

Medicalising dead bodies: the First Indochina War (1946–54)

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Abstract

This article shows how the medicalisation of death in wartime can be seen as integral to a broader medicalisation of war that it both stems from and sustains. More specifically, it highlights the pivotal role of post-mortem examinations – which were widely performed in French military hospitals during the First Indochina War – in advancing clinical knowledge and monitoring the quality of care, as the only way of providing diagnostic certainty. Pathology procedures also contributed to the introduction of therapeutic innovations, which were largely the result of ongoing interactions both within the armed forces medical service and with the wider military and civilian French and international medical community.

Key words: autopsies, First Indochina War, dead bodies, medical knowledge, innovation

Introduction

Based on an examination of the archives of the French armed forces medical service covering the period of the First Indochina War (1946–54), this article looks at how military physicians made medical use of the dead bodies available to them in military hospitals. This involved performing a series of post-mortem examinations and procedures to investigate the causes of death with a view to furthering knowledge, contributing to experimental clinical research or removing tissue to be used for therapeutic purposes. More broadly, this article also examines how, in wartime, the dead bodies of military personnel are placed in a liminal state (between the moment of death and the end of the funerary process) that gives medicine, as anthropologist David Le Breton puts it, 'an opportunity to intervene ... either to remove organs or tissue within the legal framework, or to perform an autopsy for medical or forensic purposes'.¹ The medicalisation of war.² This article thus considers the way in which an initial dynamic based on the 'growing role of physicians

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in dying',³ which emerged in the nineteenth century, converged with a later trend represented by the 'gradual extension of medical authority within the armed forces',⁴ associated with the desire of the latter 'to utilize medicine and medical knowledge [for their own benefit]', as historian Mark Harrison has put it.⁵ Dead bodies have long been used as material for enabling medical advances.⁶ In relation to the contemporary period, historian Anne Carol describes 'physicians [who] set out to conquer death' and how 'the clinical anatomy approach made them more at ease with it, and even instrumentalised it in knowledge construction'.⁷ In the nineteenth century, the examination of dead bodies and other anatomical specimens thus became established as an essential practice in furthering medical knowledge, building on the anatomical studies of the early modern period.⁸ From the eighteenth century onwards, French military medicine and its practitioners shared these methods of examining the human remains available to them in their hospitals and medical schools, but also in the field.⁹

During the First Indochina War, physicians in the French armed forces medical service operated in line with this utilitarian approach to dead bodies, viewed as 'material for science'.¹⁰ More broadly, with the medical facilities on the ground they benefited from 'large hospitals inherited from the colonial period, [along with] specialist departments'.¹¹ In spite of limited equipment and technical challenges, the medical practice of these physicians incorporated the therapeutic innovations that had emerged from the Second World War (including advances in blood transfusion and the introduction of penicillin).¹² These medical advances played a leading role in innovations in protected evacuation by air and in front-line medicine,¹³ and made a significant contribution to the breakthroughs in biomedicine in the post-war period.¹⁴ In Indochina, the medical challenges were huge, given the scale of troop losses, either in fierce fighting during combat, during counter-insurgency operations or as a result of the many infectious diseases to which they were exposed.¹⁵ The number of dead bodies handled by the medical service was thus considerable, estimated at a maximum total of '120,000 men across the TFEO (Troupes Françaises d'Extrême-Orient) and their allies'. For soldiers from mainland France alone, the official statistics for 1955 reported 20,700 deaths.¹⁶ This article draws on an extremely heterogeneous corpus of archives, in particular the archives of the French armed forces medical service covering the First Indochina War and medical matters, along with private collections held in these archives.¹⁷

