



# HOW CANCER CAUSED WORLD WAR I

LAWRENCE I. BONCHEK, M.D., F.A.C.S., F.A.C.C.

*“The lamps are going out all over Europe;  
We shall not see them lit again in our lifetime.”*

—Sir Edward Grey,  
British Foreign Secretary, 1905-1916

## HISTORICAL BACKGROUND IN BRIEF

Cigar-smoking President Grover Cleveland had a malignant lesion<sup>1</sup> of the maxilla removed in 1893, during a somewhat risky and surreptitious operation aboard his yacht while it cruised off Manhattan. America was in the midst of an economic depression, and a major Presidential illness would doubtless have intensified the financial crisis. A rubber prosthesis filled the surgical defect in his palate so successfully that the malignancy and the operation were kept secret until long after his death 15 years later. Although the concealed illness had no historical impact, it has been the stimulus for countless articles and speculations by American historians.

Contrast this flood of ink with the story of Kaiser Frederick III of Germany. A cigarette chain smoker, he also had a malignancy of the respiratory tract, but one that profoundly impacted world history. Yet, because it affected a European head of state, it is discussed much less often in this country, and few – even in the medical community - realize its significance. But for the misdiagnosis and mismanagement of the Kaiser’s ultimately fatal laryngeal cancer, World War I would likely have never happened, despite the assassination at Sarajevo of Archduke Franz Ferdinand of Austria, which was the immediate precipitating event.

Frederick,<sup>2</sup> born in 1831, was the son of Prince William of Prussia, a mild-mannered reactionary who became King of Prussia in 1861. William left the reins of power in the hands of his “Iron Chancellor” Bismarck, who

used Prussian military power and subtle diplomacy to unite Prussia with the surrounding German states into a German Empire in 1871. In the process, King William was elevated into Kaiser William I. At first, this expansion of Prussian militarism posed no apparent threat to England, and Bismarck’s conservative diplomacy was careful to maintain a balance of power. England was linked to Germany by long-standing ties of language, sentiment, and blood. In 1858 William’s son, now Crown Prince Frederick William, married the eldest daughter of Queen Victoria, also named Victoria but known as “Vicky.” Recall also that Queen Victoria’s beloved husband was her German cousin Prince Albert of Saxe-Coburg-Gotha. (The British Royals were known as the House of Hanover until July 17, 1917, when King George V, reacting to the revulsion against Germany caused by the Great War, substituted Windsor as the official family name.)

Vicky encouraged Frederick’s liberal and reformist tendencies, as well as his desire to create a constitutional monarchy like her mother’s, more responsive to the will of the people. Bismarck, the consummate behind-the-scenes power broker, distrusted Frederick, and kept him out of any position of political power, despite Frederick’s upstanding character, personal bravery, and distinguished military career. He commanded victorious armies in the Austro-Prussian War of 1866, and the Franco-Prussian War of 1870. His politics and his personality made him so personally popular with the German public that they affectionately called him “Unser Fritz.”<sup>3</sup>

In contrast, his conservative and passive father, Kaiser William I, supported Bismarck’s repressive policies over the objections of his liberal son. To the eventual misfortune of Germany and the world, William lived to the age of 91, so that Frederick didn’t succeed his father as Kaiser until March 1888, by which time he was 56 years old and terminally ill of laryngeal cancer. When Frederick died soon thereafter, he was succeeded by his aggressive eldest son, William II, about whom much more later.

<sup>1</sup>The lesion has been called both a sarcoma and a verrucous carcinoma. Either way, it had little propensity to metastasize, and required only complete excision.

<sup>2</sup>English versions of German names are used throughout: Frederick William rather than Friedrich Wilhelm.

<sup>3</sup>“Our Fritz.”

### A TALE OF MEDICAL MISJUDGMENTS

From a medical perspective, Frederick's story reflects both cognitive and judgmental failures by various physicians, with fatal consequences.

