

## CHAPTER 56

### EAR, NOSE AND THROAT

EAR, nose and throat surgery in the Services has followed the lead of this specialty in civil practice and at the beginning of the war was firmly established as a necessary part of the surgical activities of hospitals, even if these were stationed at forward bases. It was not long before the rising volume of work showed, not only the need for the specialty in the army, but also the wideness of the mesh of recruiting examination, through which slipped numbers of men with chronic aural conditions in particular likely to give trouble on service.

The acute conditions depended in part on the environment, which, in camps and transports particularly, produced crops of infections of the upper respiratory tract. The severe epidemics of these diseases during the winter of 1940 in the various training camps in Australia were responsible for a number of these, but as the accommodation in these camps caught up with the urgent requirements of mobilisation, the position eased. Most of the work of these epidemics fell on the staffs of general medical wards in the hospitals, but a great number of aural and nasal complications needed special attention. As time went on and more men overseas were engaged in training or action in the desert, a growing proportion of them were seen with other acute conditions of this kind, notably *otitis externa* and the traumatic affections of the ear. *Otitis externa* became really troublesome in the island campaigns. The traumas of the ear included those due to blast, either from aerial concussion, from artillery or from bomb explosions, and the important barotrauma occurring in aircrews subjected to considerable changes in pressure through elevation.

#### RECRUITING STANDARDS

Before passing to the clinical considerations encountered, it is necessary to deal with the question of recruiting standards. In July 1940 the A.I.F. standard required for class I the ability to hear in each ear a whispered voice at twenty feet, and for class II ordinary speech in both ears at ten feet. It was not till 1943 that specific instructions were given to include an auriscopic examination: before this date it was usually made only if the finding of subnormal hearing suggested the existence of cerumen. The ability to hear low or high pitched sounds was tested roughly by the use of words with appropriate overtones, and the standards for hearing were modified to suit the now altered system of classification. At this time, an otologist became a necessary member of the consultant staff required for special decisions in a recruiting centre. Various modifications were made in the detailed instructions, but in the latter years of the war the rulings were as follows: perforation of the drum, aural discharge or a mastoid scar did not necessarily disqualify a man from service; men with

persistent offensive discharge with posterior or superior perforation were classed as unfit, but those with intermittent or continuous non-offensive discharge from an anterior perforation might be class A2 or B unless the otologist considered the condition severe. A dry perforation of the drum was no bar to acceptance in classes A1 and A2, neither was the presence *per se* of the scar of a mastoidectomy. In 1945, a man who could hear ordinary speech in both ears only at a distance of five feet could be accepted for the lowest serving category, B2. No mention was made of otosclerosis, nor was there at any time any direction about examining the nose or accessory sinuses.

#### INFECTIONS OF CIVILIAN TYPE

It will be seen that it was inevitable that men would enter the forces with various chronic conditions which might deteriorate during service, thus making them eligible for pension rights. These conditions included chronic forms of deafness, suppurative *otitis media*, mastoiditis, sinusitis, and nasal polypi. In the early years of the war this was particularly evident. In Palestine only one hospital, the 2/1st A.G.H., worked fully during the first year and its experience epitomised the position about disabilities of the ears, nose and throat. As well as the acute diseases, such as *otitis media* and sinusitis, requiring treatment in hospital, large numbers of chronic conditions were seen, necessitating a busy out-patient clinic, at which attendances even with a restricted intake were up to sixty per week. In-patients were often over eighty in number, and at times exceeded a hundred. During the war period, numbers of men with chronic nasal or aural disabilities passed repeatedly through forward and base medical units with exacerbations of infections present before enlistment, but army general hospitals found the numbers decreased somewhat in 1944 and 1945, owing to the more careful selection of recruits. This experience has shown that patients with chronic or recurrent suppurative *otitis media* should not be classified higher than B.

