

OBSERVATION ON EAR NOSE AND THROAT CONDITIONS,  
GENERALLY BASED UPON ONE'S CLINICAL EXPERIENCE  
AS OTOLOGIST TO THE 3RD BRITISH ARMY IN FRANCE  
OVER A PERIOD OF TWELVE MONTHS.

Thesis for the degree of M.D. 1920.

by

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## P R E F A T O R Y.

This treatise is a resume of my work as Specialist in Otology and Rhinology with the 3rd British Army in France. It is compiled from notes on 200 special cases and includes statistics of cases seen by me during the period February 1918 - February 1919.

During this period I found myself for the last 7 months the only specialist in that Army area where formerly there had been two. For the convenience of transport of those requiring attention, all the work was done at Casualty Clearing Stations.

The accommodation was on a liberal scale as regards beds for severe cases and stretchers for milder cases. I had to send to the base those cases which were unsuitable for service at the front, because of permanent defects which could not be improved sufficiently to render the patient a fit soldier. Such cases were labelled for further examination as "Permanent Base". If the condition required treatment it could be undertaken by the Specialist provided that it did not entail a longer period than 8 days in the Casualty Clearing Station. This period to a certain extent was elastic. If longer, the patient had to be sent to/



to the base for his treatment. The remainder of the cases were fit for duty in the unit of the army from which they had been sent.

The most important part of ones duty had still to be performed, - that was to decide in those cases where deafness was complained of, whether the soldier was fit for "sentry go". If the soldier was unfit for "sentry go", and no definite standard of hearing was given one to meet this condition, it was necessary to use ones own judgment, and I accordingly selected as my standard, one ear Acoumeter = 15+ yards = normal; other ear Acoumeter at least 5 yards. He was still classed as "A" but was not allowed to do sentry go and patrols. He was utilized in parties, e.g. ration carriers, digging, wiring, etc. These cases had however for obvious reasons to be reduced to the minimum. The conditions under which one had to work departed frequently from the ideal. The corner of an ordinary Hospital Marquee, with no attempt at darkness, had often to suffice for a dark-room. In difficult laryngeal cases one waited until night-fall. From the point of view of efficiency the accommodation was good, but the instruments supplied were inadequate and practically all my instruments were private property. However, this difficulty was surmounted by the ability and courtesy of the Royal Engineers/

Engineers who constructed to my design an excellent revolving chair for Labyrinthine testing.

I was provided with an excellent orderly, an engineer by profession, who after a little training became very proficient in the use of instruments for dressing. When the work was heavy another orderly was always obtainable. I had no need for further assistance. This work was carried out in seven different hospitals, two days being usually allowed me in which to be ready to receive patients.

My duty was confined purely to Ear, Nose and Throat work, except when orders were sent from Head Quarters to say that the special centres - (Eye and Ear, Nose and Throat) - were temporarily closed; or in case of a rush of wounded when more Medical men were required for general work. The maximum number of new cases to be seen in a day was 16, separate days being allotted to different Corps of the Army. Officers, however, would come in to consult one without any appointment. It was ones duty to attend to such at ones earliest convenience as their time was more limited than that of the men. Most of the cases were returned to their unit or to ambulance with a note that same evening. The usual average of new cases seen when the line was quiet, reached 50 a week, and at this period the army area covered about 250,000 men.

Many/



Many very fine X-Ray plates were taken of the accessory sinuses by the Department attached to one of the Casualty Clearing Stations where I worked for a longer period than usual. The Medical Officer who superintended this department was in charge of the X-Ray work of the Army.

Transillumination was not possible. This was no drawback because if one had any reason to consider that a radiographic examination would be helpful in the diagnosis, this was immediately performed.

TABLE OF CASES.

## AURAL.

(1) External Ear.

Haematoma . . . . .	1
Cerumen . . . . .	150
Furunculosis . . . . .	45
Eczema, acute and chronic	86
Foreign Body . . . . .	1
Polypi : . . . . .	3
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	286

(2) Middle Ear.

Non Suppurative Otitis Media Acute	10
" " " " Chronic	43
Suppurative Otitis Media Acute	71
" " " " Chronic	346
Mastoid Disease . . . . .	12
Ruptured Tympanic Membrane	35
<u>Miscellaneous</u> . . . . .	9
Otosclerosis . . . . .	4
Nerve Deafness . . . . .	21
Labyrinthine Concussion . . . . .	17
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	569

(3) Nasopharynx.

Adenoids . . . . .	12
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(4) Pharynx.

