The end of the great war

Ninety years ago, on 11 November 1918, at 11 am ('the eleventh hour of the eleventh day of the eleventh month'), an armistice was declared which marked the end of 'The Great War' as it was then called, now downgraded to 'World War 1' or even 'WW1'.

The only thing that ever benefits from a war is medicine. Amid the carnage, the immense loss of life, the millions maimed in body and in mind and the horrible sufferings of those 4 years, remarkable advances were made in almost every field of the healing art.

Effective inoculation against typhoid fever, antitetanus serum, sanitation control of the dysenteries, typhus and meningitis, treatment of psychiatric casualties, management of gunshot wounds by excision and delayed primary suture, effective management of penetrating thoracic, abdominal and cranial injuries, and humane management of military psychiatric patients list just some of the striking examples of medical and surgical progress made in that period.

It is both an interesting and a salutary exercise to take down and glance through any old bound volume of any medical journal, tucked away on the back shelves of the library, that was published during that period and to read the papers written by service medical officers, who were more often than not working under difficult, indeed dangerous, conditions. Turn, for example, as I did, to the *British Journal of Surgery* of 1918:

Captain Forbes Fraser RAMC (Royal Army Medical Corps), director of research of a team of surgeons, bacteriologists, anaesthetists and a radiologist, presents a final report of research carried out at a CCS (casualty clearing station, where most immediate surgery was performed directly behind the fighting lines).

This is brilliantly illustrated with colour paintings and shows the value of wide excision of all contaminated and dead tissue with delayed suture of the wound 5 days to 1 week later. This was perhaps the most important surgical lesson of the war, and one that was forgotten and had to be resuscitated in the early campaigns of World War 2.

Major Harvey Cushing, director of the US Army Base Hospital in Flanders, in a massive, profusely and brilliantly illustrated 136-page article (which journal would countenance this length today?), entitled 'A study of a series of wounds involving the brain and its enveloping structures', details 250 patients under his personal care at a CCS. He lays down the principles of management which apply today – wound excision using suction to remove destroyed brain tissue (a technique first described by Cushing), removal of metallic foreign bodies with an electromagnet – another Cushing contribution – and primary wound closure. The exception to the need for delayed wound closure was found to be wounds of the scalp and face, because of the excellent blood supply of the skin of these areas. (Cushing, of course, is acknowledged as the father figure of American neurosurgery.)

Another paper, by Captain Max Page RAMC, later to become a distinguished orthopaedic and trauma surgeon at St. Thomas' Hospital, reviews the early treatment of compound gunshot wound fractures of the femur. There is a detailed account of the use of the Thomas splint both for immediate immobilization and definitive treatment. This splint had been introduced to the Western front surgical teams by Sir Robert Jones of Liverpool, who had been appointed Director of Military Orthopaedics. (Hugh Owen Thomas, who had devised the splint, was Jones' uncle.) The stretcher bearers at the regimental aid posts had been trained to apply the splint blindfolded; they were then capable of crawling out into no man's land at night, to splint and bring in the soldiers with smashed limbs lying there – there was a corresponding dramatic fall in the early mortality from compound femoral fractures.

Turn now to the *Lancet* from 1918. There is an 'annotation' on camp infections, which describes the outbreaks of cerebrospinal fever, measles followed by pneumonia (with a mortality of 25%), and of lobar pneumonia with high incidence of empyema, all of these traced to overcrowding of men in tents and huts. A leading article then reviews effective methods of delousing troops and their clothing. The louse *Pediculus humanus corporis* transmits trench fever, relapsing fever and typhus. Clothes should be soaked in petroleum, cresol or lysol or disinfected by steam or dry heat in special huts. Most of the advertised insecticides are useless. (Trench fever, by the way, was first described by Major JHP Graham RAMC in the *Lancet* in 1915 and shown to be caused by a louse-borne virus.)

Colonel WE Hume RAMC, consultant physician to the British Expeditionary Force in 'A study of the cardiac disabilities of soldiers in France' records 5000 soldiers sent to a base hospital with suspected cardiac disease. Of these, 55 had gross organic cardiac disease, 85 some other, easily diagnosable, non-cardiac lesion while the rest had 'disorderly action of the heart', e.g. chest pain, dyspnoea, breathlessness – the 'soldier's heart', which had been described in previous wars back to the American Civil War. More than half these men were able to return to duty in 4–5 weeks on a regimen of 'exercise, good food, undisturbed sleep and regulated discipline'.

But as well as the technical papers, spare a moment to read the long lists of casualties – dead, missing and wounded – of the medical officers. These were mostly the young regimental medical officers who were killed or wounded bringing in and tending to the wounded under fire.

The First World War should be remembered not only by the cenotaphs and war memorials and by Remembrance Sunday but also by the enormous advances in medicine made by dedicated doctors in the armed forces. I repeat my earlier statement – the only thing to benefit from war is medicine. BJHM

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