The story<sup>4</sup> began in January 1887 when Frederick, then only the Crown Prince, complained of hoarseness, attributed at first to another of his frequent colds. When the symptoms persisted, Dr. Ernst Gerhardt, a physician<sup>5</sup> from Berlin, cauterized a lesion on the left vocal cord several times. When it recurred by May, eminent surgeon Dr. Ernst von Bergmann was consulted, and a diagnosis of cancer was considered. Frederick was not told of these considerations, but when surgical removal was recommended, Kaiser William I and Bismarck, aware of the diagnosis, refused to subject Frederick to laryngectomy without his consent. Three other consultants advocated a more conservative approach: laryngofissure and a limited resection of one vocal cord. The lesion was early, the Prince was healthy, and the surgical risk was low. Frederick would be permanently hoarse, but he would have a voice.

It is important to understand how sophisticated German surgery was at that time. After the introduction of ether in 1846 in America, the availability of safe and effective general anesthesia transformed surgery from an agonizing ordeal confined to rapid amputations and extirpations, to an art of refined and meticulous operations that included often delicate reconstruction of the involved tissues. The 19<sup>th</sup> century has been called The Century of the Surgeon, and nowhere was surgical progress more rapid and dramatic than in the German-speaking countries of Europe. Countless surgical operations and instruments still in use today were introduced by brilliant and intrepid pioneers such as Theodore Billroth, the father of abdominal surgery, and Theodore Kocher, a German speaking Swiss who became President of the German Society of Surgeons. In 1909 Kocher was awarded the Nobel Prize for his work on the thyroid gland. The other major advance during this period was the gradual acceptance of antisepsis, which began with Viennese obstetrician Ignaz Semmelweis' controversial insistence on hand-washing on his service. Though full acceptance of surgical antisepsis was delayed until Pasteur provided a scientific

basis for it, surgery of the larynx posed a negligible risk of infection even before antisepsis. An operative field that includes the upper respiratory tract cannot be rendered sterile even today, nor does surgical success require it. The tissues of the head and neck are so well vascularized that they inherently resist infection.

In sum, the German Royal family had access to the finest surgical care in the world, and Frederick's disease would likely have been controlled if objective judgment had been combined with the timely application of the best medical knowledge and surgical technique of that era. Unfortunately, this case proved again that famous people often get inferior care because the judgment of their physicians is clouded by the exalted position of the patients. (Physicians who are ill may fall victim to the same danger. When a physician or someone in their family is ill, the best policy is to seek trustworthy physicians whose primary consideration is the welfare of all their patients, and to ask them for the same care as they would give to any "ordinary" patient. Of course physicians don't want to wait as long for an appointment!)

In Frederick's case, prominence again proved a detriment. Even after three more German consultants agreed with the suspicion of malignancy, another opinion was sought from a noted English laryngologist, Dr. Morrell Mackenzie, who had written an authoritative text on diseases of the throat. Mackenzie's unnecessary involvement ultimately proved severely damaging. He came to Berlin promptly and attempted a biopsy which yielded a small fragment of tissue. This was examined by another of Germany's medical giants, Rudolf Virchow, the father of cellular pathology.

Virchow saw no malignancy. Mackenzie, relying on Virchow's opinion, locked horns with Gerhardt and von Bergmann, who correctly argued that pathology was still an inexact discipline, and wished to proceed anyway. The choice was left to Frederick and Vicky, whose decision could only be based on emotion, not fact. They opted for the Englishman's more favorable recommendation that the presumed "throat infection" might resolve in a milder climate, and they attended Queen Victoria's Golden Jubilee celebration on June 21, 1887. The next day, in London, Mackenzie removed all the tumor he could find, and again Virchow failed to find evidence of a malignancy.

