

# Medicine and the Spanish Civil War

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The very moving exhibition 'Dreams and Nightmares' mounted by the Imperial War Museum from November 2001 until April 2002 reminds us all too appositely of the horrors of warfare. The loss of life suffered as a consequence of the Spanish Civil War has been estimated as perhaps half a million<sup>1</sup> and the scale of mutilation and disease attributable to it was colossal. If the First World War was the first major war in which casualties inflicted by direct military action outnumbered those caused by disease<sup>2</sup>, the Spanish Civil War may well have been the first in which civilian losses exceeded those of combatants. One of the very few redeeming features of warfare may be that it can stimulate progress in various aspects of medicine and surgery. Although medical historians have cast doubt on this belief<sup>3</sup>, the Spanish Civil War may offer some support for it.

The uprising began with a military coup in which the Nationalist forces under General Francisco Franco soon gained control of sizeable areas of the country. The government (Republicans) responded by melding the militia columns into a popular army.

Apart from the army medical branch, which almost entirely supported the insurgents from the outset<sup>4</sup>, the majority of doctors continued to practise their profession wherever they happened to be located at the outbreak of hostilities, without distinguishing between the loyalties of their patients. A few were executed early in the proceedings—by the rebels because they were thought to be Freemasons, or by one or other of the government factions because they were thought to be Catholics. Some were called up, some volunteered, some continued in civilian practice, but the distinction between military and civilian medicine became very blurred: front-line army mobile hospitals accepted sick and wounded civilians, and wounded soldiers were often evacuated back to rearguard civilian hospitals<sup>5–7</sup>. Doctors not in uniform often found that the town in which they were working would fall to the opposing side, but victimization of this group was surprisingly uncommon in a war in which reprisals were swift and bloody: this was largely because of the impartial stance of the profession and the need for medical expertise.

## BIAS IN SOURCES OF INFORMATION

In the UK the sympathies of the middle and working classes lay overwhelmingly with the various left-of-centre groups which comprised the Republic. This was generally true of English-speaking nations. Numerous writers and intellectuals were among those from all walks of life and from many countries who went to Spain to join the Republican army, in contrast to a minute number who, sometimes motivated by religious zeal, volunteered for the Nationalists. Among the former were many doctors and nurses, who often served with the International Brigades or with the ambulance units raised by the Spanish Medical Aid Committee or with the Republican army<sup>8–10</sup>. There was therefore no shortage of original papers, editorials, letters and news items sympathetic to the loyalists or written from a Republican perspective in the British journals. During 1936 to 1939, the *British Medical Journal* and *The Lancet* together carried some 56 such items, but only published 5 written from a Nationalist perspective and 7 which were neutral.

Although Germany and Italy lent massive support to Franco in terms of matériel and manpower, the German medical officers confined themselves to the treatment of their own nationals—probably because of the reluctance of the military junta to admit foreign medical workers<sup>8</sup>. There is an astonishing silence concerning the war in the principal German journal, *Deutsche Medizinische Wochenschrift*. Several memoirs indicate that medical practice in the Nationalist forces was very similar to that on the government side<sup>11,12</sup>, but the following account of some of the advances in medical practice emanating from the war relates almost entirely to the Republican side. This is not simply because of bias in the source of publication. In addition, Republicans experienced the first massive aerial bombardment of civilian populations; furthermore, Barcelona and Madrid, the two centres with the strongest traditions of scientific achievement in the country, remained in government hands until the closing stages of the war.

The four main areas in which medical science advanced during the Spanish Civil War are the treatment of wounds and injuries, the development of blood banks, medical diseases (especially in relation to malnutrition), and the organization of medical support to the armed forces.

## INJURIES AND FRACTURES

The management of serious injuries is inescapably associated with the name of Josep Trueta Raspall, who at the outbreak of the war had just been appointed professor and head of a department of surgery at the Hospital de la Santa Creu i Sant Pau in Barcelona. In March 1938, Italian aircraft based in Mallorca bombed Barcelona every two hours for three days, and Trueta's hospital received 2200 casualties during this period; a single bombardment brought 300 casualties to another hospital in the space of fifteen minutes. Compound fractures of the long bones had previously been associated with appalling rates of gas gangrene, amputation and death. There were four main principles of the method devised by Trueta for their management.

- Prompt surgery: if at all possible, surgery should be performed within eight hours, so the organization of transport to surgical centres was vital. The surgery consisted of *débridement*, with bold excision of all dead, dying, contaminated, or damaged subcutaneous tissue and muscle but conservation of skin and bone where possible. The wound was exposed widely and left unsutured
- Cleansing the wound: this was done with soap and water and a nailbrush, a little tincture of iodine being applied to the skin. Although the war coincided with the introduction of sulphonamides, Trueta seems to have used sulphanilamide in only a minority of cases. These agents, he said, were never a substitute for good surgery
- Packing of wounds with dry, sterile gauze, and provision of drainage
- Reduction of fractures and immobilization in a plaster cast until union occurred. The cast was changed only if it became wet and soft or smelly (because of the smell, the patients were generally nursed on open balconies). Although it was only one of the planks of his 'method', the enclosure of the limb in plaster was the feature which attracted all the publicity.

The outcome in 1073 patients—only six deaths and 976 'good results' in terms of limb conservation and function—was a dramatic improvement on any previous series<sup>13</sup>. This was subsequently the basis of Trueta's books *The Treatment of War Wounds and Fractures* and *Principles and Practice of War Surgery*. These generated considerable controversy including a question mark over the originality of his work. Earlier authors, however, had concentrated far more on the use of plaster than on *débridement*, had used the technique more for chronic osteomyelitis than for fractures, and had never achieved comparable results. His work was to revolutionize orthopaedic practice, and saved countless limbs and lives in the ensuing global conflict<sup>14</sup>.