Tonsillitis Acute and Chronic	90
Peritonsillar abscess	27
Pharyngitis Granular	16
"    Sicca.	4
Diphtheria	6
Miscellaneous	5
Syphilis 2nd.	3
Vincent's Angina	19
	<hr/> 170

(5) Nose.

Asthma	5
Trauma	7
Septal Deviations	37
"    Ulceration	6
Hypertrophy of Inferior Turbinated Bone	57
Polypi	18 (Men 8)
Epistaxis	8
Rhinitis Acute and Chronic	23
Rhinitis Atrophic	4
Sinusitis Acute Maxillary	3
Chronic "	13
Frontal Subacute	3
Ethmoidal Anterior	4 (Men 1)
"    Posterior	1
Dental Cysts	2
Choanal Polypi	4
	<hr/> 195

(6) Larynx.

Laryngitis	Acute	15
"	Chronic	7
Functional	Aphonia	12
Syphilis	Tertiary	1
Foreign Body		1
		<hr/>
		36



I shall first deal with those cases of an otological nature and I would note here at the outset that I do not agree with Major Shuter regarding the unsuitability of cases of Chronic Suppurative Otitis Media even of both ears, for active service in the firing line. I repeatedly saw men with this condition, who had served one, two, and sometimes three years in the firing line and who, judged by their decorations, must have been fine soldiers, apparently none the worse for their exposure.

I consider that provided a suitable record were entered in their pay books, a record which could be transferred when a new book was issued, such patients could always produce evidence for their officer, and information for the Regimental Medical Officer regarding their disability. These entries in the pay books were of inestimable use to Regimental Medical Officers. Two and a half years experience as Regimental Medical Officer had taught me this. I found that no hard and fast rule could be applied, and that every case had to be judged on its merits. A soldier presenting himself, with chronic suppurative Otitis Media, who had had a long spell with the infantry/

infantry or other unit up the line, say 6 months, should be sent to the base for toilet treatment for his ears, and for what was of much more commonsense value, a well earned and much needed Rest.

I consider that such a man could not be expected to stand the strain nearly so well as a man with normal ears, and all such men who could show that amount of service in their pay books, I invariably sent down. In times of severe fighting they would not be seen, the Department was closed and no Regimental Medical Officer would deplete his battalion under these circumstances without definite signs and symptoms of illness. It was the invariable plan of many Medical Officers, and I think a good one, of encouraging men to report sick for medical treatment when the line was quiet. When fighting commenced, however, it was very rare to send men sick.



Suppurative Otitis Media was seen in its two forms - acute and chronic, - the less frequent acute form yielding to ordinary nasal treatment and Politzerization, but I had to perform Paracentesis twice.

I saw many cases of the chronic form and in these my experience was that the improvement was rapid and the history of short duration; or the results were indifferent and where the Politzer bag failed, I saw small benefit from the Catheter. I saw what I now consider to have been a case of "indriven" Tympanic Membrane \* in a Gunner Major of heavy artillery. His hearing for the Acoumeter was one yard on Politzerization. It at once returned to 10 yards; three days later when he reported it was 15+ yards, and he required no more treatment on that visit or for two months later when last I saw him.

I had very little opportunity of testing medicated vapours and those cases upon which I tried it, did not shew any great improvement.

\* Dundas Grant. Journal of Laryngology, Feb. 1918, p.56.

Acute Suppurative Otitis Media was very common. The cases always reached me early and where indicated I performed Paracentesis, the results of which were very encouraging. I saw no untoward symptoms produced by it. The anaesthetic used for preference was gas and oxygen or nitrous oxide, the incision was always large and vertical, a procedure which appeared to me to be simpler. Ordinary antiseptic methods were first applied to the external meatus, and, at the end, I invariably used Carbolic 5%. Glycerine was practically impossible to obtain from medical stores but could be obtained from the Gunner Officers who had ample supplies for the lubrication of the guns. It was said not to be so pure, but I saw no harm from its use.

Hot fomentations I do not favour, preferring a pad of dry wool and a hot water bottle together with Hypnotics, such as Bromide and Chloral. Morphine failed in some cases. Aspirin and Phenacetin and Calomel are valuable.

These cases practically all received nasal treatment, Menthol sprays and later "Coll. Alk." Towards convalescence, Catheterization can be usefully employed.

These were certainly the most satisfactory cases with which I had to deal. Only in one case, a German prisoner, did I have to do a Schwartze operation.