Little need be said of the acute states treated, as these follow familiar civilian patterns. In the period 1940-1942, there was no definite agreement on the indications and contraindications for sulphonamides in acute *otitis media*, but some caution was considered advisable, since a fall in temperature and lessening of discharge might mask the onset of lateral sinus thrombosis or brain abscess. Sulphamerazine was used later with good effect for acute sinusitis, and the local application of penicillin was found valuable in some army hospitals, particularly when haemolytic staphylococci were the infecting agents. Penicillin was used parenterally with success in acute sinusitis, but not in chronic infections, even when the organisms concerned were sensitive.

Non-urgent conditions gave some trouble, such as recurrent tonsillar infections, and deviation of the nasal septum. Senior medical officers of some army hospitals expressed the opinion that too many men were referred for tonsillectomy because of some vague "fibrositis", or for septal

deviation when neither condition appeared relevant to the men's health or comfort. A technical instruction was promulgated in 1942 forbidding the carrying out of interval surgery in field ambulances or except by express direction of A.D.M.S. or D.D.M.S., in casualty clearing stations. In 1944, a further instruction expressly stated that nasal septal deviation was not a general disability preventing active service. This statement, though largely true, did not take into account the importance of marked septal deviation in predisposing towards and prolonging sinusitis. It should be noted also that in 1942 a consultant physician informed the D.G.M.S., Army, that chronic paranasal and aural infections were not infrequently overlooked by medical boards.

#### TRAUMATISM OF THE EAR

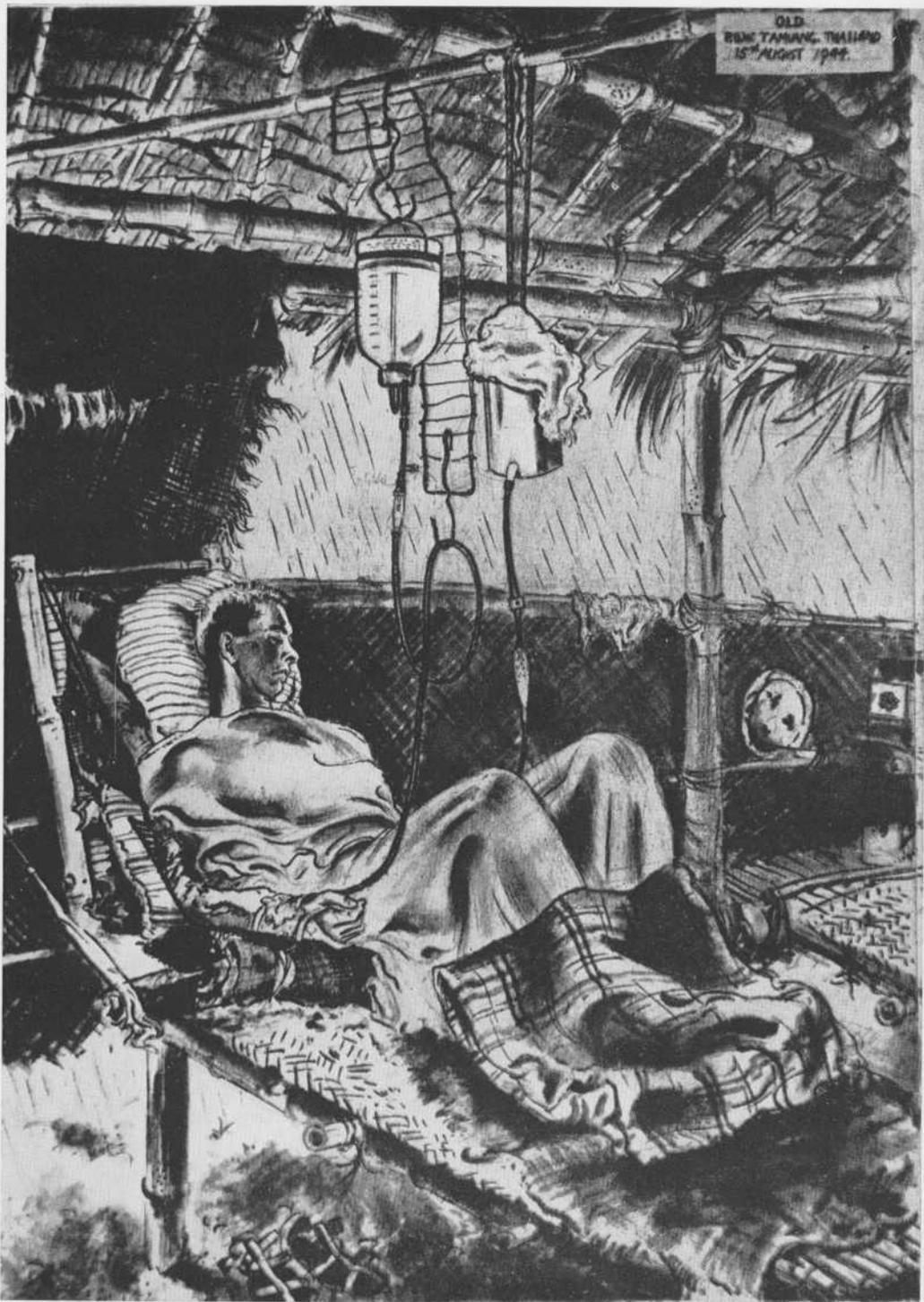
Traumatic conditions affecting the ears were found to be of some importance. In 1941, in Tobruk, perforations of the drum were seen not uncommonly. These were occasionally said to be multiple, but more usually large and single, placed laterally and often, though not always, permanent. Infection there was rare. Both in the 2/4th A.G.H. in Tobruk, and in the 2/7th A.G.H. at the time of the Alamein battle, little loss of hearing was noted, but the possibility of some later disability was recognised, owing to the probability of coincident damage to the cochlea. In the 2/6th A.G.H. in 1942, a larger proportion of secondary infections of the middle ear was observed following rupture of the drum by blast, rising as high as 60 per cent. This has been attributed to the greater prevalence of infective organisms in areas more closely populated than the bacteriologically sterile desert of the 1940 campaign, but it seems likely that infecting bacteria also came from the patient's skin, carried in by blast or by the introduction of drops. Sulphonamides given orally were found to be effective for these infections. In Changi, Singapore Island, after the capitulation a number of cases of "blast ear" were seen with little deterioration of hearing. Though some patients had otorrhoea for variable periods, perforations made little difference in hearing.