The autopsy: the crux of post-mortem investigations

Medical autopsies: a routine practice

The main purpose of a medical, or clinical, autopsy is 'to produce a detailed assessment of all diseases or injuries present at the time of death'.¹⁸ Unlike anatomical dissections, which are carried out for medical research purposes, or forensic autopsies, which are carried out within a legal framework,¹⁹ medical autopsies are designed 'to confirm a diagnosis post-mortem, and to advance knowledge'.²⁰ In wartime, autopsy remains a standard practice as part of a clinical investigation into the medical causes of death.²¹ During the First Indochina War, for example, autopsies



'highlighted a number of conditions common in the Far East ... which, although not the main cause of death, caused ... complications ... that resulted in death, directly or indirectly'.²² In 1952, for example, a total of ninety-five autopsies were recorded in the morgue register of the Lanessan Hospital in Hanoi.²³ They were performed by physicians as part of their general clinical activities, typically in surgical departments.

Only a few autopsies were performed at the front in primary evacuation hospitals (*hôpitaux d'évacuation primaire* or HOE¹). Limited numbers of dead bodies were thus handled in this way, mainly of soldiers who had died following combat operations, and in very basic conditions.²⁴ They were performed by the unit physician, and enabled the documentation in situ of the damage caused by war injuries. For example, the post-mortem examination of the body of a soldier in the Second REI (Régiment Étranger d'Infanterie), who died on the operating table on 14 April 1954 at Dien Bien Phu following a 'severe mine blast', found a malleolar fracture combined with a fracture of the superior pubic ramus accompanied by 'abdominal compartment syndrome indicative of a two-stage splenic rupture' resulting in death.²⁵

Most of the autopsies performed in Indochina were performed in hospitals in the rear, which had significant levels of operative mortality. Between 1947 and 1950, the average mortality rate for patients undergoing surgery at the Costes military hospital in Saigon was 1.16 per cent.²⁶ The case of a soldier whose left hand was initially blown off by a grenade explosion at Ben Day on 16 May 1951 is representative of the indications for medical autopsies, and the conditions in which they were performed.²⁷ After receiving first aid in situ, he was evacuated to the Vinh Long Infirmary, then hospitalised at Costes before being transferred to the Le Flem Hospital in Saigon, where seriously wounded soldiers were treated. After having his left arm amputated, he died on 5 July 1951, a few hours after a second surgical procedure. Eighteen hours after the time of death, an autopsy and pathology examinations were performed.²⁸ These found 'highly congested and very foamy (oedematous) lungs, a yellowed liver, and enlarged, congested black kidneys'. The physician concluded that the cause of death was pulmonary oedema.

France was not the only country to routinely practise wartime autopsies. During the same period, medical teams at the US Army Medical Corps's Forty-Sixth Surgical Hospital on the Eastern Korean front were carrying out similar investigations on the bodies of soldiers 'wounded in combat ... to emphasize the problems encountered in treating the combat casualty'.²⁹ Findings from field observations were regularly shared with the wider medical community in Indochina, both military and civilian. This included via presentations at joint medical and surgical meetings held in Saigon-Cholon, which usually consisted of describing a clinical case and sharing the main observations. The autopsy report was the centrepiece of these presentations. On 10 March 1950, for example, Physician Lieutenant-Colonel Soulage and Physician Commandant Miossec presented the findings of an autopsy on a 'twenty-four-year-old subject attached to the Garde Républicaine de Marche', who had been diagnosed prior to death with haemorrhagic amoebic typhlitis.³⁰ Examination of the body revealed 'a huge caecal amoeboma,

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membranous adhesions, two necrotic ulcerations of the caecal mucosa, the site of the fatal haemorrhage, and jaundice of the skin and viscera'. Based on these observations, the physicians declared that the 'primary interest of the case lies in the simultaneous development of degenerative icterogenic hepatitis with blood dyscrasia and hypertrophic amoebic typhlitis'. The post-mortem diagnosis, shared and discussed with the colleagues present, was intended to help them anticipate potential complications in future patient care. These case reviews also provided an opportunity to present the results of research carried out as part of experimental clinical studies.