In/



In this case the bacteriological report shewed ordinary organisms, but no streptococci. I detained where possible all such cases for three weeks, at the end of which time if the condition were dry, they were sent to a convalescent hospital. Those that I had to send away earlier for military reasons were in a most satisfactory condition, and everything pointed to their speedy recovery. I followed no definite line of treatment but specially favoured the "Dry Method" of mopping out the discharge night and morning if necessary. I must say that when I had to adopt syringing I regarded the prognosis not so good. I then expected a delay in healing. During convalescence a thin layer of insufflated Boracic powder was useful. But care must be taken not to close the perforation. The difficulty about this treatment is that it should be done with illumination and by experienced orderlies. I had occasion to perform seven Schwartze operations which ran an ordinary uneventful course and were sent to the base when fit to travel. I had no cases of intracranial lesions for treatment, though my colleague at another centre had two cerebral abscesses in a week.

Probably the infrequency of intra-cranial complication amongst the troops may be accounted for by their excellent physical training and high degree of resistance.

In treating Chronic Suppurative Otitis Media I met many cases of Polypi. These I removed by snare and local anaesthesia. Sometimes a small spoon and general anaesthesia were employed. Those cases of polypi situated near the Stapes or round window, especially if they were tough and fibrous, I passed to the base. In the past, whilst House Surgeon at Golden Square Throat Hospital and the Royal Ear Hospital, Dean Street, I formed the opinion that tough fibrous polypi with a long history springing from these positions were to be treated with extreme caution. I have seen Labyrinthine symptoms arise from their removal. In such cases one should always test for a functioning Labyrinth before operating.

I made many attempts in what appeared suitable cases but of long standing, to dry these ears permanently, but contrary to my experience in the recent acute cases, I met with little success.\*

Some of these I personally dressed under ideal conditions for one month, and I reluctantly came to the conclusion that the majority did quite as well with one attendance per week; provided that drops were intelligently used during the rest of the time. Probably cleanliness was more important than the type of/

\* Col. Barrett. Egypt. Journal of Laryngology  
April 1918.



of drops used, though I inclined more towards Boracic powder than towards Spiritus vini Rectificati 25-75%. However, I got the most satisfactory results from 1 week of Boracic treatment, than a couple of days of Spiritus vini Rectificati drops. There is no doubt that in these cases an extensive operation would be required to produce dryness. In many, the hearing was almost perfect, "whisper 8 yards" being very common, and the case could not have been operated upon without almost a certain diminution of hearing. I noted that by studying the round window, if the perforation permitted, regarding presence of cicatricial changes, partial obliteration, polypi, etc., one could forecast degree of hearing with great accuracy and later confirm by hearing tests.

In removing polypi I found it was a distinct advantage when there was any tendency to retained discharge, to personally dress the case for several days with Spiritus vini Rectificati before operating. By this means the size of the polypi was often greatly reduced in size, pus was removed and the local anaesthesia could be applied intimately wherever one desired.

With local anaesthesia I was very disappointed, the pain being still intense in cases which one would have considered excellent for its application and use.

But/

But on this Anaesthetic solution I cannot yet speak. Thin salmon gut is an excellent substitute for wire and considerably diminished the pain of the operation.

For cauterization I invariably used Liquor Ferri Perchloride Fortis. It appeared to me better than chromic and the after-pain is negligible. I considered it was useless to give a soldier drops for Chronic Suppurative Otitis Media to take back to the firing line. He was already sufficiently laden and was sure to cast them away. Were he bad enough to need drops he was certainly more fit for the base.

The prognosis in Chronic Suppurative Otitis Media was greatly influenced by the site of the perforation, those situated in front of and below the handle being the most resistant, - a condition explained by involvement of the Eustachian Tube. Perforations in the Attic were often very satisfactory as regards hearing, but the prognosis varied. Perforations behind handle, especially upper quadrant, are difficult to give a prognosis upon, due to probable involvement of Mastoid. Cholesteatoma was fairly common. The most unsatisfactory cases to treat were those in which a minute perforation was complicated by a mucoid discharge from the middle ear; the perforation temporarily closing and efforts at increasing and maintaining/



maintaining its patency by incision being unsatisfactory.

I saw 3 cases of polypi in the external Meatus with an apparently normal Tympanic Membrane.

External Meatal troubles were present in a larger percentage of the cases than in civil practice. First wax, often impacted; and 2nd, acute and chronic Eczema, etc. I would like to say a few words about this common complaint of wax. I may be pardoned here for commenting upon such a common complaint as wax if I make as my excuse the frequency with which it occurred in my work in France, and the harmful effects which I witnessed as a result of its careless treatment.

The syringe nozzle should always be carefully examined before commencing irrigation, for fear of a part becoming detached and injuring the middle ear and Labyrinth. I found the most trustworthy and best medicament for softening wax to be olive oil. Patients themselves prefer glycerine, peroxide of Hydrogen, etc.