The prevention of these injuries was considered. The problem varied in different circumstances. Artillery units and gun crews on ships were able to adopt some preventive devices, and considerable experimentation went on, through which better types of ear plug were evolved; these permitted a useful degree of hearing yet shielded the drum from damage by the waves of compression and rarefaction. Blast from bombs was a different matter, and it was natural that severe damage to the ears might take place under conditions to which the already shielded lungs were vulnerable. The well known vagaries of blast waves were noted in this form of aural damage. Tank crews were particularly susceptible to blast injuries, for instance, if a tank ran over a land mine. Other forms of barotrauma peculiar to airmen are best dealt with in connection with other aviation subjects.



Post-operative nursing for empyema, Tamuang, Thailand.

(Drawn by A. G. Old)



Post-operative nursing, using intravenous and rectal saline, Tamuang.

(Drawn by A. G. Old)

## OTITIS EXTERNA

*Otitis externa* was occasionally seen in the Middle East forces, but was not very troublesome. In Malaya it gave a good deal of trouble: in the Pacific Islands and in Queensland and the Northern Territory severe *otitis externa* was very prevalent among the Australian forces. As is usual it was called by several names, such as "tropical" or "Singapore" ear or "mycotic" otitis; the first of these is the most accurate, as it was not usually due to a fungus. Troops in Colombo found it prevalent, and the 8th Division in Malaya recorded a high incidence, particularly associated with bathing. In Morotai and Borneo it was also common, but in New Guinea the large numbers involved gave opportunity for considerable study and also search for the most effective treatment. Various types and stages were recognised. Technical Instruction No. 62 was issued entitled "Mycotic infections of the ear". This described three stages: (1) with tenderness, but little abnormal to be seen in the canal, except debris and white foamy flecks, (2) with redness and inflammation, of the canal associated with great tenderness, and (3) with swelling of the canal even to the extent of obliteration. Treatment was laid down for each stage. Spirit drops, and "tropical ear drops" containing chloroform, camphor and thymol in paraffin were advised for earlier stages and packing with various solutions for the swollen type of canal. Castellani's paint was also advised. Later this instruction was withdrawn, and No. 123 substituted. In this it was pointed out that there was no unanimity of opinion as to the causative agents, nor was there any specific treatment. In general, cleansing followed by careful *tamponnade* was advised, and patients not responding were sent to hospital. Experience enriched the descriptions of this condition, and revealed considerable differences of opinion in treatment.