The growth progressed nonetheless, and by autumn Frederick had completely lost his voice. When Mackenzie

<sup>4</sup>I am indebted for many details to Robert K. Massie's magnificent work: "Dreadnought; Britain, Germany, and the Coming of the Great War." Random House, 1991. Also <http://www.innominatesociety.com/Articles/Virchows%20Mistake.htm>

<sup>5</sup>Laryngology was not yet considered a surgical discipline.

examined him again in November, the diagnosis and prognosis were undeniable, and Frederick was told that his life expectancy was limited. In keeping with his resolute and dignified character, he thanked Mackenzie for his care, and accepted his fate. He is quoted as having said, "Lerne leiden, ohne zu klagen!" ("Learn to suffer without complaining"). The next February a tracheotomy was necessary to prevent suffocation, and by March when his father the Kaiser died, he was too weak to attend the funeral. Frederick died on June 15, 1888 after only 99 days as Kaiser, during which the German public and press castigated his English wife and his English doctor for the course of events.

Soon thereafter, both Mackenzie and the German doctors published conflicting accounts of the story, each designed to exonerate themselves from criticism. Mackenzie, who had been knighted in the interval by Queen Victoria for his presumably excellent care of her son-in-law, suggested that the lesion had become malignant as a result of the treatment rendered by the German physicians after Mackenzie's first visit. Because his account was so flagrantly self-serving in its criticism of other physicians, he was castigated in England and censured by the Royal College of Surgeons. A few years later in 1892, he died quite suddenly at the age of 54.

In defense of Virchow, it is possible that when he first examined the tissue it was a verrucous carcinoma like that of Grover Cleveland, and in the absence of invasion, it would have been considered benign. Indeed, verrucous carcinoma was unknown until the 20<sup>th</sup> century, as was the concept of carcinoma-in-situ. If indeed the initial lesion was superficial and noninvasive, only to become overtly invasive later, Mackenzie's seemingly self-serving claim that "it had become malignant," was not far-fetched according to the knowledge of the day.

### THE BLOODY CONSEQUENCES

The brief reign of Kaiser Frederick III was succeeded by that of his 29 year-old eldest son William II, a truculent throwback, who bridled under the restraints of a constitutional monarchy and eventually was so frustrated by Bismarck's careful, calculating diplomacy that he sent the Chancellor into retirement. William's personality was profoundly influenced by an injury to his left brachial plexus at birth, which left him with a shortened, almost useless left arm. In official photographs the arm's condition is concealed by artfully tailored uniforms and clever positioning, but it made him sensitive to criticism and prone to compensate with bluster and braggadocio.

At first a polite and agreeable child, as a young man he entered the First Regiment of Foot Guards and gradually began to strut and speak in a militaristic, authoritarian manner. Despite his parents' efforts to raise him to be a modern constitutional monarch, he became increasingly volatile and politically conservative. He was overtly disrespectful to his parents, and he was virtually estranged from his liberal English mother, whom he ostracized after his father's death.

Like the British monarch, the Kaiser's position as head of state was inherited, but his powers were far greater. He had sole authority for appointing the Chancellor, the Foreign Secretary, and all Cabinet level ministers. He was Commander-in-Chief of the military, though the elected Reichstag controlled the military budget and approved all appropriations. Indeed, Germany's system of government in the first Empire had many resemblances to our Presidential system, and was equally susceptible to abuses of power in the time-honored tradition of manipulating public opinion to fear outside threats.

Kaiser William II's reign from 1888 until WW I was characterized by relentless military expansion, and a naval buildup that threatened England's naval supremacy. As an island nation with worldwide colonies, England's safety and prosperity depended on its ability not only to control the English Channel and prevent invasion from the continent, but simultaneously to maintain unimpeded sea lanes and transit through the Mediterranean Sea and the Suez Canal to India, Singapore, Hong Kong, and the South Pacific. England viewed its sea power as an asset to every trading nation, as England assured all flags safe and open access to ports around the world.

Throughout the 19<sup>th</sup> Century, British naval supremacy, its colonial empire, and its continental alliances, had all been designed to contain and suppress its historical enemy France. As late as 1895, with Victoria's reign drawing near its close, rumors that France might be planning an expedition to the headwaters of the Nile could stoke the old hostility. In contrast, Germany and England had bonds of language, culture and kinship; had no contested borders; and lacked any significant colonial rivalry. Nonetheless, Germany's relentless naval expansion and unwavering pressure on England slowly dissipated British complacency like fog in the Channel, forcing it to realize that Germany was determined to contest England's dominance in ways that were anything but honorable.