Eczema was especially common in both officers and men, a fact readily explained by the long periods which intervened without washing. The patency of the Meatus and its direction appeared to be of quite secondary importance. It varied from acute to chronic, was variable in extent and often involved the Auricle. It always yielded to Goulard's Lotion, and, in acute cases, to zinc and olive oil with a pad and/



and bandage. These drugs I found better than Unna's paste, Lassar's paste, etc., whilst in the squamous form cleansing with Goulard's lotion, in preference to other lotions, and Silver Nitrate fr 5 - 20% was also very beneficial. This might be used with care in acute cases provided not too frequently employed. I found the pad and bandage most necessary.

Furunculosis was plentiful and these cases were repeatedly sent in as cases of acute Mastoiditis. I found Flavine beneficial in the treatment, but recurrence was common. It was difficult to obtain autogenous vaccines, but polyvalent vaccines in several cases gave very satisfactory results.

Injuries of the Auricle and External Meatus were seldom seen by me. These injuries were practically always complications of more severe head injuries and were dealt with by the general surgeons.

Traumatic injury to the Tympanic Membrane - the result of concussion from shell fire - was a very common condition, and I have records of 36 cases seen by me, within a few days of injury, when the diagnosis could be accurately made. Practically all of these were cases occurring during "periods of rest" in the fighting. At the end of a big battle - August 1919 - I went into the "severely wounded" wards of a Casualty Clearing Station and asked the majority of the cases, omitting the worst, if they complained of ear trouble. I found five cases of deafness without effusion of blood into External Meatus directly shewing injury to Tympanic Membrane. The men had not previously mentioned this to the Nurse or Doctor and had themselves given very little consideration to it, on account of more severe injuries. It was obvious that most of these cases would not be seen by an Aurist; cicatrization and absorption of the blood clot and rent would occur, and the scar in many cases would be imperceptible to the eye, and many would have/



have no ill effects afterwards. Both in the severely wounded and in the slightly wounded, injury to the tympanic membrane must have been a much commoner condition than statistics shew.

Site of Perforation.-

(Definitely ascertained in 16; remainder for clinical reasons or large size of perforation, not ascertainable.)

(a) Posterior Inferior Quadrant	=	8	
(b) Anterior Inferior Quadrant	=	3	
(c) Along handle of Malleus	=	2	
(d) Involving both Inferior Quadrants	=	2	
(e) Anterior Superior Quadrant	=	1	16
(f) Membrane Flaccida	- none seen.		

When the perforation was extensive it involved the posterior Quadrant to a much greater extent than the Anterior Quadrant.

The amount of haemorrhage varied, as also did the extent of the injury, from superficial blebs to a very severe laceration, with almost complete loss of Tympanic Membrane. In many cases the difficulty in accurately locating the site of injury was very great, and in some cases it was not carried out for fear of interfering with the process of repair and increasing the/

the risk of a concomitant suppurative Otitis Media. This is a condition which was always liable to occur, and with disastrous results. When suppuration occurred, it appeared to me to be more resistant to treatment than was a case of acute Suppurative Otitis Media, a fact reported on by Bourgeois and Sourdille. In the early stages the ear discharged a copious amount first of serum, then later of sero-pus. Several of these cases I kept under my care for three weeks, and personally treated. I was very disappointed, because all except two appeared to be as acute at the end of that time as at the commencement. Practically every one of these cases was severely ruptured and most of the Tympanic Membrane was destroyed. The many minute haemorrhages and lacerations in the mucosa of the Middle ear produced an excellent nidus for organisms. This I concluded also afforded the reason why these conditions produced such resistant cases to treatment. The organisms found a devitalized Mucous Membrane incapable of resisting their attack, whereas, in acute Suppurative Otitis Media the Mucous Membrane forms a distinct antagonistic barrier to the attack of the organisms and in turn destroys them. In every case where the fluid entered the tympanum, one syringing of the ear in a case of ruptured drum appeared to me to end in a suppurative condition, i.e. the perforation had to be large/



large enough to admit fluid. If the perforation was not large enough to do this, I do not think and I cannot see how syringing could produce drainage and set up Suppurative Otitis Media.