The use of autopsies in experimental clinical research

Understanding the anatomical and physiological consequences of traumatic/ haemorrhagic shock was of the utmost importance for physicians in the medical service,³¹ who were particularly focused on improving intensive care strategies. In the early 1950s, military physicians Henri Laborit and Pierre Huguenard proposed a method of treating shock victims based on the principle of artificial hibernation.³² This involved putting the patient in a slowed living state, reducing their cellular requirements by using powerful drugs. In the spring of 1953, Laborit and Huguenard travelled to Indochina, where they gave a series of lectures to medical officers to promote their initial findings.³³ In France and Indochina, their method created a stir within the military medical community by 'bringing together new questions revolutionising physiology, pathophysiology, pharmacodynamics and therapeutics'.³⁴ In the field, health unit physicians thus tested out the method before considering a wider roll-out. A large-scale trial was conducted, mainly overseen by Physician Colonel Claude Chippaux. Autopsies were performed on the patients enrolled in this trial in order to gain a better understanding of the physiological mechanisms involved, and to evaluate the results. At the Cat Bi air base, for example, Physician Captain Jean Vittori induced hibernation in blast victims 'following Chippaux's instructions' and performed post-mortem examinations that revealed 'wet lungs [... and ...] nothing in the heart'.³⁵ Vittori was, however, concerned about the fact that 'hibernating drugs could, like atropine, thicken secretions', and suggested that 'routine endobronchial aspiration' might be necessary.

At the Lanessan Hospital in Hanoi, Chippaux and his colleagues used the artificial hibernation technique on 150 wounded soldiers, and performed 'autopsies ... as often as possible'.³⁶ They observed that 'intracardiac thromboses were commonly found in the right heart [in patients who had died after induction of hibernation]', and found that while 'these thromboses were found in a parallel series of casualties with shock in whom hibernation had not been induced, [in such cases they were] less frequently seen on the right side'. The autopsies carried out in situ confirmed that in patients in whom hibernation had been induced, 'clots were more often found in the right side of the heart'.³⁷ This was significant, and prompted Chippaux to consult Professor Jacques Delarue, a renowned anatomical pathologist and head of the medical department at the Paul Brousse Hospital in Paris, to whom he sent slides prepared by the Pasteur Institute in Hanoi from organs removed from



patients who had died after induction of hibernation.³⁸ The initial results were published in June 1954.³⁹ Based on clinical observations, combined with post-mortem findings, it was concluded that 'the indications [for this technique] are very limited [since it] can only be employed in a hospital setting [...] and requires constant monitoring for over forty-eight hours'.⁴⁰ Use of the technique was understandably shelved by the armed forces medical service directorate on the basis of expert assessment derived from extensive autopsies and serial analysis of the findings. This clinical research was conducted within the framework of a scientific approach that complied with the standards of contemporary medical science. The gradual standardisation of techniques and practices for investigating the causes of death took place within a set of norms and laws that structured the treatment of human remains in the hospital setting, while helping to enrich the production of current medical knowledge, in accordance with the scientificity and ethical criteria of biomedical research.

Best practice and the legal framework

The post-mortem examinations performed by the physicians followed very detailed protocols, based on knowledge from international medical science and involving the entire medical chain.⁴¹ First, observations were made describing 'the state of the corpse, its mucous membranes and its organs'.⁴² The following organs were then removed: the stomach, intestines and their contents, liver, kidneys, spleen, brain, 20 to 200g of blood, and the urine remaining in the bladder.⁴³ The way in which these were stored was important: organs and liquids had to be kept separate and placed in different containers 'dry, without the addition of any antiseptics or fixatives'. The physician removing the organs also had to ensure that 'samples of the liver, kidney and lungs [were] sent in fixative for anatomical pathology examination'. Compliance with these procedures was designed to ensure that anatomical specimens could be traced and that the findings were robust. In the field, nearest the fighting, procedures did not always comply with best practice in this area, with 'many examination requests ... continuing to reach the laboratory on undated, unsigned forms, with no information on origin'.⁴⁴ The Forces Terrestres d'Extrême-Orient (FTEO) medical service directorate observed that physicians were producing 'incomplete autopsy protocols that are therefore of little use', and regularly reminded practitioners that 'in order to be valid, an autopsy must be complete with abdomen and chest examination and craniectomy'.⁴⁵