Just as occurred decades later in the prodrome to WW II, the same giant of British statecraft – Churchill – was critically positioned to prepare for impending doom, this time as First Lord of the Admiralty. While England considered its own navy a necessity, Churchill called Germany’s navy a “luxury.” England’s position as unrivaled naval superpower rested on a longstanding policy of building more ships than the sum of any two rivals. Churchill attempted to conciliate the Kaiser’s insistence on a larger German navy by indicating readiness to reduce England’s historic 2:1 margin of superiority in capital ships to 1.6:1. When Germany’s building program continued unabated, he proposed a one year moratorium on laying keels for “dreadnoughts,” the most powerful class of battleships. The Kaiser reacted with typical volatility and paranoia, rejecting all attempts to moderate the arms race, and insisting that “no one can tell Germany what we may or may not do.” German public sentiment along these lines was also drummed up by the military, and Germany’s intransigence overrode all attempts at diplomacy by a British Labor government that would have preferred to divert funds from armaments to social programs in health care, education, etc. (It is remarkable as one reads these accounts to realize how similar they sound to the rantings of Hitler before WW II; the main difference being Hitler’s emphasis on planes and submarines, not just ships).

With the Kaiser’s enthusiastic prompting, the Reichstag approved a long-term program of naval expansion that would make Germany a credible rival in the North Sea. England transferred its Mediterranean Fleet to the North Sea, leaving the French Navy to protect the Mediterranean, but a further threat was Germany’s construction program to widen and deepen the Kiel Canal across the base of Denmark. Enlargement of this waterway to accommodate large warships altered the balance of sea power by bringing German ships from the Baltic into the North Sea without the arduous trip around Denmark and through the Skaggeat. Many diplomats correctly predicted that completion of the new canal in 1914 would coincide with the outbreak of war with Germany.

Sure enough, on June 28, 1914, the assassination of Archduke Franz Ferdinand, heir to the Austro-Hungarian throne, by a Bosnian member of a Serb extremist group,

provided Germany with the pretext it sought. Despite efforts by all the Great Powers to defuse the crisis; despite the Serbian government’s innocence in the plot and abject acquiescence to all of Austria-Hungary’s objectionable demands; despite the British public’s unwillingness to get involved in a Continental melee; despite tireless efforts by the British Foreign Secretary Sir Edward Grey to reconcile the aggrieved parties; despite Belgium’s neutrality; despite the fact that none of the events of July 1914 threatened Germany’s sovereignty or territorial integrity in the slightest; Germany irrationally insisted that “this war is a question for Germany...of her whole national existence...also the preservation and maintenance of German civilization and principles!” On August 4, 1914, German troops crossed into neutral Belgium, and after a British ultimatum to withdraw went unanswered, Great Britain went reluctantly to war with Germany.

#### CONCLUSIONS

By Armistice Day more than four years later on November 11, 1918, more than 9 million soldiers and an equal number of civilians had been killed, and an estimated 21 million people had been injured. Though some historians argue that William II did not intend to unleash a World War, their apologetics seem misguided. His nationalist objectives required it, and he surely provoked it with his enthusiasm for naval expansion and his encouragement of the German military. Belgium, the first country invaded by Germany, was neutral.

It is inconceivable that Germany would have gone down this warpath if the enlightened, reform-minded Kaiser Frederick William had lived a normal life span. In 1914 he would have been 82. His father had lived to 91, and William II, the cause of it all, died in 1941 at the age of 82 (apparently of a pulmonary embolus). Even if Frederick William had not enjoyed quite the same longevity that characterized his family, he would not have initiated or tolerated the military build-up that made it possible for Germany to rival Great Britain and its allies.

Though historians engage in convoluted analyses about the multiple factors that contributed to the Great War, I think it is fair to say that there was one essential component. From this surgeon’s perspective, cancer caused World War I.