I FELL AMONG CUTTHROATS

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Spencer W. Kimball and Cancer of the Larynx

Spencer W. Kimball's medical history provides a remarkable story, filled with faith, patience, and courage—and fine medical care. During the 90 years of his life, he underwent a dozen or more operations and suffered from numerous medical afflictions. Yet he lived a long and active life, the last 12 as President of The Church of Jesus Christ of Latter-day Saints. Even in old age he was an energetic and vibrant leader. Once he told his personal physician that the doctor's job was to keep him going at the pace he needed to go.[1]

SPENCER AND CAMILLA KIMBALL
WEDDING PHOTO
1917

Born in 1895, Spencer Kimball's long life spanned a time when medical care was still primitive, particularly in rural areas, through great improvements in diagnosis and treatment. These improvements during the late 19th and the 20th centuries were paralleled by a growing acceptance of modern scientific medicine by the Latter-day Saints.[2,3] Members are counseled that "our belief in the divine power of healing should in no way preclude seeking competent medical assistance."[4]

When Spencer was three he suffered "a very bad case of sore eyes."[5] At eleven he developed Bell's Palsy (idiopathic facial paralysis), which resolved spontaneously. At 14 "I took sick with typhoid fever but as the case was not very severe I was well in seven weeks." During his mission he was housebound for 10 days with a combination of quinsy (tonsil abscess), a burst ear drum, and a boil. Shortly after his marriage he had a mild case of smallpox. His wife, Camilla, counted 125 pustules on his face. In 1920 he underwent a tonsillectomy for chronic tonsillitis. For many years of his adult life he was afflicted with recurrent carbuncles or boils, as many as 24 at one time. He endured these proverbially painful skin infections while continuing to work without respite. He had the boils into his 60s. The treatment he used that seemed to help most to control the infections was rubbing sulfanilamide powder on any spot that threatened to develop into a boil.

In 1948, five years after his call to the Quorum of the Twelve, Elder Kimball suffered a heart attack. Chest pains, exacerbated by his heavy work schedule, forced him to take several months off, only to be plagued by return of symptoms when he resumed activity. Angina and congestive heart failure intermittently flared up for many years. This culminated in 1972 when Dr. Russell Nelson performed open-heart surgery with coronary artery bypass graft and aortic valve replacement for aortic stenosis. In 1981, under local anaesthetic, Dr. Nelson implanted a pacemaker after President Kimball's heart rate had dropped down to 44 beats per minute, with resulting fatigue.

In 1979, when President Kimball was 84, Dr. Bruce F. Sorensen drilled a burr hole above the right temple to drain a subdural hematoma. Two months later he repeated the operation. And two years later Dr. Sorensen sawed out a rounded piece of skull about four by five centimeters, three centimeters above the right eyebrow. Underneath the dura, scar tissue, probably from the earlier operations, and new blood and fluid from unknown cause, had created pressure on the brain, resulting in weakness, confusion, and sleepiness to the point that President Kimball had been falling asleep even in the middle of eating lunch.

Other physical difficulties, less life threatening, hindered him. Cataracts made reading difficult. In 1979 for the first time President Kimball turned his address over to someone else to read because he could no longer read even quarter-inch type. Glaucoma remained under control with eye drops. He ultimately became completely blind. His hearing diminished; he owned a hearing aid but resisted wearing it. His voice sometimes faded so that without a special microphone attached to his eyeglasses frame he had difficulty making himself heard. He had some severe degenerative arthritis in his back, with sciatica in his left leg and considerable low-back pain. He had a supportive corset, but felt it beneath his dignity and wore it only when the pain was intense. He suffered chronic prostate problems despite an operation. Fiber shedding from his heart valve replacement caused transient strokes, which interfered with motor activity for a period of days. In 1982 President Kimball experienced a substantial hernia, treated with a truss. And in 1983 he suffered from internal bleeding that was treated with stomach-coating liquids, rather than more intrusive methods. Though he was generally cheerful, the combination of problems sometimes left him feeling depressed.

