

The Attempt on the Life of Reinhard Heydrich, Architect of the “Final Solution”: A Review of his Treatment and Autopsy

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ABSTRACT: Reinhard Heydrich, architect of the “Final solution of the Jewish problem,” had a meteoric career in the SS. He organized the Wannsee Conference and created the SS killing squads. Under his leadership as Acting Reich Protector of Bohemia and Moravia, the suppression of the Czech community was brutal. An attempt on his life in Prague was unsuccessful but it left him severely injured and he died eight days later. Reviewing the available information on his hospital treatment and the autopsy report, it is suggested that Heydrich received substandard medical treatment, quite likely a result of political interference from rival members of the SS hierarchy.

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“... the demands of society are put above every individual human being ... and this individual ... is completely used in the interest of that society”

Dr. K. Brandt, Nuremberg 1946 [1]

In 1938, Ernst vom Rath, a diplomat at the German Embassy in Paris, was shot by a protesting Jewish adolescent. The medical attention that he received was supervised by Hitler's private physician (*Begleitarzt*), Karl Brandt. The required treatment was withheld for political reasons. Indeed, his death was politicized in Germany and used as an opportunity to launch a nationwide pogrom, known as *Kristallnacht* [2]. By acting in this way the leaders of the Third Reich sacrificed vom Rath, in accordance with the principle that Dr. Brandt later cited at his trial in Nuremberg, using him “in the interest of [Nazi] society”

The present article reviews the surgical management of a much higher ranking officer of the Reich, SS Obergruppenführer Reinhard Heydrich (1904–42), who was attacked by partisans in Prague in 1942. The documented medical response to his injuries and the record of the autopsy reveal a number of parallels

with the Rath case and raise the possibility of similar political interference in his medical treatment.

At the time of his death Heydrich was an SS General and Acting Reich Protector of Bohemia and Moravia. He was one of the architects of the Third Reich's “Final Solution,” which was presented at the Wannsee Conference in January 1942. He also orchestrated the *Einsatzgruppen*, paramilitary death squads [3].

Heydrich was “*young and intelligent, ... the brutal, despotic and merciless master of the Nazi Police*” [4]. As head of the SS Main Security Office, he was fanatical in pursuing the enemies of the Reich, and was described as “*one of the most uncompromising executors of Hitler's dystopian fantasies*” [4].

Born in a strict, nationalistic and anti-Semitic family, he was a mediocre student but gifted musician, affectionate (if not faithful) toward his family. The rumors of “Jewish blood” in his ancestry had long been discarded. Heydrich's rise in the Nazi hierarchy culminated with his appointment in September 1941 as Acting Protector of the recently occupied Bohemian/Moravian lands, an area with an essential military industry but also harboring a strong anti-Nazi resistance. Heydrich had absolute power there, symbolized by the fact that his office was in the Imperial Palace in Prague although his family lived in a country castle. As a result of his fierce repression of any opposition, with thousands of incarcerations and executions, within a relatively short time stability reigned in the Protectorate.

The exiled Czech government made a decision to assassinate Heydrich. On 27 May 1942, a poorly executed attack severely wounded but did not kill him. While traveling in his open car, Heydrich was injured on the left side of the chest by a grenade splinter. A passing lorry transported him to the nearest medical facility, Bulovka Hospital. Rebuilt in 1931, this hospital had become one of the most modern institutions in Europe. The head of its surgical department, Prof. Jan Levit, an experienced surgeon, was dismissed following the “Cancellation of Accreditations of Jewish Doctors” order of 17 March 1939 [Figure 1].