The commonest type was the desquamating variety, which made up nearly half of those seen in some large series. A lesser variant of this caused only a dry scaliness of the epithelium of the ear canal. The most intractable type was moist and eczematous in nature; this sometimes lasted six or twelve weeks. A furuncular form was also seen, in which, as in the other severer types, recurrence was prone to occur. The most usual appearance found in early stages of *otitis externa* was a dry red canal, which if untreated became moist and yellow, with sodden epithelium and some discharge. Oedema of the canal was variable; pain depended on the degree of swelling present. When the canal was dry or desquamating the condition was usually not severe enough to be troublesome, amounting to little more than some aching or discomfort on chewing. When inflammatory changes became more severe, particularly when associated with enlargement of the pre-auricular glands, and with swelling so severe as to block the ear canal, pain was often very severe. Inflammation sometimes invaded the surface of the drum also, and when the drum was perforated in addition, the discharge and inflammatory changes were harder to control.

In the 2/9th Australian General Hospital in New Guinea Quayle reported that of 739 in-patients treated in ear, nose and throat wards, 293

had *otitis externa* and 188 *otitis media*: the former accounted for 339 of 1,120 out-patients. In 65 per cent of the cases of *otitis externa* *P. pyocyanea* was cultivated, and in 16 per cent coliform organisms. He only found a fungus in 4 out of 25 investigated. Quayle observed that the natives had wider and straighter canals than the Australians, and were seldom infected. In an advanced base in New Guinea, E. L. Davis found the *trichophyton* in 11 out of 22 cases. Basil Jones found it in 39 out of 76. In this, as in other series, bacteria were also found. *Staphylococcus albus* was common in patients with *otitis externa* but also in controls. The commonest bacteria found were *P. pyocyanea*, *Staphylococcus albus* and *aureus* and *Proteus vulgaris*.

Treatment of the milder types was not so difficult. Quayle thought the mycotic variety was easier to cure, but this may be due to the importance of bacterial infection in the severer types. Where a fungus was found Castellani's paint gave good results, and ichthyol in glycerin proved a reliable routine application. Earnshaw obtained good results by packing the canal in the severer infections, so as to compress and separate the swollen walls: this could be done only under morphine or general anaesthesia. This drastic method was not favoured by all. Good results were reported from the repeated use of drops of ichthyol or a mercurial or silver preparation, either with or without a gauze wick. If packing was used it was only for a brief period, usually two days, after which spirit drops and a mercurial antiseptic were used. Watery solutions were not used except perhaps for preliminary syringing to remove debris. Penicillin was used for some of the very acute varieties, and proved effective, though recurrences were seen. Chronic types sometimes responded to the instillation of penicillin, 250 units to 1 cubic centimetre. Here, too, relapses occurred, but could be partly prevented by after care. It was recognised that manipulations in the ear canal, even with a cleaning stick and wool, should only be carried out by the skilled hand. A no-touch technique was recommended in the official instruction.

Preventive measures were important. Bathing in streams carried the risk of infection, especially in New Guinea, where even sparkling clear streams were frequently polluted. Early treatment, using some simple form of ear drops, was of value in preventing severer grades of inflammation.

It is significant that *otitis externa* was so common a cause of disability in the moist tropical climates, for it is really a dermatological complaint affecting a specialised region. Like other maladies of the skin in the tropics, it was a considerable waster of efficiency.

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