He died November 5, 1985, at 90. Dr. C. DuWayne Schmidt entered on the certificate that death resulted from "cardiac arrest [due to] hypotension (shock) [as a consequence of] upper gastrointestinal bleeding (unknown cause), congestive heart failure, coronary artery disease and recent pneumonia, hypertension, etc."[6]

Of all his illnesses, before the decline of old age, the one that most influenced Spencer W. Kimball's public life was cancer of the larynx.[7] For more than 30 years as a General Authority, it significantly shaped his work and his character.

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Laryngeal surgery was performed in 1957 by the eminent head and neck surgeon, Dr. Hayes Martin. The resulting soft rasping voice became an audible reminder to all who heard Spencer Kimball of the price he paid for his preaching. A review of his case also provides insight into the evolution of treatment of laryngeal carcinoma and portraits of those who cared for the apostle.

CASE REPORT AND PERSONAL PROFILES

In late 1949 Spencer W. Kimball began to have an annoying hoarseness in his voice, "constantly hoarse since the first of December."[8] Without cough or pain it persisted throughout the winter. On March 3, 1950, he visited Dr. Leland R. Cowan, a cancer specialist in Salt Lake City, establishing a physician-patient relationship that lasted over 25 years.

Leland R. Cowan was born and reared in Salt Lake City. He graduated from Columbia University Medical School in 1920 and took his surgical internship and general surgery residency at Roosevelt Hospital in New York City. He then received further training in surgical oncology and radiation therapy at Memorial Hospital, which later became Memorial Sloan-Kettering Cancer Center. Though extended postgraduate residency training is commonplace today, the two-year fellowship Dr. Cowan took at Memorial was extraordinary for its time. He returned to Salt Lake City in 1926 and began his practice. After an initial tenure as a general practitioner, in the early 1930s he restricted his practice to oncology, doing both surgery and radiation therapy.

In that first visit Dr. Cowan examined Elder Kimball and found a white spot on the left vocal cord,[8] most likely a region of leukoplakia, an area of reactive change in the mucosal lining. The spot may have also been some whitish exudate from an ulcerated region of the vocal cord. Dr. Cowan referred his patient for a second opinion to Dr. Leroy Smith. The two physicians treated the lesion conservatively, with voice rest, steam, and medicine (unspecified, possibly antibiotics). Elder Kimball visited the two physicians eight times in the next month. On the Monday and Tuesday following April General Conference he saw both Dr. Smith and Dr. Cowan. They recommended a biopsy of the vocal cord and an appointment was made with Dr. Ralph Rigby, an otorhinolaryngologist with experience in laryngoscopy, which was not then a common skill.

Elder Kimball wrote in his journal the night after the second visit to Dr. Cowan: "Cancer! Cancer! of the throat would render me useless from now on for the Church. I had done so very little in these six short years [of apostleship]. . . . It was a black outlook indeed."[9] A large part of his fear of the specter of cancer involved the death of his sister, Helen Kimball Farr, two years earlier. At age 48 she died from cancer, probably carcinoma of the maxillary sinus, since the tumor was discovered during sinus surgery for severe right sided facial and orbital pain that she developed in 1947. This type of malignancy still has a poor prognosis, though improved with current surgical and radiation techniques. At that time she was deemed incurable, and over the next 13 months the cancer spread to involve the entire right side of her face and neck, terribly disfiguring her. Regarding his sister's death he wrote, "To look forward to a possible year or two or more of intense agonies and suffering such as my sweet sister Helen went through only in 1948, and then to die of this cancerous malady, is anything but a happy thought. . . . A coronary death would be sweet compared to the death Helen suffered. I think I do not resist the death so much as the (as Uncle [J.] Golden [Kimball] said) getting dead with cancer."[10] Though he entertained the idea of refusing the biopsy, Spencer Kimball understood the risk in delayed diagnosis of malignant growth and he agreed to surgery.