When Heydrich arrived at the hospital, Drs. Puhala, Slanina and the surgeon Snajder were on duty. Dr. Slanina conducted the first examination: “*With a forceps and a few swabs, I tried*

Figure 1. Dr. Jan Levit



Figure 2. Death mask of Reinhardt Heydrich



to see the depth of the wound. I found pneumothorax, contusion of the lung and that the metal splinter, some 3 cm large, also transported pieces of upholstery through the diaphragm into his abdomen, damaging the spleen and the tail of the pancreas” [5]

The first step was to try to stop the hemorrhage by local pressure while Heydrich was lying on a table in the hospital director’s office. A photograph of the scene shows several figures standing around the table in a septic environment: some in street attire, some with no head or facial cover; their hands, whether gloved or not, are not visible. The patient was then transferred to the operating room and surgery was performed by thoracic surgeon Walter Dick and abdominal surgeon J. Hohlbaum, both experienced German practitioners. Heydrich was anesthetized with a closed system, high pressure mask, and no indication of intubation. The chest was closed around a rubber draining Petzer tube connected to a suction device. The Czech personnel were prohibited from entering the operating room or the floor where Heydrich was taken after his operation [6].

The abdominal surgeon sutured the diaphragm (a “four inch” tear), removed the splintered spleen, sutured the tail of the pancreas, and inserted a drain in the left corner of the abdomen. During the course of treatment Heydrich received several blood transfusions as well as anti-gangrene and anti-tetanus injections. Within two days the patient was recovering well; there is no record that postoperative X-rays were performed.

From this point, SS chief Heinrich Himmler’s private physician, Dr. Karl Gebhardt, an orthopedic surgeon from Berlin, was in charge. Gebhardt bypassed all the other surgeons, preventing the use of sulphonamide (Prontosil®*) when Heydrich’s temperature rose, and forbidding the transfer of the patient for re-operation at any other hospital [6]. The omission of treatment with Prontosil was particularly noteworthy since “the SS and Hitler insisted on believing that

sulphonamides were a ‘miracle drug’ (Wundermittel) which could prevent all infections if only correctly administered” [1]. In the postoperative days, a gradual fever developed. On the seventh day the patient was able to sit up in bed to eat, but he collapsed suddenly and remained in a coma until the early hours of 4 June when he died. An autopsy was performed within four hours of his death, which examined only those parts of his body that underwent surgery, excluding the head and legs. The full text of the autopsy report is analyzed below.

THE AUTOPSY (PATOLOGISCH-ANATOMISCHER BEFUND) [7]

Heydrich was a tall, athletic figure and active in sports; he was blond and had blue eyes and a long aquiline nose [Figure 2]. It is surprising, for a high ranking SS officer who should have been medically assessed on a regular basis, that an “enlargement of the left ventricle of his heart to 20 mm (2 cm) in width was measured on autopsy, in contrast to 4 mm of the right ventricle”, indicating a longstanding pathology (“Die Wand der gut kontrahierten rechten Kammer etwa 4-5 mm dick; die Wand der linken Kammer ebenfalls gut kontrahiert, fast 2 cm dick”).

Also, several arteriosclerotic deposits were found, scattered in the branches of the coronary arteries, with a somewhat greater focus in the circumflex branch (“Die Kranzschlagadern zart nur ganz vereinzelt, hirsekorngrosse, gelb Verfettungsherde in der Intima aufweisend; ein etwas grösserer Herd in Ramus circumflexus der linken Kranzschlagader”).

In the chest cavity several collections of pus-like fluid were found in the pleural angles and in the mediastinum. There was atelectasis of the left lower lung, a pericardial collection of about 100 ml, but more importantly, “on the pleural side of the diaphragm a fibrin encapsulated frill of hair was found” (“An der pleuralen Oberfläche des Zwerchfells einzelne krause, in Fibrin gehlute Haare”). Blood thrombi were found in the pulmonary artery, surrounded by conglomerates of fat droplets (“In der rechten Herzkammer sowie im Hauptstamm und in den Hauptsten der Arteria pulmonalis, reichlich Speckhaut und Cruorgerinnsel”). The source of this thrombosis was found in the pelvic venous plexus.

“In the esophagus, a sour odor, apparently from vomited stomach contents.” (“In der Speiseröhre suerlich riechender, offenbar aus dem Magen erbrochener Inhalt). The bronchi were “filled with foamy mucous” (“Die Bronchen von schaumigem Schleim erfüllt”).

