WAR WOUNDS AND AIR RAID CASUALTIES

The following is one of a series of lectures on the Treatment of War Wounds and Air Raid Casualties recently delivered at the British Postgraduate Medical School

MEDICAL ORGANIZATION IN THE FIELD

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The wounded are collected from the firing line by the regimental stretcher-bearers (non-medical personnel trained in first aid); the first field or shell dressing, and possibly temporary splints, are applied; and the wounded are carried or directed to the regimental aid post, where the medical officer of the unit is located.

Regimental Aid Post.—Here first aid is given; urgent haemorrhage is controlled by direct pressure or forcipressure, and in cases of absolute necessity by a tourniquet. Morphine is administered if necessary (the dose and time being noted on the field card). The patient is kept warm with waterproof sheet and blankets, and is evacuated as soon as conditions allow to the advanced dressing station by the stretcher-bearers of the field ambulance.

The Field Ambulance.—This is the first medical unit to receive the wounded. The field ambulances move in the rear of the fighting troops and, when contact with the enemy is made, one company establishes a post known as an advanced dressing station within reasonable distance of the regimental aid posts.

Advanced Dressing Station.—The surgical possibilities here are very limited, and consist in the control of haemorrhage, the splinting and extension of fractures, if not already carried out, and measures for the prevention of shock. Dressings and splints should be examined, and if satisfactory left alone: morphine is administered if necessary, and the dose and time entered on the field card. The advanced dressing stations are situated well forward so as to be in touch with the regimental aid posts, to save the stretcher-bearers carrying for long distances, and, of necessity, are often in the zone of fire. In stationary warfare they are frequently in dug-outs.

A Walking Wounded Collecting Post.—This may often be arranged with advantage when heavy fighting is expected. This should be close to the advanced dressing station and near a road leading to the casualty clearing station for evacuation.

Main Dressing Station.—This is the next medical post, which is established by the headquarters of the field ambulance. In France the main dressing stations were as a rule two to six miles behind the fighting line. Here emergency operations can be carried out, such as ligation of bleeding vessels, amputation of shattered or crushed extremities, and the closure of open sucking chest wounds. A dental surgeon is also here to assist in the emergency treatment of maxillo-facial injuries. More active measures for the prevention and treatment of shock are possible, and infusions or transfusions of blood may be given. Here the routine injections of anti-tetanic serum are given and noted on the field card.

In these days of increased mechanization it may be possible to cut out one or even both of these dressing stations. Anything that will lessen the time of evacuation

and avoid unnecessary unloading and reloading of patients in ambulances and get them more quickly to the operating centre must be of great benefit.

The Casualty Clearing Station

The casualty clearing station is the principal surgical unit and operating centre in the forward area. These units form the connecting links between the forward area and the hospitals on the lines of communication. They are equipped with operating theatre, x-ray department, laboratory, etc., so that all major surgical operations may

Diagrammatic scheme for evacuation of casualties.

be carried out. In France the C.C.S.s were usually ten to fifteen miles behind the firing line, beyond the range of severe shell-fire. They should be on or near a railway line, so that evacuation by ambulance train can be carried

out. They are designed to take 200 patients normally, but can expand to receive very many more. In the great war eight to ten operating teams were often working simultaneously and continuously for several days.

It may be of interest to recall some of the numbers that were dealt with in C.C.S.s in the great war. In the Battle of the Somme in July, 1916, thirteen C.C.S.s of the 4th Army received and treated 37,000 wounded in three days. It is obvious that at such times of heavy fighting operations for primary suture are quite impossible. It is hoped during more normal times to be able to retain the serious cases—abdominal wounds and chest wounds, severe fractures, and cases of primary suture—for seven to ten days, but at any time a mass clearance of cases may be essential. It was found an advantage to arrange C.C.S.s in groups of three: cases could then be diverted from one C.C.S. when full and another opened up, so as to give the surgical staff a chance to compete with the operative work and arrangements for evacuation.

The usual means of evacuation from the C.C.S. is by ambulance train. The C.C.S. is a mobile tented unit, though often in the stationary trench fighting of the great war units remained in the same position for months and were frequently housed in buildings. They are composed of a heavy and a light section. The light section can be moved rapidly and established in a fresh area, and carry on until the main part of the unit has evacuated its cases and moved up; or it can be used as a mobile surgical team to reinforce another unit in times of heavy fighting.

