

Forensic Medical Examination of A Corpse

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Abstract

General Wadysaw Sikorski, the Prime Minister of the Polish government in exile, died in 1943, and his body was given to the Krakow Department of Forensic Medicine for forensic examination. The British committee looking into the tragedy determined it had been an accident after General Sikorski perished in the crash of a Liberator aircraft at Gibraltar. Concerns about the General's death have been raised on numerous occasions over the past few decades, and the assassination theory has gained a lot of traction. The General's body, which had been interred in the Royal Castle Church on Wawel Hill in Krakow, was dug up on November 25, 2008, and carefully investigated. Numerous fractures of the skull, spine, and limbs were found during the investigations, and their characteristics matched those of an aviation accident. It was impossible to determine whether the air crash had been caused by sabotage or a tragic accident based solely on the examination of the corpse. Even while there were no obvious signs of intravitality, such as bruises or fat emboli, several fractures exhibited characteristics that suggested they had been sustained intravitality. These were indicated by fractures of the transverse processes of the lumbar vertebrae, the sustentaculum tali of the calcaneal bone, and the spiral fracture of the femoral bone shaft.

Keywords: Assassination • Intravitality of fractures • Air crash

Introduction

Exhumed bodies of famous historical people rarely get forensic medical exams. The research on the topic occasionally discusses these examinations, which in the majority of cases involve attempts to identify people remains. In 2003 saw the discovery of the Renaissance poet's remains in Padua, Italy. Petrarch (Francesco) was investigated; in Berlin, Martin Bormann, a war criminal, was examined after his death. Additionally, forensic pathologists examined the excavated bodies of the heads of state, for instance, the remains of Polish king Casimir the Jagiellonian and Tsar Nicholas II Romanov and his family in Moscow in 1991. Assassinated in 1918. At the Department of Forensic Medicine in 2008 The body of General Wadysaw Sikorski, who passed away was looked upon. Poland and a sizable portion of Europe were both occupied by German forces during World War II. At the start of the war, the top officials of the government were evacuated, and Wadysaw Sikorski was appointed prime minister of the Polish government in exile, which was based in London. The Polish army, which comprised 100,000 soldiers and was a member of the Allied force,

was started by General Sikorski. The General was in Gibraltar on July 4, 1943, on his way home after inspecting Polish forces in the Near East. His aircraft, a Consolidated C-87 Liberator, crashed into the ocean 16 seconds after takeoff during the night. Only the pilot made it out alive; 17 people died, and five bodies were never found. Wadysaw Sikorski's body was brought to London, and on July 15, 1943, the general was laid to rest in a cemetery in Newark before being unearthed and brought back to Poland in 1993[1-3].

The coffin containing his body is currently lying in state in the cathedral of the Royal Castle on Wawel Hill in Krakow, the location of the Polish kings' final resting place. The British commission that looked into the air crash in 1943 found that the jamming of the steering system was what caused the crash, but they were unable to figure out how this fault had arisen. Theories suggesting that the General's death had been the result of a political assassination were developed not long after his passing. The British government, Soviet intelligence, and Polish opposition figures were all mentioned as probable assassination conspirators. The British government's classification of all relevant crash-related documents, the presence of the Soviet ambassador to Great Britain in Gibraltar on the day of the accident, and—most importantly—the General's corpse's refusal to undergo a post-mortem examination in both 1943 and 1993, when the body was transported to Poland—were the main justifications for the assassination theory. In recent years, press articles and television shows have advanced even more improbable ideas that Sikorski had been killed before the crash and his body had been transported on board the plane, which soon after departure made a gentle landing on the water's surface before sinking. On account of the festivities marking the General's death's 65th anniversary, assassination theories had a resurgence. The Polish President and Prime Minister, as well as the Roman Catholic Church cardinal in charge of the cathedral where General Sikorski had been interred, all endorsed the proposition that the body of the general should be exhumed [4].

The Institute of National Remembrance, a Polish investigative organisation that takes on cases involving crimes committed during World War II, started the formal investigation into the tragedy. The decision to exhume the remains and have it inspected at the Department of Forensic Medicine in Krakow was made by the Institute's prosecutors. On November 25, 2008, the sarcophagus in the cathedral of the Royal Castle on Wawel Hill was opened, and the exhumation process began. The ceremonial act of the sarcophagus being opened and the body being brought to the Department of Forensic Medicine captured global attention. With all the respect accorded a head of state, the coffin was accompanied by armed soldiers and driven through the streets of Krakow. The public was not permitted on the streets itself for the duration of the ceremony and the convoy's trip was televised live. Additionally, the casket's transportation to the autopsy. The atmosphere in the room was ceremonial, and those there included Members of the General's family and local official's authority, including the military, police, and Roman Catholic Church. Nevertheless, the coffin was uncovered in front of the merely an investigational team. Throughout the investigations, numerous Thousands of pictures were shot, and the complete body modification process. The examination was captured on video. the duration of the conducting 24 hours was spent studying; the next day, a funeral service was held planned to happen. The body was enclosed in a wooden coffin that was placed inside of a sealed metal casket [5-6].