- **Bacteriology results (Bacteriologischer Befund):** The tubes inserted into the patient’s chest and abdomen drained pus, which grew non-hemolytic Streptococcus, Staphylococcus and bacteria coli and proteus.
- **Histology (Histologischer Befund):** Histology of the liver and kidneys revealed inflammatory leukocytic infiltrations, which were also found in the myocardium together with

*The first commercially available antibacterial drug, developed in the 1930s by Bayer Laboratories of the IG Farben conglomerate

fragmented myofibrils. Necrotic fibers were noted in the diaphragm and thoracic muscles. Although mentioned in subsequent reports in the literature, there was no proof in the autopsy findings of anaerobic gangrene or of botulism.

THE MEDICAL REALITY IN 1942

A retrospective review of the medical treatment that Heydrich received must be conducted within the context of 1942 knowledge and experience. What was the standard of German medical science in the early 1940s? Indeed, most of the procedures in use today were available in 1942.

Scientific work in Germany during the inter-war period was of the highest academic standard, and the Kaiser Wilhelm Gesellschaft in Berlin was one of the world's leading scientific institutions. Many sections were headed by Nobel Laureates: Otto Warburg for medicine (who surprisingly was not arrested), Fritz Haber for chemistry (who escaped to England), and Albert Einstein for physics (who escaped to the United States).

Despite the decline in standards at this institution in the 1930s, it was largely responsible for the discovery of the first antimicrobial chemotherapeutic agent, sulphonamide, for which the German Gerhard Domagk was awarded the Nobel Prize in 1939. Although military technology had advanced during the Nazi period, pharmaceutical production was deficient. In contrast, the Allies had field hospital access to sulpham (later on even to penicillin) in 1942, but this was not the case in the Reich.

Blood transfusions were routine practice, in accordance with the discoveries of the two blood groups (ABO and Rhesus) by the Austrian émigré Karl (Hess) Landsteiner (Nobel Prize laureate in 1930) and Alexander Solomon Wiener, both in the Jewish Hospital in Brooklyn. Heparin, used for the prevention of venous thrombosis in immobile postoperative patients, was discovered in the 1920s by McLean and Howell in the U.S. Heparinization began to be used routinely in the USA in 1935 and in clinical practice in Stockholm in 1936 [8,9]. In 1942, in the Dachau concentration camp, experiments were conducted with a thrombotic agent and it is assumed that heparin would have been available as an antidote. The pathophysiology of embolism was discovered in Berlin by Rudolph Virchow in 1858. Embolectomy was developed experimentally in 1918 by the surgeon Friedrich Trendelenburg, and introduced in clinical practice in 1924 by his pupil Martin Kirchner in Königsberg [10,11]. "Many German clinics quickly adopted the emergency bedside Trendelenburg operation for physiologically compromised patients in whom PE [pulmonary embolism] was strongly suspected" [12]. Splenectomy was a centuries-old procedure in clinical practice.

The management of abdominal and chest wounds had been developed by German surgeons before World War I. A new approach to abdominal injuries was described in 1900 by

Boeckel [13] and by another German surgeon, Borchardt, in 1904 [14]. Both communications dealt with "gunshot wounds to the pancreas." The definitive treatment was finalized in a series of articles in the *Annals of Surgery* in 1905 [15-17]. The damaged pancreas required partial or total removal, with drainage to the exterior of fluid collecting in the retroperitoneal, lesser sac. There is no record of any drainage being inserted in that space in Heydrich's case.

