain, either subjective or objective, as far as the ear is concerned.

In fact, it has been our experience that in a great majority of these cases, the ear complication was discovered only in the course of a routine examination. At the most, the patient would admit upon direct question that there was feeling of stuffiness in the ear. The examination of the ear would show no characteristic picture. Usually the landmarks were obliterated, and there was a boggy, unhealthy appearance of the drum membrane. If seen extremely early in the infection, there might be a slight injection in the handle of the malleus and Shrapnell's membrane. At a variable time after the onset, bulging of the ear drum takes place in the posterior upper quadrant. To wait for this to occur is almost certain to mean mastoiditis and operation. It is our rule at Fort Oglethorpe to freely open the drum immediately upon discovery of any change in its appearance. Often the incision will be followed by a mucopurulent discharge. If the incision has been made early enough, if the infection is not too virulent and if unceasing vigil has been exercised in maintaining free drainage by repeated paracenteses, the case will gradually go on to convalescence and recovery. If, on the other hand, free drainage has not been established or maintained, if the organism present, usually a streptococcus or pneumococcus, is exceedingly virulent, if there is a diseased condition of the nose, and finally if the resisting power of the patient has been too much

lowered, the inevitable course of the disease is toward an extension of the process from the attic to the antrum and the mastoid cells. Acute mastoiditis appearing in a patient suffering from measles is, as a rule, just as free from pain as is otitis media. It is almost impossible to believe that a patient can have a mastoid full of pus and yet insist that he is not suffering and scarcely admit any tenderness on pressure, either over his antrum or over his tip. The only sign that can be depended upon are changes in the upper posterior wall of the canal. While it is the rule to find these to a greater or less degree, according to the duration of the disease, we have met cases where they were almost if not altogether lacking. The discharge is wont to be profuse and frequently under pressure, as shown by pronounced bulging in the line of incision.

In several cases an extensive destruction of the drum membrane took place which at first we were inclined to ascribe to the local anesthesia used. We were finally forced to the conclusion that it was due to the virulence of the organism present. Upon the recognition of changes in the auditory canal wall, immediate operation is indicated. In rare cases where these changes are absent, with excessive discharge or destruction of the drum membrane for a number of days, it has been our rule to operate. Any definite day of the disease for operation is out of the question. We have never operated too early, even if it has been only the fourth, fifth or sixth day. Often we should have operated earlier. Operation is wont to disclose extensive changes in the mastoid cells. If the operation has been performed early enough, the progress to recovery, while usually unduly slow, is uneventful. If operation has been delayed, it is common to meet with epidural abscess, sinus thrombosis, brain abscess or meningitis.

During the past winter we have tried in the mastoid wounds dichloramin-T. While in some cases it proved satisfactory, we did not satisfy ourselves that it was materially better than a dry wick packing.

In one particular our experience has been especially gratifying. Without exception, these cases operated upon were exceedingly sick men. In all of them, the employment of the usual anesthesia, ether or chloroform, could not have failed to produce pronounced nervous shock and thus serve as the de-

ciding factor against the patient's recovery. In place both of ether and chloroform, it has been our rule to use nitrous oxid gas and oxygen. The immediate and later results have been truly remarkable.

The records, which have been kindly prepared for me by the chief anesthetist of the hospital, show that from April 3rd to July 26th, thirty-one cases of mastoids complicated by measles were anesthetized with nitrous oxid gas and oxygen, and of these ten had bronchopneumonia at the time of the operation and one had mumps. The shortest time for administration was forty minutes and one was three hours and forty-five minutes. The average time for administration was one hour and fifteen minutes. There were no untoward symptoms during the anesthesia or complications due to the anesthesia. The induction period was about three minutes. All patients were conscious before the dressing was completed. One case requiring an anesthesia of nearly four hours was particularly noteworthy. It was a man suffering from measles, double bronchopneumonia and double mastoiditis. Both mastoids were found diseased and requiring operation. There was absolutely no shock following the operation, and the patient's temperature the next morning was virtually normal. This was true of all the cases where this form of anesthesia was employed. Beyond question, it is the ideal anesthesia for such cases and commends itself strongly for all extensive or serious operations.

A few words in conclusion: Two important deductions force themselves upon us as the results of our observations in the otologic complications of measles and other infectious diseases.

First, that they are so unusual in their symptomatology that the only certain means of recognition is the examination of the ear itself. This in a limited service is the province of the specialist. In army life, dealing with large bodies of men, such special attention manifestly will often be impossible. This necessitates that every ward surgeon should be capable of making a satisfactory otoscopic examination. So important has this seemed to us that during the present fall, in connection with our work in the school of otolaryngology,

we have been giving such instruction to every member of the school of surgery in order that he might acquaint himself with the normal and thus be able to recognize the abnormal appearance of the membrana tympani.

Second.—Far outweighing all measures addressed to relieving infection of the ear, is prophylaxis to prevent such infections from developing. Much has been done in this direction both here and in other cantonments throughout the country. All improved sanitary procedures, it is unnecessary to say, are to be carried out. In addition to these, local treatment of the upper respiratory tract of some form or other is distinctly indicated. What the best form of these is yet to be determined. Gargles, such as a warm saline solution, or Dobell's solution, recommend themselves. At present we are using at Fort Oglethorpe a two per cent solution of dichloramin-T, which properly prepared is free from irritation. The suggestion made recently by Lieut.-Col. Harris P. Mosher of an establishment of steam huts for this purpose, such as are now used in the British Army, particularly recommends itself. Any or all means such as these which will cut down the inroads of the bacillus, are the only sure means to complete success in this important line of work.