Some of these syringed perforations I saw within six hours of the act of syringing and the injury was not older by many hours. I at once set to work by the dry method to get a result, but in no case did I succeed. Boracic powder appeared to me to be distinctly irritating and was early discarded by me. Syringing with lotions was no more successful. In these cases of deafness and possible trauma considerable care was necessary to remove wax. In one unfortunate incident where I syringed, I found a medium sized traumatic perforation which ended in suppurative Otitis Media directly due to my syringing. Without doubt, therefore, thereafter I always removed wax in these suspected cases with a small spoon. Undoubtedly the pressure of wax prevented rupture especially when present in considerable amount. I saw one case, a Colonel who was near a Gotha which blew up, killing many of his men and tearing to pieces the coat he was wearing. He complained of deafness and tinnitus in the ear proximal to the Gotha only. A large pad of wax was removed by a spoon and/

and several petechial haemorrhages were apparent in the Tympanic Membrane, but no perforation was found. His hearing was normal for speech; Bone Conduction normal; Acoumeter 5 yards; uninjured ear, Acoumeter 15+ yards. I met him two months later and he had forgotten all about his trouble and said he noticed nothing wrong with either ear.

The hearing was invariably good, especially in large perforations, approximating often to normal for Speech, Whisper and Bone Conduction; but, the Acoumeter and Watch usually shewed some loss. If the hearing was bad one usually noted much laceration of the Tympanic Membrane, but no real loss of the drum, the middle ear then being probably full of blood clot. Subjective noises and giddiness were not usually complained of, and pain was usually absent. The patient often gave distressing accounts of the pain suffered during the syringing to which many had been subjected before they arrived. With many Medical Officers syringing was still much in vogue for all ear complaints even up to the Armistice, and was evidently considered the only readily available treatment for injury to the Ear. The ear affected was invariably the one which was exposed to the concussion, and in five cases, the injuries were bilateral, but more severe in one ear. In these cases the history was of a confined space, but the patients/



patients were indefinite regarding the position of the exploding shell in relationship to their ear. My experience was that when the Tympanic Membrane ruptured the resulting degree of deafness and subjective symptoms was not so great as when the Tympanic Membrane withstood the impact of the Concussion. This does not refer to those cases where one got a fracture of the Temporal bone with rupture of the Tympanic Membrane.

A predisposition to rupture of Tympanic Membrane by degenerative changes in its substance did exist, but I think this is a point of no importance. Four of my cases of very minor injury shewed atrophic patches. Nasal obstruction was present in 6 cases; in the remaining 30 cases the nasal passages provided a good airway.

I saw one case where haemorrhage had occurred into the Middle Ear without rupture of Tympanic Membrane. I left it alone and at the end of 10 days it appeared to be absorbing well. He was sent to the base.

Labyrinthine Concussion, more commonly called Concussion Deafness, is probably the result more of air conduction than of noise vibrations.

This sudden condensation of air was of much more importance in production of Labyrinthine Concussion than the noise produced by bursting shells or of gunfire. It was common to note after a long day of heavy firing, many gunners complained of deafness and noises in the ears which after a short rest of a variable period, - a matter of hours, - was completely recovered from. This was due to a "Physiological Overstimulation" of the Organ of Corti\*.

There could have been no organic lesions such as small haemorrhages in these cases, for recovery was too rapid and complete. Whilst Medical Officer to a Brigade of Artillery for a considerable period I had no evidence of our own gun fire necessitating me sending any of the men to Hospital. Whilst in a Casualty Clearing Station however I saw cases of Middle Ear and Internal Ear deafness which in my opinion were injuriously affected by gunfire producing "degenerative Neuritis" and necessitating evacuation to the base for reclassification. These men were very deaf and brought notes from their Medical Officers stating that the deafness was increasing and their length/

\* J.S. Fraser. Journal of Laryngology Nov. 1917.



length of service at the front certainly entitled one to think they spoke truthfully.

The severer cases of Labyrinthine Concussion in my experience were all due to enemy shell explosions especially in confined spaces. The degree of deafness was often very complete but I did not find it absolute in any of my cases. There was in the early cases always headache and Tinnitus even up to a Meniere Triad. Headache as a rule soon disappeared under rest and quiet, but Tinnitus was still present in every case when they passed out of my hands to the base. The Tympanic Membrane was usually uninjured. It sometimes shewed thickenings or areas of degeneration. Nystagmus was variable. A reduction in the lower tone limits was noticeable. The higher tone limits using a C 4, and Galton's whistle were unconvincing. I think if I had used a C 5 and Monocord my results would have been more consistent, but these instruments were not available. Rinne was +. Many shewed rapid improvement under rest and Bromide whilst others were not improved and their symptoms remained unchanged. These were probably cases where organic change had occurred as one would anticipate from the Menierelike symptoms.

As regards these organic changes the pathology now stands that the changes are especially found in fundus/

fundus of Internal Meatus and in 8th Nerve; \* whilst the Internal Ear appears not to be so liable to injury as one thought.

Others suggest, but have produced no definite proof, that it is due to haemorrhages in the Pons, Medulla, Auditory and Vestibular Nerves.