THE CAUSE OF DEATH

The official autopsy report by pathologists Herwig Hamperl and Gunther Weyrich, both professors at Prague University, determined the cause of Heydrich's death to be "*septicaemia due to virulent Bacteria that led to parenchymatous intoxication of the liver, kidney and myocardium*" [7]. The management of Heydrich's care and the autopsy findings have been disputed. Among those who raised questions about the management was a French surgeon who asked: "could he have been saved?" [18]. Several reviews of this topic were published by historians [5,19-23], a neurosurgeon [6], a pathologist [24], and two anesthetists with obvious interest in intensive care [25]. These interpretations are interesting, but conflicting and inconsistent. To analyze each would not lead to a firmer conclusion. Instead, the present authors undertake a review of the original German autopsy report, translated by three linguists. Our interpretation of the autopsy report is presented here:

- **The cardiovascular system:** A preexistent, apparently unknown, hypertensive and atherosclerotic cardiovascular disease, with significant left ventricular hypertrophy, with a small amount of fluid in the pericardial sac. Although not sufficient for a cardiac tamponade, drainage of the pericardium would have improved the cardiac ejection. Inflammatory, myocardial damage was detected, possibly enhanced by the pre-existent arteriosclerosis.

The presence of thrombosis in the pulmonary artery (augmented by fat accumulation) would no doubt be the main cause of sudden collapse, resulting in cerebral anoxia and terminal coma. The source of fat emboli in a patient with no bony fracture other than a broken rib cannot be satisfactorily explained. It might be that an existent hyperlipidemia in the system aggregated around the blood clots in the pulmonary artery. The thrombosis was not identified; neither embolectomy nor the use of anticoagulants was attempted.

- **The respiratory system:** The bilateral pulmonary edema, pleural and mediastinal purulent collections, atelectasis of the left lower lobe, would all lead to respiratory insufficiency.
- **The digestive system:** The acidic food regurgitation into the esophagus (in a patient eating just a few days after major

abdominal surgery) led to aspiration and to a copious bronchial exudate reaction. No esophageal lavage or bronchial suction was performed.

- **Septicemia and multi-system failure:** Multiple coccal and bacterial cultures were obtained from the thorax and subphrenic space. Some of these would have been sensitive to sulpham. The histologically detected infiltrates in the liver, kidneys, and myocardium could be interpreted as signs of parenchymatous damage. The sources of the microbial invasion could have been hematogenic due to the initial septic intervention or the result of the retained foreign material. This material was a “frill of hair” from the car’s upholstery, made of animal (horse or swine) hair, and would have been detectable on postoperative X-rays.

It is our conclusion that the cause of death was pulmonary embolism, originating in the pelvic plexus (or in the unexamined lower limbs), due to pulmonary insufficiency and to a multi-system septic failure. Since the autopsy investigation did not examine the head, the possibility of anoxic brain damage cannot be excluded.

In legal terms, the medical approach of the German doctors provided substandard medical care to one of their highest officers. Was this inadequate treatment a result of unintentional negligence or a criminal act? The autopsy report surprisingly starts with a comment, forensic rather than medical, exculpating the surgeons involved from any wrong doing. Why was this necessary? So that they could charge only the attackers with responsibility and thus justify the severe reprisals to come? Or, as mentioned by some historians, to cover up an internal rivalry at the highest levels of the SS hierarchy? [3].

It is well known that Himmler, as SS chief and Heydrich’s immediate superior, had begun to feel that his own position was threatened by the ruthless ability and repeated successes of the younger man, such as the pacification of Bohemia/Moravia. Could Himmler have taken advantage of the unexpected wounding of Heydrich by sending his physician Gebhardt to hasten the Reichsprotektor’s death?

The evidence from Heydrich’s medical treatment and autopsy suggests that Himmler may well have used Gebhardt as his instrument to dispose of a rival who Himmler feared would eventually supplant him. A complicating factor for both Himmler and Gebhardt, however, was Hitler’s genuine dismay when he learned of Heydrich’s death. Worse still, Gebhardt was accused of negligence by Dr. Theodor Morell, Hitler’s personal physician (*Leibarzt*). Morell owned a factory that produced sulphonamides and argued that Gebhardt should have treated Heydrich with the drug. Gebhardt, on the other hand, insisted that sulphonamides were of little use and had not been required in Heydrich’s case.

