FORWARD NEUROSURGERY IN ITALY

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O.C. Mobile Neurosurgical Unit

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This report analyses 700 consecutive neurosurgical cases admitted to a detachment of a mobile neurosurgical unit situated at the Casualty Clearing Station level in the Italian campaign. The work covers the 9 months' period from the beginning of the campaign to midsummer of 1944 as the 8th Army was advancing up the Adriatic coast.

In this sector of the front the lines of communication were long and narrow, and evacuation to the base was by rail only. Air evacuation, so successfully employed on the other side of Italy and now from Western Europe, could not be provided due to the nature of the terrain. For this reason it was not possible to place a unit in such a position that it could both hold cases for a reasonable length of time after operation and at the same time receive them early enough to minimize the ever-present danger of sepsis. Thus, as in the campaign in the Middle East (Eden, 1943), the unit was split into two operating teams, a forward detachment attached to a forward C.C.S. and a rear section at the base hospital level to receive and hold casualties operated on by the forward section. For the most part this arrangement functioned according to plan.

A COMPOSITE SPECIAL TEAM

The idea of specialist teams working together in close collaboration in the forward areas was first conceived by the administrators of the 8th Army in the Middle East, where the neurosurgical and ophthalmic units were usually attached to the same C.C.S. Later on this combination was further augmented by the addition of the maxillo-facial team. Thus at the beginning of the Italian Campaign there existed a composite team made up of a mobile ophthalmic unit and the forward detachments of the neurosurgical and maxillo-facial units. The same arrangement of special units held good at the base, where the rear sections of the neurosurgical and maxillo-facial units and an eye surgeon all worked in the same base hospital. At the base section were received the casualties from the forward detachments, as well as many battle accidents occurring along the lines of communication and patients from the Jugoslav theatre of operations. This "Trinity," although consisting of 3 separate units, was always considered as one large special team which, as the Army advanced, moved from parent unit to parent unit in its effort to receive battle casualties as soon as possible after wounding. This composite team was attached to the C.C.S. which most conveniently drained the whole battle front, i.e., the most forward bottle-neck C.C.S. In most situations, the casualties arrived within 24 hours; in others, depending on the rapidity of the advance and the condition of the roads, the time interval was longer.
The average time interval between wounding and operation in this series was 27.6 hours (maximum 5 days—minimum 6 hours).

The advantage of having the forward special units together are fairly obvious. In the first place, the sorting of casualties by the medical officers farther forward is facilitated: all patients with wounds above the neck are immediately evacuated direct to the special teams. In the second place, many of the wounds are of such a nature that they require treatment by two or more of the special surgeons. The fact that these surgeons are in the same place obviates the necessity of harmful transportation, discontinuity of treatment and multiple anaesthetics in patients who are, not uncommonly, dangerously ill.

**THE C.C.S. AS A PARENT UNIT**

Casualty clearing stations, to which the units were attached, in every case were accommodated in buildings, usually schools or monasteries. In some instances, due to limitations of space, all the teams were obliged to work in one large operating theatre, but it was found that they functioned more efficiently when separate theatres were provided.

There are certain disadvantages under which special units attached to a C.C.S. must necessarily work. These are due to the fact that the C.C.S. is a mobile structure, transports its own equipment, which therefore cannot be elaborate, and must adapt its equipment and the accommodation provided to fulfil its needs. Thus the X-ray and laboratory facilities are limited and cannot attain the standard that exists in a base hospital. The patients, unless dangerously ill, cannot be held for more than 2 or 3 days and must be evacuated to make room for more casualties, and this also applies to head cases. In rush periods, beds are at a premium, and at times it is necessary to nurse dangerously ill patients with head injuries, and even patients with complete spinal cord lesions, on stretchers on the floor.

Nevertheless it was felt that these disadvantages were outweighed by one paramount factor: the patients were given the benefits of complete operation early, with the result that in a large percentage of cases the long drawn-out treatment of intracranial infections with their attendant dire consequences was eliminated.

**PERSONNEL AND OPERATING FACILITIES**

The neurosurgical component of the “Trinity” consisted of one surgeon and an operating staff of three. One ward sister, well trained in the difficult art of handling postoperative neurosurgical cases, was found to be almost indispensable. Too much cannot be said for the khaki-clad nursing sisters who cheerfully work in the forward areas, often under very bad conditions. One anaesthetist was shared by the three units. In battle periods this led to situations in which he would often have 3 and occasionally 4 anaesthetics under way at one time. He must needs be an adept and experienced anaesthetist. In order to circumvent this difficulty to some degree, regional block anaesthesia, using 1 per cent novotox, was employed in 56 per cent of pene-