\* J.S. Fraser. Journal of Laryngology Dec. 1917.



HYSTERICAL AND PSYCHICAL DEAFNESS AND DEAF-MUTISM.

These cases were seldom seen by me. Those I did see were by the courtesy of the shell shock Specialist whose centre I was able to visit for some months. The history was usually that they were buried. Total bilateral deafness on admission was common, with marked Neurasthenic symptoms.- e.g. areas of anaesthesia, contraction of field of vision, interference with sense of smell, and mutism. They were rarely wounded. Mutism was usually cured without much difficulty, but the deafness was in many cases very difficult to overcome and treatment was not so successful as in mutism. In a certain small percentage recovery was rapid and brought about by sympathy, moral support, rest and good food and return to their unit. These rapid recoveries after a period of rest did not appear to be liable to a relapse, but it was very essential to remove them quickly from their shell shock associates. The worst cases never make infantrymen again, although a certain number were returned to their units: but the Regimental Medical Officers describe these men as quite useless and as exercising a harmful influence. My feeling was that if the soldier did not speedily recover from his deaf-mutism and other symptoms of hysteria/

hysteria which accompanied it, in its early stages in every case, he was fit only for "permanent base" - there was no border line type.

Theory of Pathology:-

Milligan and Westmacott May 1915 Described this condition as due to temporary suppression of impulses from higher cortical centres!

Hurst, March 1918, (Dendron Theory), contraction has occurred of dendritis which no longer arborize.



Rhinological disorders were very common especially considering the standard of physique of the patients. Its presence was more marked than any other disease of the Ear, Nose or Throat except Chronic Suppurative Otitis Media, and, I think existed in a higher percentage of the patients than one would expect to find in a similar class of men in peace. Whilst many of the conditions commonly seen, which I shall describe, were in no wise due to the conditions of life in which the patients were placed, e.g. septal deformities, advanced ethmoidal disease of long history; other diseases, e.g. Turbinal Hypertrophy, Empyema of Maxillary Antrum, were undoubtedly more prone to occur especially in the infantry soldier who had to exist in damp surroundings and exposed to all the rigors of severe weather. The high flying airman, especially of bombing machines which rise quickly to a great height and maintain that altitude for a considerable period, was a common patient, and very prone to nasal disorders. This was confirmed from various conversations with Medical Officers in charge of flying units. It was due to the engorgement of the nasal mucous membrane.

Septal Deformity was a very common cause of nasal obstruction and many cases of this condition were returned to their units as not requiring operation during/

during the war. I performed submucous resection on 9 patients, all officers or non-commissioned officers, whom I considered would thereby be able to discharge their military duties more efficiently. It was practically useless sending these men to the base for operation; the material was in excess of the Medical Officers conversant with the technique of operating. In cases of deafness and Otitis Media there appeared to be no definite relationship between the direction of the deflected septum, the resulting obstruction, and the affected ear. Hypertrophied Inferior Turbinates, and especially enlarged posterior ends, were very common. The former I treated usually with cautery in the orthodox fashion. Occasionally I used a scissors and snare, remembering well to remove the minimum amount of bony framework. The posterior ends I invariably removed under local anaesthesia with a snare through anterior nares, verifying the results, which were very satisfactory, with posterior Rhinoscopy. The Maxillary Antrum was an exceedingly common seat of disease and repeatedly required operative treatment. Several of my cases were early ones and cleared up after a few lavages. All authorities appear to agree that if this does not occur after six punctures and especially if streptococci are present, it is wiser to proceed to more radical methods.

Many/



Many of the cases appeared to be of dental origin, dental disorders being very prevalent in the soldiers from lack of facilities for cleansing their teeth.

I came in contact with four cases of Choanal polypi. This interesting condition is said to be due to air suction drawing an aural polypus through an accessory ostium, followed by rapid enlargement in both directions\* . They were removed with a snare.

The condition was explained to the soldier who was informed that probably within a few years they would return and if so a more radical operation would be necessary. Meanwhile, it was not dangerous to his life, and he was fit for duty. Unfortunately no X-Ray plates were taken.