Examination of corpse

The General's remains were excavated from the Newark cemetery in Great Britain in 1993, and both coffins were from that time. Reports from the time period attested to the body's preservation and mummification. The body was still rather well kept when the casket was opened in 2008, but the metal had rusted through in several spots, allowing moisture to enter and macerating the tissues. While the T-shirt was less well preserved, the uniform

uniform shirt and undergarments were fairly well kept. When the General's body was retrieved from the water in 1943, it was dressed in these clothes. After radiologic examinations, the body was brought back to the autopsy room where a thorough examination and the post-mortem examination started. Despite the 65-year gap since death, the integuments were retained on the whole surface of the trunk and only partially in the areas of the head, neck, and extremities, with some bone exposure on occasion. Following incisions on the extremities, it was discovered that the muscles beneath the skin were pink in hue before quickly turning russet brown in cross-section. In the neck, the hyoid bone, thyroid, and cricoid cartilages were all found to be in good condition. The ligaments, tendons, and membranous structures were the most prominent connective tissue structures that had been relatively well preserved. The pleura could be seen, along with the diaphragm, intestines that resembled frills, the heart that appeared as a 2-3 mm thick flake, remnants of the lungs that adhered to the inner surface of the chest, residual liver and kidney structures, and a loamy structure that resembled the brain that was seen within the cerebral cavity [7].

Although the soft tissues and internal organs were so well preserved that it was impossible to determine the cause of death, histological preparations were nonetheless made. Later microscopic tests revealed that the connective tissue stroma of the skin, heart muscle, liver, kidney, and intestine had been preserved, revealing the specific structure for each of these organs. The only sign of the injury that could have been seen due to the decomposition of the soft tissues was represented by fractured bones, which was clear from the start. The investigators discovered a fracture together with an infraction into the frontal sinus of a bone fragment measuring roughly 3 cm 1.5 cm on the left side of the facial skeleton, at the level of the frontal sinus, near the intersection of the superior and medial orbital rims. A tiny piece of wood that was wedged here was later determined by a dendrologist to be a piece of Douglas fir wood (*Pseudotsuga menziesii*). A minor fracture of the orbital roof that entered the cerebral cavity was the only other fracture to affect the skull. When General Sikorski's body was discovered after being recovered from the water, a witness said that he had personally removed a wood fragment that was lodged in the left orbital area. This fragment is most likely what caused all of the skull wounds. The forensic pathologists were aware of some fractures due to the previously completed computed tomography imaging, while some fractures were only discovered through computer image processing. Fractures of the right transverse processes of all the lumbar vertebrae were a representation of a fracture that went undetected during autopsy but was revealed by the subsequent computed tomography. The connective systems in the spine and pelvis were so well conserved that they prevented mechanical separation of the vertebrae without harming their delicate structures, therefore the fractures were not visible during autopsy. The 24 hours given for doing all the investigations would not have been sufficient to separate the spine into specific vertebrae and remove all the soft tissues [8].

Discussion

The major goals of identifying General Sikorski's corpse and inspecting his remains were to gather and evaluate all criminal evidence that would be useful in illuminating the accident's circumstances. Forensic pathologists' duties included locating traumatic and pathological lesions that had survived the decomposition of the corpse, figuring out how the injuries were sustained, and, if it could be done, establishing the cause of death. Given the number of fractures, it seems likely that Wadyslaw Sikorski's death resulted from severe internal damage. Unfortunately, the body's severe decomposition prevented any attempts to look for internal organ damage. Thus, the kind of the discovered fractures alone can be used to infer the cause of death. Fractures to the extremities or even the face skeleton do not always result in fatal injuries. However, the post-mortem examination revealed fifteen fractured ribs, with six of those ribs showing multiple fractures. The organs located in the chest cavity and upper abdomen must have been significantly wounded at such a high rate of rib fractures that indicated a crush injury to the chest, as these injuries include rupture of the heart, aorta, liver, or spleen accompanied by profuse internal bleeding [9-10].

Victims of falls from great heights and accident victims both experience rib fractures that are many to such an extent. This shows that General Sikorski's injuries sustained as a result of a high-energy multiorgan trauma, such as an air crash, may have contributed to his death. based on the analysis of the corpse It is impossible to tell whether the crash of the an unfortunate incident or sabotage led to the creation of the Liberator

aircraft. Finding the cause of the injuries was connected to confirming the fundamental account of what happened, such as death in the result of an air crash. Nevertheless, the detectives made an effort to confirm the version that had been The concept of the was recently advanced by the media and General was previously assassinated, and his body was carried on the aircraft, which shortly after takeoff, landed gently on the water's surface to simulate an aeroplane crash [11].