On April 11, 1950, Dr. Rigby proceeded with direct laryngoscopy and biopsy of the left vocal cord, under general anesthesia at St. Marks Hospital in Salt Lake City. While Elder Kimball recovered from surgery, an orderly wheeled his gurney back to a room. The orderly, annoyed at something, uttered a profanity and the semiconscious patient pleaded, "Please don't say that. I love him more than anything in this world. Please."[11]

Two days later a report said that the biopsy showed "the surface epithelium intact. At one side it is thin but within the lesion proper there is considerable thickening with long rete peges showing acanthosis. Heavy infiltration with plasma cells is seen in the subepithelial connective tissue."[12] A diagnosis of chronic inflammation with epithelial hyperplasia was given. No malignancy.

The apostle was not completely relieved by the report. He wrote, "The news that it was not cancer did not bring me the relief mentally that I might have expected. I seem to have a foreboding that all is not well yet and that I might yet never get back my voice which is so precious and indispensable to me in my work."[13]

A repeat laryngoscopy and cautery of the vocal cord was initially recommended by Dr. Rigby. Cautery of chronically inflamed tissues, probably with silver nitrate, was felt to promote healing. Elder Kimball received a blessing from President Clark and Elders Lee and Moyle.[14] After the blessing his voice improved quickly. Less than a month after surgery he wrote, "I waited more than an hour in the Doctor's office. . . . He said he was sure that I wouldn't need to have my vocal cord cauterized. I am so grateful to the Lord for the miracle which has healed me. My voice is almost normal."[15] By the end of the year his voice had improved to be able to sing a little after nearly a year of inability.[16]

As an apostle, Elder Kimball continued his extensive speaking assignments for the next six years, writing in October 1956, "Voice held up well after 3+ hours speaking

Saturday and 4¾ hours speaking Sunday."[17] In November 1956, "At 2 o'clock I went to Dr. Cowan who pronounced me in good condition. Apparently there is still a little fringe on my vocal chords, but he could see no disturbing element and my voice has been excellent the last few weeks, better than for years."[18] It is interesting that Elder Kimball continued to see Dr. Cowan during this time, as he did not have a diagnosis of cancer and Dr. Cowan was a cancer specialist. Though not a laryngologist, he had keen skill with indirect laryngoscopy, no doubt from his training at Memorial. The physician and patient had developed a strong professional and personal relationship.

After a six-year, symptom-free period, the hoarseness recurred around Christmastime 1956. One morning he awoke and noticed some blood in the back of his throat and a weakening of his voice. He returned to Dr. Cowan, who noted in his records:

> Recurrent acute hoarseness. More so than for some time. Left vocal cord [for the] 1st time since I have been observing patient is fairly granular and very fairly superficial[ly] ulcerated, and deeply injected with strands of mucous. Both cords to some degree red and inflamed. No paresis of cord. Neck negative.
>
> Rx: If same does not clear up promptly, then advise biopsy of left vocal cord.[19]

Dr. Cowan urged Elder Kimball to travel to New York and see Dr. Hayes Martin, "the best in the world for throat cancer."[20] Dr. Cowan himself did a great deal of laryngeal surgery and was well trained and competent in this field.[21] He practiced all types of oncologic surgery, exclusive of the chest and brain, as well as doing radiation therapy. But in this case he recommended Dr. Martin.

DR. HAYES MARTIN

During his residency in New York, Leland Cowan became good friends with Hayes Martin, another trainee one year ahead of him. They did many cases together during this time, and after his return to Salt Lake City, Dr. Cowan regularly visited Dr. Martin on his frequent trips to New York. They often had dinner together at Dr. Martin's home and Dr. Cowan enjoyed observing Dr. Martin and his staff in the operating room at Memorial.