Nasal Polypi and Ethmoidal suppuration was present more commonly in officers than men, and my records shew that I saw more officers than men with this condition. For a period of two months, I had near the Hospital 1500 Americans mostly from New York. During that period I passed on 5 cases, 4 men including 2 with subacute Frontal symptoms, to the American base hospital. In one case it was necessary to remove part of the Middle Turbinate for drainage. During the Influenza epidemic I saw several patients with symptoms of/

\* Thomas Ewing Journal of Laryngology, August 1913: from Throat Department, Edinburgh Royal Infirmary.

of obstruction of the Frontal Duct but not acute. By painting the region of the Frontal Duct with Cocaine (5%), and an equal amount of Adrenalin Chloride (1 in 1000 Sol.) relief was obtained. This produced intense nasal secretion and sneezing sometimes lasting 24 hours, the symptoms not recurring. Such things as Head baths and other electrical heating appliances were impossible to obtain. Only in one case was it necessary to open and drain externally an acutely inflamed Fronto-ethmoidal cell, again an officer who had previously had several operations for this condition. In the X-Ray plate both Frontal sinuses appeared normal. He was passed to the base in a week. Posterior Ethmoidal and Sphenoidal suppuration appeared to be present in one case which was sent to the base, the conditions under which one worked being such as to prevent one attempting any Frontal Sinus, Posterior Ethmoidal or Sphenoidal operative interference except in cases of absolute necessity.

Septal ulcer at "site of predilection" was common, probably due to similar causes to those which underlay the eczema. In one resistant case I raised the mucous membrane Sub-peri-chondrial for a small area. The remainder were treated by ordinary methods of cleanliness: some were undoubtedly aggravated by the soldier himself and improved greatly when he was informed/



informed that he would return to his unit in 14 days and was not being sent to the base.

POST NASAL CATARRH was not so common as one might have expected. Perhaps the men did not report. I had to remove adenoid remains producing this condition, and to treat the Eustachian Catarrh. The Fossa of Rosenmüller is difficult to clear, and disappointment followed some of my efforts. I had sent to me 5 cases of Bronchial Asthma, and in three of these I found sensitive areas especially on the septum opposite the anterior end of middle turbinated bone. The other usual sites were also sensitive. They were dealt with by cautery, and one was not improved. One said he was better during the 4 months in which news was obtainable from him. Of the third I have no record.

THROAT DISORDERS.

The order of frequency was first Tonsillitis, then chronic Pharyngitis. In tonsillar conditions the most common disorder was Quinsy, but all the main classifications of Tonsillitis were to be seen in their varying stages and different degrees. My previous hospital experience had led me to think that the treatment of Tonsillar conditions was an easy and satisfactory proceeding. I found however that I made more mistakes and afforded the patients less relief in the treatment of this condition than I did in any other branch of this subject. What was the cause of this? It was the difficulty of localizing the collection of pus or the exact focus of inflammation due to the amount of oedema that even a slight tonsillitis would set up; this, together with the intense pain and discomfort. A person who has once suffered from the condition will remember it.

If a patient has had the condition three days, pus may have appeared. It usually takes at least that period to form. Because you see an acutely inflamed bulging and oedematous anterior pillar and palate do not be sure of finding pus by incising and pushing in a pair of forceps and opening them! You may find/



fine nothing, and then, the patient will be much worse than before. I found it best to look for a boggy area near the position where one might expect the abscess to be, and for preference to palpate with ones finger; or if that were impossible, to palpate gently with a metal instrument, carefully noting the resistance. Then, after cleansing mouth, (perhaps best with chlorine-water and a metal syringe with a piece of fine rubber tubing attached) make a large curved incision outwards over the centre of the swelling about  $\frac{1}{4}$ " deep. If you have previously found a soft boggy area, than, push in a pair of forceps. If you have not, be content with the incision for 12 hours, and with syringes of hot chlorine solution. After that period it will usually be decidedly better. If no better, then, try to locate the pus. For a period, in those cases in which I was doubtful that pus was present, I alternately, after incising, passed a forceps in one case, and omitted doing so in the next. Every case with an incision only, did much better than the others in which, in addition, I had attempted to drain a supposed abscess cavity by passing a pair of forceps. I wish it to be understood that in all these cases one was of the opinion that one would probably not strike pus. Naturally, in some/

some cases of quinsy, where there is the characteristic "boggy area", or the general appearance of long duration, there is little dubiety concerning the presence of formed pus. Such cases call for free opening at once.

It is in those cases where doubt exists that pus has actually formed that the "incision only" can do no harm and will provide a vast amount of relief and hurry on resolution.

Not only is there immediate relief of tension but a fresh supply of blood arrives to the stagnant and oedematous area.