To maintain his standing in Hitler’s eyes, Himmler ordered Gebhardt to demonstrate the correctness of his position, and so began Gebhardt’s barbaric medical experiments on concentration camp prisoners. Septic wounds were deliberately inflicted on male inmates at Sachsenhausen and then on female inmates, mostly Polish political prisoners, at Ravensbrück. Some of these victims were then treated with sulphonamides while others were not. Gebhardt’s procedures, like all the other unethical human experiments carried out by Nazi doctors, produced no results of scientific value but caused extreme suffering for the inmates who were subjected to them, with many dying and most of the survivors experiencing permanent mutilation.

CONCLUSIONS

Reviewing the available clinical data and the autopsy findings, it seems probable that Heydrich became a victim of the same kind of medical malpractice at the hands of Gebhardt (possibly on the orders of Himmler) as was inflicted on the most powerless concentration camp prisoners. Such a turn of events would have been bitterly ironic for the architect of the “Final Solution,” had he been aware of it, but it was consistent with the medico-political ideology of Nazi Germany, as stated by Dr Brandt, which held that every individual was to be “completely used in the interest of society.”

The surgical and pathological findings are highly suggestive of medical negligence. The question as to the extent of Himmler’s involvement remains unanswered, requiring further evidence.

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Capsule

Adaptation of innate lymphoid cells to a micronutrient deficiency promotes type 2 barrier immunity

How the immune system adapts to malnutrition to sustain immunity at barrier surfaces, such as the intestine, remains unclear. Vitamin A deficiency is one of the most common micronutrient deficiencies and is associated with profound defects in adaptive immunity. Spencer et al. found that type 3 innate lymphoid cells (ILC3s) are severely diminished in vitamin A-deficient settings, which results in compromised immunity to acute bacterial infection. However, vitamin A deprivation paradoxically resulted in dramatic expansion

of interleukin-13 (IL-13)-producing ILC2s and resistance to nematode infection in mice, which revealed that ILCs are primary sensors of dietary stress. Further, these data indicate that, during malnutrition, a switch to innate type 2 immunity may represent a powerful adaptation of the immune system to promote host survival in the face of ongoing barrier challenges.

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Capsule

IL-35 producing B cells are critical regulators of immunity during autoimmune and infectious diseases

B lymphocytes have critical roles as positive and negative regulators of immunity. Their inhibitory function has been associated primarily with interleukin 10 (IL-10) because B cell-derived IL-10 can protect against autoimmune disease and increase susceptibility to pathogens. Shen et al. identify IL-35-producing B cells as key players in the negative regulation of immunity. Mice in which only B cells did not express IL-35 lost their ability to recover from the T cell-mediated demyelinating autoimmune disease experimental autoimmune encephalomyelitis (EAE). In contrast, these mice displayed a markedly improved resistance to infection with the intracellular bacterial pathogen *Salmonella enterica* serovar Typhimurium as shown by their superior containment of the bacterial growth and their prolonged survival after primary infection, and upon secondary challenge, compared to control mice. The increased immunity found in mice lacking IL-35 production by B cells

was associated with a higher activation of macrophages and inflammatory T cells, as well as an increased function of B cells as antigen-presenting cells (APCs). During *Salmonella* infection, IL-35- and IL-10-producing B cells corresponded to two largely distinct sets of surface IgM⁺CD138^{hi}TACI⁺CXCR4⁺CD11^{int}Tim1^{int} plasma cells expressing the transcription factor Blimp1 (also known as Prdm1). During EAE, CD138⁺ plasma cells were also the main source of B cell-derived IL-35 and IL-10. Collectively, our data show the importance of IL-35-producing B cells in regulation of immunity and highlight IL-35 production by B cells as a potential therapeutic target for autoimmune and infectious diseases. This study reveals the central role of activated B cells, particularly plasma cells, and their production of cytokines in the regulation of immune responses in health and disease.

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Eitan Israeli

“It is better to die on your feet than to live on your knees”

Emiliano Zappata (1879-1919), leading figure in the Mexican Revolution