Hayes Martin remained at Memorial Hospital as a faculty member after his residency days. His distinguished career saw the development and popularization of many basic principles and surgical techniques related to the diagnosis and treatment of cancer of the head and neck. Dr. Martin published numerous papers and a book on the field, belonged to many national and international medical societies, and lectured worldwide.[22] Dr. Cowan's endorsement of Dr. Martin to the anxious apostle was not overstated.

Starting as a junior faculty member of Memorial Hospital in 1925, Dr. Martin developed an interest in tumors of the head and neck, excluding the brain and spinal cord. Because of his skill and insight, in 1934 he was named chief of the Head and Neck Service at Memorial. This was the first hospital service in the United States devoted solely to the treatment of head and neck cancer.[23] Martin initially pursued radiation therapy as the major treatment modality for these diseases, but by 1939–40, due to poor results and complications of radiation techniques used at that time, he changed his emphasis to surgery. With the help of improved anesthesia, blood transfusions, and antibiotics, Martin revived the operative procedures for neck dissection and tumor excision developed by Crile and others.[22,23] Carefully studying his results, he wrote several papers that enunciated basic principles of modern head and neck cancer surgery.[24,25] He first applied the term "Head and Neck Surgery" to his field in 1948[26] and in 1954 was cofounder and first president of The Society of Head and Neck Surgeons.[23] In 1957, the year of his retirement, he published his opus magnum, *Surgery of Head and Neck Tumors*,[27] that summarized his entire surgical experience. And it was in March 1957, the last year of Dr. Martin's career, that Elder Kimball traveled to New York to be treated.

Dr. Martin examined the apostle on March 4 and noted,

> There is a slight degree of huskiness which would not be so noticeable except that patient states it is not the voice it used to be. Mirror examination of the larynx reveals what appears to be an edematous flat polypous lesion of the left vocal cord. The lesion extends from the anterior commissure back to beyond the vocal tubercle. At the tubercle itself there is the greatest piling up of the lesion. There is no alteration of mobility of the cord. It looks grossly benign. There is no very marked sign of leukoplakia. Admit for examination and biopsy, and stripping of cord under general anesthesia.[28]

THE FOLLOWING DAY Spencer W. Kimball was admitted to the hospital and on March 6 underwent direct laryngoscopy with biopsy and bilateral vocal cord stripping under general anesthesia. Though he endured a cold and impersonal hospital staff,[29] there were no complications and he was discharged the following day on strict voice rest.

The next Monday the Kimballs returned to Dr. Martin. They were told the laboratory tests were unfinished and they would have to return two days later. The reason for

this is unclear since the pathology report was signed out and dated on March 8, the previous Friday. The biopsy report of "both vocal cords" (left and right specimens were not reported separately) showed in situ epidermoid carcinoma.[28] In this borderline malignant condition, the normal mucosa is replaced by neoplastic cells, but the basement membrane and stroma are intact without invasion. Though on preoperative examination the right cord was normal, its appearance at endoscopy is not reported and we can only assume from the pathology report that both vocal cords showed carcinoma-in-situ.

When the Kimballs returned on Wednesday, March 13, they were told of the borderline malignancy involving both vocal cords. The issues of the concern for spread of the tumor versus voice preservation were certainly discussed. Dr. Martin considered a total laryngectomy but apparently this was not a strong recommendation. He discussed the situation with both the Kimballs and Dr. Cowan by phone. They agreed to have Dr. Cowan observe the larynx for recurrence, knowing the indolent nature of the tumor. Though we have no medical records from this visit, a letter from Dr. Martin to Dr. Cowan confirms this.