With the fall of Catalonia in 1939, Trueta made the hazardous journey over the Pyrenees, and was lured to the UK from Perpignan for a 'quick visit' to advise on air-raid precautions. One of his first speaking engagements was at the Royal Society of Medicine on 14 July 1939 (in French). His visit lasted 28 years, 10 of them as professor of orthopaedic surgery in Oxford, until his return to Barcelona in 1967. His memoirs convey a flavour of medical life in his beleaguered city<sup>15</sup>.

## BLOOD TRANSFUSION

Advances in blood transfusion have attracted less attention than those in traumatology, but are of no less importance. They too emerged from the bombing of Barcelona and Madrid and the fighting around Madrid and elsewhere. The Canadian communist surgeon Norman Bethune and the Reading general practitioner Reginald Saxton both did heroic work in making sure that blood was available for urgent use in Republican front-line hospitals and in administering it. But it was Trueta's fellow Catalan, Frederico Durán Jordá, who became seized of the crucial importance of large scale blood supplies from the outset of hostilities, and by the summer of 1938 he was in charge of a fine service in Barcelona with a list of some 14 000 donors, a figure which more than doubled by the end of the war. A total of some 9000 litres was collected during the course of the war, and the donors received certificates entitling them to extra food. Durán was able to test for syphilis and malaria, and even acquired an X-ray apparatus to avoid using people with tuberculosis as donors. *The Lancet* in 1939 drew attention to the 'magnificent blood transfusion centres in Republican Spain . . . clearly a great advance on any system that has been advocated in this country'<sup>16</sup>. Durán's technique laid particular emphasis on an ampoule which he had designed to avoid a blood-air interface and thus to minimize the haemolysis due to the shaking which was unavoidable during transit<sup>17</sup>.

Like Trueta and innumerable others, Durán joined the 'Catalan diaspora' and moved to the UK to help organize the London transfusion centre. He then joined the staff of Ancoats Hospital as a laboratory technician: refugee doctors were received by the UK with the same cordiality in 1939 as they are in 2002. He later became a greatly loved and respected pathologist, and died in 1957 aged 52 of a blood dyscrasia.

## MEDICAL DISORDERS

Spain was at the time by no means in the forefront of the developed nations, and malaria seems to have been the main medical condition leading to admission to at least one front-line hospital<sup>5</sup>. Nevertheless, there seem to have been surprisingly few major outbreaks of disease until late in the

war. The 4000 Basque children who disembarked in Southampton in 1937 as refugees from the insurgents were remarkably free from malnutrition or disease other than body lice<sup>18</sup>. But after the fall of Barcelona, the health of the population of Catalonia was dire, with widespread nutritional deficiencies. By this time, the suffering was almost equally severe in Madrid, with 300–400 deaths from starvation daily. Useful studies were conducted in over 3000 cases of nutritional deficiency by Grande Covián in Madrid during 1937–39<sup>19,20</sup>. He noted that nicotinic acid was very effective for the cerebral manifestations of pellagra, and that the paraesthesia-causalgia syndrome caused by thiamine deficiency (later to be termed ‘burning feet’ by European prisoners of the Japanese during the Second World War) was very common. He also recorded the paraplegic condition known as lathyrism, which affected impoverished families who subsisted on gruel prepared from flour derived from peas of the genus *Lathyrus*. Scurvy never became prevalent because of the availability of oranges.

As already noted, the first antimicrobial agents, the sulphonamides, became available during this conflict. *The Lancet* noted that the head of Republican surgery, d’Harcourt, had used sulphanilamide with success in a small series of cases of septicaemia secondary to wounds for which nothing further could be done in the way of surgical treatment<sup>21,22</sup>. The randomized controlled trial would not evolve for another ten years.

The former professor of psychiatry in Barcelona, E Mira, gave a lecture in the psychology laboratory in Cambridge in 1939 in which he described some fairly brutal treatments for ‘hysterical fits with a selfish purpose’<sup>23</sup>. But his approach compared favourably in humanity with that of some British military psychiatrists during the First World War and seems to have been mirrored by Nationalist army psychiatrists<sup>24</sup>.

### ORGANIZATION OF MILITARY MEDICAL SERVICES

Similar patterns seem to have developed on the two sides, with evacuation taking place from the battalion first-aid posts, via the divisional or regimental aid posts to the front-line hospitals known as *hospitales de sangre*; these were the precursors of the mobile army surgical hospitals later used by the US Army in Korea, and they undertook a great deal of emergency surgery as well as triage<sup>5–7</sup>. Patients not taken to theatre, and many of those recovering afterwards, were evacuated to the rearguard hospital, which was either a newly established military hospital or a preexisting civilian establishment. It was claimed by a surgeon who worked on both sides that the Republicans had the better surgeons but the Nationalists organized transport more effectively so that

the wounded arrived in better condition—also, that the Nationalists deployed field vascular surgical teams to secure haemostasis, with the same objective<sup>25</sup>. The Spanish army in Morocco also seems to have pioneered the use of air ambulances during the 1920s, subsequently used by both sides during the Civil War and then by Allied and German airforces during the Second World War.

### CONCLUSION

Medical activity flourished in the comparatively liberal atmosphere of the great Republican cities during the Civil War. Nationalist medicine, on the other hand, made very little impact in terms of scientific publications, despite the fact that the insurgents ultimately prevailed. Traumatology and transfusion medicine were beneficiaries of the suffering inflicted by Nationalist bombers. The Nationalist zone encompassed the major food-producing regions of the country, so that the government-held regions were more vulnerable to starvation, which facilitated nutritional studies. Finally, Madrid and Barcelona were firmly entrenched as the leading centres of Spanish scientific endeavour.

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