In milder cases I would delay the incision until morning, as I found that the patient complained of the continual oozing from the incision interfering with sleep. The toilet of the mouth in all these cases is most important. Hourly syringings right to the posterior wall of the pharynx and region of the tonsil is most necessary and should be done by a careful person. I found the long Eustachian catheter glass syringe and rubber tubing most useful and certain. I think the impact of the lotion in this case is very beneficial in removing the closely adherent secretion and preventing its spread to the other tonsil, a common occurrence in neglected cases. The impact of this stream of fluid produces contraction of palate and/  
and/



and pillars; squeezing and massaging the tonsil and emptying its loaded and stagnant crypts. I had no cases of the other tonsil becoming involved whilst actually in Hospital, though on admission, several shewed early signs of inflammation. This limitation to the tonsil is to be attributed, in my opinion to lavage by catheter. What possible result can a man get from gargling? In a Quinsy, the tongue will prevent an ordinary stream of water reaching the tonsillar region unless a tongue depressor is used properly (and that is not an easy undertaking in many cases,) whereas the beak of a catheter can be put wherever it is desired. In the acute stage hot fomentations to the neck were very comforting to the patient, but it was best to avoid extending the bandage over the head and ears, the drumming thereby being greatly increased.

In Tonsillitis the membrane formed very often closely simulates a Diphtheritic Membrane and one may be left in considerable doubt if other cases of Diphtheria are common at that time. After consultation with the Medical Specialist I did not hesitate to give 6000 units of antitoxin where the bacteriological report would be 36 hours in coming to hand. In those cases which were returned as not positive, i.e. Klebs-Loeffler's Bacillus; the antitoxic serum appeared to have a most beneficial effect.

It certainly produced no untoward symptoms. I removed the tonsils by enucleation from three cases of "Diphtheria Carriers", two of whom were cured.

The third was not. The tonsils in the former two were full of debris and other accumulated secretions. Ballantyne and Cornell<sup>\*</sup>, report finding the Klebs-Loeffler bacilli deep in the crypts and quite inaccessible to irrigating lotions. Another Tonsillar condition which one must bear in mind is that of septic absorption and discomfort from a blocked duct.

I saw two cases of this condition concerning the diagnosis of which I was a little sceptical until in each case the swelling burst into the mouth.

There/

\* Ballantyne & Cornell. British Medical Journal, November, 1917.



There was no inflammatory reaction, only a little swelling, enlargement of glands and some discomfort. It is very difficult to find the blocked duct.

A great many cases of Chronic Pharyngitis presented themselves for treatment, practically all officers, and with the usual unsatisfactory results. This most distressing complaint may take on a variety of symptoms from merely a feeling of uneasiness to that of a painful sensation similar to that produced by the presence of a sharp foreign body. The signs of this condition may vary from a typical granular pharyngitis to what apparently appears to be a normal mucous membrane. The distress which they speak of is most vivid, and their mental anxiety is quite apparent. Most complained of the want of tobacco, and of their subsequent distress when they did indulge. A nervous element predominates in this condition. The repeated application of the cautery with its subsequent cicatricial changes is more injurious than beneficial. Occasionally an isolated follicle may lend itself to treatment by this method; otherwise, unless nasal suppuration has been the cause, the prognosis as regards permanent relief is unfavourable, but temporary relief may be obtained by either sips of milk, or by lotions hot and cold, especially the latter. Personally in this condition I have seen no benefit from Pigmentum Mandl.

LARYNGEAL CONDITIONS, as the list shews, were exceedingly rare. The examination of the larynx in irritative conditions is much facilitated by a preliminary injection  $\frac{1}{4}$  hour before hand of Morphine gr  $\frac{1}{4}$  and Atropine gr  $\frac{1}{120}$ . One foreign body, a small piece of tin about the size of sixpence, found its way into the right Pyriform Sinus while the patient was eating bully beef, and, coated with mucous was removed by the indirect method with laryngeal forceps. The patient was not inconvenienced by any after results.

I saw one case of laryngeal tumour which was sent in as a case of asthma, the patient previously having had one removed, but not being aware of the fresh growth. The case was sent to the base, the man being obviously not fit for the firing line. It appeared to be attached to the right vocal cord.

I saw one case of gummatous infiltration of the larynx, with a specific history of long duration, but no other signs. He gave a double Wassermann and had been on service for three years in the Royal Army Service Corps. He had previously had no symptoms of a laryngeal nature, and complained only of hoarseness.

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I saw a certain number of cases of Functional Aphonia. They were all of a mild type, and yielded to treatment by suggestion. The only difficult cases were those which presented themselves for treatment together. Evidently the presence of each retarded individual recovery. In future I decided never to have under treatment more than one case at a time. I sent the others to the base if they were not cured at the first sitting. I do not think that malingering was a feature in any of these cases, but a firm attitude was very essential, combined with sympathy. Most cases of this type including the most severe examples, were to be found in the shell shock centres of the army, and I had therefore very little opportunity of studying them.