> I wrote you on March 5th, before making the biopsy, stating that the lesion looked more benign than malignant. The biopsy report was returned showing "In Situ Epidermoid Carcinoma." If you will recall our conversation, we agreed that since the lesion (whatever it was) was on both vocal cords, the only logical method of treatment to clear the whole situation would be a total laryngectomy. Since the report is only "In Situ Epidermoid Carcinoma" and since I (and probably you also) have observed these cases to go on for years without developing anything very serious, I hesitate to recommend total laryngectomy at this time. I think it would be perfectly reasonable and in Mr. Kimball's best interests if you and I kept an eye on it and any time we thought there was any unusual activity we could then consider surgery of some kind. To propose a total laryngectomy now seems too drastic, especially since his voice is so important to him.[30]

THE HOARSENESS PERSISTED. The next time Dr. Cowan saw the patient was on July 3, 1957, four months after the vocal cord stripping. He wrote, "Right cord has healed completely, Left vocal cord remains unhealed ant[erior] ⅔, and looks suspicious. . . . Back to see Dr. Martin and get opinion."[31] Still on voice rest, Elder Kimball wrote a letter to Dr. Cowan with questions about his condition. It shares his anxiety about his illness and its effect on his calling in the Church, and the prospect of returning to the large Eastern teaching hospital where his previous unpleasant experience as a patient had not been atypical.

> Dear Dr. Cowan,
>
> Would you answer for me as nearly as you can the following questions? Is there any evidence of healing of the one cord? . . .
>
> If cancer is present on the cords is it likely to be a short time or a long time before it would spread to the neck? Assuming that it were not stopped by further operation does your experience indicate that it might be months or years before it could be fatal? If there is cancerous growth again on the cords, is it possible to strip it again without taking the vocal cords? . . .
>
> I am not too disturbed about death, even if that is in the offing. I am much more concerned about losing my voice which is tantamount to death in the sense that the work I love would be hampered if not stopped.
>
> If I go back to see Dr. Hayes [Martin] again, how can I be assured that I will not be subjected to a laryngectomy? Last time I had very little opportunity to see him or discuss my case with him. I was turned over to student doctors or understudies and though I tried I had almost no chance to discuss the case at all with Dr. Martin and very little with the young doctors. I wanted to explain to Dr. Martin the importance of my work as an Apostle and that my voice was more important than saving my life. I had no opportunity. Once on the assembly line, I moved through and not until after the operation and I was speechless did I have the chance to sit down with Dr. Martin and then I could not convey my thoughts—paper and pencil being too slow for a busy man. . . .
>
> You have been so very kind to me and made way for me even on your busiest days and never too busy to explain my condition that I am badly spoiled. I was hardly prepared for the impersonal treatment.
>
> When I see the way other doctors work, I am again and again amazed at you—how you give your whole self to every patient—how kind and personal you are—how tender and yet efficient. I do appreciate you and all the many things you have done for me.
>
> Thanks sincerely and from the bottom of my heart.
>
> —Spencer W. Kimball [32]

On July 20 a repeat exam showed the larynx unchanged. Dr. Cowan wrote, "Advise seeing Dr. Martin for ?partial [laryngectomy] or biopsy etc. as Dr. Martin advises. Patient told surgery better than radiation."[33] The Kimballs learned from Dr. Cowan that Dr. Martin in New York was about to leave on vacation. At Memorial Hospital Dr. Martin, at the age of 65, had retired June 30 from his position as chief of the Head and Neck Service, which he held for 23 years.[34] He was winding down his practice and leaving on an extended vacation. Plans were made

quickly. President McKay gave approval for Elder Kimball to go to New York and submit to surgery if necessary. Elder Harold B. Lee went with the Kimballs to advise in the decision.

The two apostles explained the unique importance of Elder Kimball's voice to the whole Church and obtained a commitment from Dr. Martin to remove as little tissue as possible.[35] As with Dr. Cowan's examination, Dr. Martin found a warty, piled up lesion on the left vocal cord, the right cord was smooth. Dr. Martin postponed his departure for vacation. Elder Kimball was admitted to the hospital on July 28 and underwent surgery on July 29.