In addition to the technical and medical framework implemented under the supervision of the armed forces medical service, medical autopsies in Indochina were performed in accordance with the contemporary French legal and regulatory framework. The latter applied to both the military and civilian spheres. The French government decree of 20 October 1947 stipulated that 'in hospitals included on a list drawn up by the Ministry of Health, if the physician in charge of the department decems it to be in the scientific or therapeutic interest, an autopsy may be performed and samples taken immediately, even without family approval'.⁴⁶ The power of physicians in this area was both far reaching and discretionary. This must be

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understood in the broader historical context of the effects of the emergence and development of clinical and laboratory medicine since the dual revolution instigated by physiologist Claude Bernard and biologist Louis Pasteur in the late nineteenth century,⁴⁷ which had provided the foundations for the gradual rise in matters concerning the 'governance of dead bodies'.⁴⁸

Death in the service of life: homografts

New technical possibilities vs a limited legal framework

Since the late nineteenth century, innovations in tissue grafts and organ transplantation had been emerging from the cross-fertilisation between laboratory research and clinical medicine.⁴⁹ These innovations reflected a high level of scientific and technical expertise, and were based on the advanced specialisation of practitioners.⁵⁰ The use of soft tissue from dead bodies in general surgery was first documented in 1907, in a case involving transplantation of parathyroid glands.⁵¹ In reconstructive surgery, the first bone grafts date back to the pioneering work of Louis Ollier in the second half of the nineteenth century.⁵² Bone homografts, which involve the use of a bone fragment taken from a recently deceased person,⁵³ were therefore an established technique for treating traumatic injuries, and had developed on the back of the advances made in wartime orthopaedic surgery during the Second World War.⁵⁴

In France, the legal framework for the use of human tissue for therapeutic purposes had not yet been defined when the war in Indochina broke out: 'these are new methods that the laws in force could not have anticipated⁵⁵ These methods also benefited only very indirectly from the provisions of the Law of 21 July 1952 on 'the therapeutic use of human blood, its plasma and their derivatives', Article 1 of which permitted such use only 'under medical supervision and strictly for therapeutic medical and surgical purposes⁵⁶ During the debate in the French parliament preceding the adoption of the law, the rapporteur of the bill - the député Maurice Fredet – emphasised the specific nature of human blood, 'which cannot be considered a medicine [in the same way] as a cornea or a fragment of bone or ovary'.⁵⁷ He distinguished the status of tissue grafts from that of blood products, arguing that the former should be seen as medicines. Human tissue was therefore used in medicine under the provisions of the laws of 14 June 1934 (on therapeutic serums) and of 11 September 1941 (on medicines), which pertained solely to autografts (from one part of the body to another) and made no mention of inter-human tissue or bone grafts.⁵⁸ The general purpose of these provisions was 'to avoid holding back the development of transplantation techniques'.⁵⁹ The issue of consent was initially tackled in relation to corneal transplants by the Law of 7 July 1949, which set aside the presumption of consent for the first time by stipulating that 'anatomical specimens from human beings ... may be removed immediately and at the place of death whenever the deceased has, in his or her will, bequeathed his or her eyes to a public institution or to a private organisation that performs or facilitates this operation'.60