The detectives noticed that the fairly well-preserved integuments of the trunk of the deceased did not exhibit any wounds consistent with a gunshot or stab with a sharp weapon during the initial examination of the body. No signs of gunshot or blunt damage were found in the cranial vault or cervical vertebrae, either. In turn, the hyoid bone and the preserved, undamaged laryngeal cartilages make the notion suggesting strangulation exceedingly implausible. It was required to confirm that the fractures found in the body of Wadyslaw Sikorski had truly been caused intravitaly because not all methods of killing someone could be automatically ruled out. Soft tissue degradation prevented the search for the normal signs of intravital injury, including bruising or pulmonary fat embolisms. There are techniques that can be used to estimate the interval between the time of the fracture and the time of death. These techniques are founded on an examination of the direction of the fracture line, the morphology of the fracture surface, and the quantity of broken bone fragments. These methods, while effective when studying large amounts of data, are useless when examining a single case. This is because they are statistically significant only if the analysis considers fracture infliction shortly after death. The investigating team made use of findings that connect the development of specific fractures with muscle function and are well-known in orthopaedics and traumatology. Either a sudden muscular contraction causes the fractures in issue, or they only occur in an extremity that is strongly stabilised by muscle activity. When such a precise fracture is found, it is assumed that the person was alive because the muscles were active at the time the fracture was caused.

The majority of the fractures found during Wadyslaw Sikorski's autopsy, including the breaks in the skull, ribs, clavicle, and ulna, may have happened to a deceased person. Nevertheless, muscular dysfunction is closely linked to the occurrence of spiral fractures of the femoral bone shaft, fractures of the sustentaculum tali of the calcaneal bone, and particularly fractures of the transverse processes of the lumbar vertebrae. When additional force twisting the trunk or the limb is applied to the lower extremity bearing the weight of the body, a spiral fracture of the femoral bone shaft occurs. Such a fracture is most frequently seen in motor vehicle collisions and in people who jump off a height and land on an extended leg. The presence of a spiral fracture is evidence that the lower extremity's muscles were still in good shape when the fracture was sustained. Without the muscle tone that stabilises the extremity, the power of the trauma would cause the limb to bend at the joints or cause another sort of fracture. The same mechanism that causes a spiral fracture of the femoral bone shaft also results in a fracture of the calcaneal bone at the sustentaculum tali, i.e., when the extremity supporting the body's weight rapidly twists. The latter fracture occurs most frequently in cases of traffic accidents and when people jump off something and land on an extended extremity. Regardless of the aforementioned factors, only a living person can experience a fracture of the transverse processes of the lumbar vertebrae. Only under conditions of active working of multiple muscles of the lower extremities that stabilise the upright posture of the body, as well as the psoas muscle, could these three types of fractures have occurred. Active muscle activity may indicate that the person was still alive when the fractures occurred.

One can even consider if the discovery of a fracture at the site of active muscle action might serve as proof of an injury's intravital nature. However, as the mechanisms behind the development of such fractures have only been identified by clinicians who only treat living patients, the argument is not sufficiently supported by the available data. However, the fractures found in General Sikorski's body show that a very severe trauma was inflicted upon his body, and the trauma itself was connected to an extremely violent stress. If we only analyse the type of fractures and ignore the known circumstances, we come to the conclusion that such a trauma may have been brought on by a fall from a multistory structure or by a car accident. However, when the case's circumstances are taken into consideration, we must concede that the aircraft's collision with the water must have been the causal factor. When the current investigations' findings were published. However, the authors of these new theories attempted to fit the autopsy findings to the premise of homicide. Among these hypotheses, the idea that those responsible for the homicide the corpse was injured by a fake that was constructed, intended to resemble

an accident. The theory's creators cited a legitimate hoax from World War II identified by the code name It is "Operation Mincemeat." The device used by British intelligence to Germans discovered a human corpse disguised as a navy commander, with He falsified records of the upcoming invasion. Therefore, it should be thought about if the fractures mentioned above might have been caused to a body. Animal bones were broken experimentally by a mechanism that squeezed the bones along their long axes, causing spiral fractures, as described by Wheatley. When applying torsional movement to firmly fastened bones, other researchers using human femoral bones were able to produce spiral fractures.

The bones examined during the autopsy of General Wadysaw Sikorski, on the other hand, were attached to the body by well-preserved joints and ligaments and were additionally covered in muscles and skin in addition to being dissected free and detached from the body, lacking in soft tissues. Instead of a spiral fracture of the femoral bone shaft, an attempt to twist the corpse's entire lower extremity would have broken the femoral neck. It is also almost impossible to fracture the sustentaculum tali of the calcaneal bone in a corpse, and the simultaneous existence of both fractures in the same extremity clearly suggests that they were sustained premortally. The transverse processes of the lumbar vertebrae cannot be severed in a body without inflicting severe integumentary damage. By the same token, it is possible to dismiss the theory that the aforementioned fractures were manufactured. In "Operation Mincemeat," the body used in the hoax was not created, but rather was chosen especially to "imitate" a victim of a maritime catastrophe. In this instance, the only way to prepare such a hoax would be to bury someone else in Newark instead of General Sikorski, a real victim of an aeroplane tragedy. Hemogenetic research nevertheless ruled out such a possibility.

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Conflicts of Interest

The authors declare that they have no conflicts of interest.

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