General Principles

To sum up the general principles of surgery in the field. The main operating centre is the casualty clearing station. These units may be situated ten to fifteen miles behind the actual fighting line, but experience has shown that with modern motor ambulance transport the extra time taken to get the wounded a few miles further back than the main dressing stations is only a fraction of the time taken in getting them from the firing line to the field ambulance. It is well worth while to take this extra time to get the men to an area which will be more or less free from enemy fire, where more elaborate and permanent arrangements can be made for resuscitation and operation, and, more important still, where serious cases can be retained for some days at least and efficiently nursed before being evacuated further down the lines of communication.

In the forward or field ambulance area, with the exception of a few emergency operations, treatment is based on rapid evacuation and on general treatment of the patients to control haemorrhage and prevent shock, with the idea of getting them to the operating centre as rapidly and in as good a condition as possible.

Evacuation by Air

At the present time there are no authorized air ambulance units, but evacuation by air has been employed with success in India, Iraq, and other places. While there are great advantages in this method there are also certain difficulties: first, the number of casualties and planes likely to be available; secondly, landing grounds are unlikely to be available further forward than the C.C.S. area, and most of the time taken up in evacuation is in getting the patients from the firing line to the field ambulance. With the further development of the helicopter type of machine we may be considerably nearer the solution of this problem.

Special Hospitals

Lastly, the establishment of hospitals for the segregation of special types of cases, both abroad and at home, is of the greatest value. The most numerous of these are the orthopaedic cases and nerve injuries, many of which require months of hospital treatment before cure. Special hospitals are also required for maxillo-facial injuries and chest and head wounds.

RESEARCH IN LUNACY AND MENTAL DEFICIENCY

REPORTS TO THE BOARD OF CONTROL

The twenty-fourth annual report of the Board of Control for the year 1937 again appears in two parts. The first, which dealt with administration and statistics, was reviewed in our issue of November 12, 1938 (p. 1006). There has now been issued a supplement,¹ a far more bulky volume, comprising mainly the reports from a number of mental hospitals on their research and other scientific work, and what are called the "entries"—really lengthy and detailed memorandums—made by the commissioners of the Board on their visits to the different institutions.

Chronic Infective Processes and Mental Symptoms

The communications from the clinics and laboratories of mental hospitals number seventy-two. They are headed by a long and important report from the Joint Board of Research for Mental Disease, City and University of Birmingham. It runs to nearly 100 pages, and is of such a character that one hopes that with previous reports from the same quarter it may find separate publication instead of being buried in an unwieldy annual volume. It is concerned once again with the influence of chronic infective processes in relation to mental symptoms. These workers at Birmingham, headed by Dr. T. C. Graves, chief medical officer of the city mental hospital committee, contend that although other factors predisposing to mental disorder may be present the existence of sepsis should never be disregarded. When properly directed and applied, the removing of septic and irritating areas, the conversion of closed into open sepsis, and the treatment of residual sepsis have been found to offer the greatest hope for alleviation of the suffering of the patient, and they hold that it should be used as a primary therapeutic measure. But the work must be done thoroughly. "There is no other branch of medicine or surgery," writes Dr. Graves, "in which the work can be more incompletely done and therefore made ineffective." The argument is supported by thirty-nine detailed case histories. These include several cases in which heredity and familial disease were conspicuous, and yet the treatment of the septic disease produced in some cases a substantial recovery and in others a distinct amelioration of the mental disorder. Some of the patients had suffered head injury or were subjects of alcoholism or gastric disturbance, all of which may be precedent to mental disorder, but here again the removal and drainage of the septic focus was efficacious. The route by which influenza exerts its debilitating action on the nervous system is declared to be by the causation or lighting up of sepsis. In cases of insomnia, with or without headaches, the treatment of the sepsis has been followed by the disappearance of symptoms hitherto proof against sedatives and hypnotics.

The Birmingham work is referred to in the general summary prefacing the reports, where it is pointed out that, impressive as such a statement undoubtedly is, the subject is one upon which opinion as yet is far from agreed. These thirty-nine cases were, after all, selected

¹ Part II. H.M. Stationery Office. 8s. 6d. net.