Beyond the availability of grafts, solving the – primarily technical – problems posed by tissue storage was a major prerequisite for widespread use of grafts. Since the end of the Second World War, the United States had developed a bone and tissue bank at the National Naval Medical Center in Bethesda, whose work and guidelines served as a model and were internationally recognised.⁶¹ This research was particularly driven by the medical needs of the Korean War, which created 'a pressing need for experimental and clinical investigation of homograft techniques in surgery⁶² In light of these developments, the French armed forces medical service understandably decided to equip the reconstructive surgery department at the Costes Hospital with equipment 'purchased in the United States'.⁶³ This consisted of a refrigeration unit, acquired in July 1948, that made it possible to 'store bones at a low temperature [then] create a bone bank'.⁶⁴ Cold was in fact 'the prerequisite for the existence of a bone bank'.⁶⁵ The system had only limited storage capacity, with Chippaux referring to it somewhat prosaically as 'an ice-cream maker'.⁶⁶ It meant that surgeons could now 'build up a stockpile of homografts [and thus], on request, [have] access to the appropriate fragment of tissue to save a limb'.⁶⁷ In October 1950, André Carayon and Claude Chippaux performed 'the first cranioplasty using a fragment of cranial vault taken from a dead body preserved in a bone bank'.⁶⁸ After removal (two hours after death), the bone fragment was 'placed in a sterilised drum and stored for 48 hours at -30°C in an ice-cream maker'. In 1953-54, the Roques Hospital (in Go Vap) also set up a 'bone bank' consisting of 'preserved bones taken from fresh cadavers who have died in accidents', which had the benefit of 'conveniently providing spongy bone tissue that can be used to fill a gap left as a result of the challenges sometimes presented by mechanical assembly'.⁶⁹

Significant developments in tissue preservation also took place during this period. In addition to simple freezing, experiments were conducted - initially in the United States - to develop methods based on freeze-drying.⁷⁰ In France, research was conducted at the Percy military hospital (Paris-Clamart).⁷¹ In 1952, with support from the Armed Forces Intensive Care and Blood Transfusion Centre, which had already been producing freeze-dried plasma for several years, the Percy team published an article on 'a new method of preserving bone grafts by vacuumdrying from frozen (lyophilisation)⁷² With the caveat that their initial findings required confirmation, they declared that the method was a promising one, since it 'would be easy to roll out thanks to the facilities in transfusion centres, which are equipped to prepare dry plasma ... surgeons [could thus] easily build up supplies [and] even have a permanent stock to cover all their needs'. A study published in 1955 even concluded that 'the method must be considered as one of necessity, a practical method designed to effectively make up for the impossibilities of autografting⁷³ As it was still not sufficiently robust, this method was not used in Indochina, but its development benefited from feedback from physicians, who highlighted the importance of increasing the service's capacity to preserve grafts taken from dead bodies in the best possible conditions. In the reconstructive surgery department at the Roques Hospital, for example, surgeons felt that 'preserved homografts offer a sufficient chance of success⁷⁴





Indications for homografts and surgical practice

In practice, there were few occasions on which grafts were used in emergency treatment, which consisted of 'minimal surgery' with the primary aim of stabilising the casualty so that he could be evacuated to the rear medical posts.⁷⁵ During the battle of Na San in autumn 1952, for example, French military physicians 'performed the first artery grafts' under suboptimal conditions, since, in the absence of refrigerators, the tissue had to be preserved in a liquid composed of saline, heparin and an antibiotic, a method that was soon abandoned.⁷⁶ This emergency vascular surgery was intended to limit the number of amputations.

Bone grafting, on the other hand, was a common procedure in reconstructive surgery in Indochina.⁷⁷ Under ideal circumstances, the patient would receive subsequent treatment in an operating theatre some time after the initial trauma, preferably in a specialist centre, with osteosynthesis only indicated in cases where the fracture could not be reduced. Grafting was a last resort, and in such cases the graft had to be 'long and thick'.⁷⁸ At the Costes Hospital, for example, fifteen homografts were performed between 1947 and 1950 in maxillofacial surgery alone.⁷⁹ In 1954, Physician Commandant Bernard and Physician Colonel Chippaux performed eleven mandibular homografts, with a reported success rate of 91 per cent.⁸⁰ In the Costes orthopaedic department, twenty-two bone grafts were performed in limb surgery in 1950, including 'one homograft'.⁸¹ In Go Vap, surgeons at the Roques Hospital performed 'arthrodesis ... using bones from the bank ... with normal postoperative course'.⁸²

The results of these surgical graft procedures were regularly presented to the other physicians in the expeditionary corps at the Saigon-Cholon joint medical and surgical meetings held in the Costes Hospital lecture theatre.⁸³ After the war, Chippaux also gave an end-of-course lecture at the École du Pharo (part of the Armed Forces Institute for Tropical Medicine) in Marseille on 28 June 1956, focusing specifically on the various different types of grafts (including skin, vessels, placenta and bone) that had been performed in Indochina. The results obtained during the war were also published in the scientific literature.⁸⁴ More broadly, at the end of the conflict, the medical service directorate considered advances to have been made in 'tissue therapy': 'A year after they entered widespread use in France ... bone grafts were attempted in Indochina in the Costes Hospital reconstructive surgery department. The grafts were placed in aseptic jars and stored in refrigerators at a temperature of -15 to -30° C. The results were immediately satisfactory.'⁸⁵

Conclusion

During the First Indochina War, the French armed forces medical service and its physicians were involved in a wide range of practices relating to the medicalisation of dead bodies. These primarily consisted of investigating the causes of death by conducting a series of post-mortem clinical, anatomical pathology and laboratory examinations. Autopsies and pathology investigations were performed on a large number of soldiers who died in military hospitals. These examinations were also



carried out for the purposes of experimental clinical research, as for example in work on the efficacy of artificial hibernation. They were conducted within a medico-technical framework circumscribed by detailed protocols drawn up by the medical service authorities. Physicians operated within a very loose legal and ethical framework that gave them a great deal of freedom, which they deemed to be largely justified by the objective of advancing medical science. As such, the dead bodies of soldiers were seen as therapeutic resources that could be used to develop or validate new medical techniques, in particular tissue grafts. The routine use of homografts during the war, and the satisfactory results obtained, thus both benefited from and contributed to progress in wartime reconstructive surgery.

This article has shown how the medicalisation of death in wartime can be seen as integral to a broader medicalisation of war that it both stems from and sustains. More specifically, it highlights the pivotal role of post-mortem examinations which were widely performed in French military hospitals during the First Indochina War - in advancing clinical knowledge and monitoring the quality of care, as the only way of providing diagnostic certainty. Pathology procedures also contributed to the introduction of new therapeutic techniques, by providing practitioners with human tissues that were then used in a series of technical and medical innovations. Military physicians in Indochina operated within a French regulatory framework that permitted them to use the dead bodies available to them in their hospitals, with no real restrictions on the tissues that could be removed. Various innovations were introduced as a result of ongoing interactions within the armed forces medical service itself and with the broader military and civilian French and international medical community. The physicians operating in the Indochinese theatre were thus able to respond to the call to action sent out by French anatomical pathologist Xavier Bichat to his colleagues a century and a half earlier: 'Open a few bodies, this obscurity will soon disappear, which observation alone would never have been able to have dissipated.'86

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Notes

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1 D. Le Breton, 'Liminalités du cadavre: quelques réflexions anthropologiques', *Corps*, 11 (2013), 35–44. Translator's note: Our translation from the French.

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- 24 Ibid.
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- 26 SHD T IMTSSA 181, Activity report for the Physician Commandant Costes Hospital, 1 July 1947–1 July 1950, graph showing activity by surgical department.
- 27 Service Historique de la Défense-Vincennes (French Military Archives Vincennes), series GR 10H, box 2021 [SHD V GR 10H 2021], Medical and surgical evacuation and hospitalisation report for soldier XXX attached to the Unité mobile pour la défense des chrétiens (UMDC) corps.
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