Dr. Martin was assisted by a Dr. W. Knauer and a Dr. B. Higgins; Dr. Knauer dictated the operative note. The description of the procedure follows closely the text of Dr. Martin's book in the section "Partial Laryngectomy through Laryngofissure." In addition, a section of thyroid cartilage adjacent to the involved vocal cord was also removed.[28,36] Dr. Martin wrote to Dr. Cowan the following day:

> I operated upon Mr. Spencer Kimball yesterday exposing the larynx through laryngofissure. I found a papillary warty growth involving the anterior two-thirds of the left vocal cord with a 2 or 3 MM extension past the anterior commissure onto the right cord. The growth did not look to be highly malignant. I excised a part of the cartilage and then the left cord back to the vocal process. Then leaving the anterior attachment of the right cord in place, I made an elliptical excision of the very superficial warty lesion on the anterior portion of the right cord, closing the latter wound by a couple of interrupted sutures. The rest of the procedure was routine. . . .
>
> I will write you later about the histologic report which I am certain is going to be a very low grade growth. . . .
>
> The whole setting was one which I think permits of a very good prognosis except possibly that the remaining cord will undergo the same type of general degeneration as was present on the left. . . . I am pleased to be able to give you such an encouraging report.
>
> Kindest regards.
> Sincerely,
> —Hayes Martin[37]

Postoperative recovery initially proceeded uneventfully. The tracheotomy tube was removed and an oral diet begun on the first postoperative day. By the third postoperative day some bleeding, pain, and tenderness developed at the lower wound edge in the tracheotomy site. A superficial infection at this area caused much pain and discomfort. It appeared to resolve and Elder Kimball was discharged on the fifth postoperative day. He stayed in the Eastern States mission home in New York City recuperating. During his stay there, he recorded the journal entries that were later published in *One Silent Sleepless Night*.[38]

As Dr. Martin predicted, the pathology showed on the left cord carcinoma-in-situ with one small focus of superficially infiltrating carcinoma. Margins appeared clear. The right anterior cord showed only chronic inflammation.[28]

The pain, swelling, and tenderness recurred at the tracheotomy site. Elder Kimball returned to Dr. Oliver Moore, Dr. Martin's associate, several times for treatment. Dr. Moore wrote to Dr. Cowan on August 16,

> "Mr. Spencer Kimball was in the office this morning. He has developed a cellulitis in the place where the tracheostomy tube was used. This is red and slightly raised, and we have had him on hot soaks, gantrisin and daily sprays here in the office. . . . I have told him that I thought that he should not leave New York until the cellulitis has completely cleared up."[39]

Dr. Moore also reported showing the Kimballs "Dr. Martin's pictures and text concerning the operation," which were most likely those used in his book, published a few months later, in November 1957. They discussed voice rehabilitation following laryngeal surgery, and Dr. Moore suggested that there might be development of a pseudocord that would give him some speech. Before leaving New York, Elder Kimball received some speech therapy exercises at the National Hospital for Voice Disorders. The wound infection slowly resolved and at the end of August the Kimballs returned to Salt Lake City.

Dr. Cowan insisted on voice rest with limited use for several months, though the patient felt this was too conservative. In November after his examination Dr. Cowan noted, "Looks excellent. Right vocal cord normal, freely moveable."[40] He permitted the Apostle to begin public speaking, while urging restraint.

In the first speaking assignment since laryngeal surgery, Elder Kimball returned to his home stake in Arizona for stake conference. Though tentative, he warmed himself and the audience by telling them that he had gone to New York and fallen among cutthroats and thieves who had slit his throat and stolen his voice.[41] He felt "like a resurrected person" and reveled in his renewed ability to speak. In December Dr. Cowan noted, "Looks excellent. Voice quite good."[42]

Dr. Cowan continued periodic laryngeal examinations of Elder Kimball for the next decade, even following his retirement from practice in 1967 at age 73. His son, Leland B. Cowan, had joined him in practice and assisted in the care of the apostle. As had been predicted by Dr. Moore,

the left false cord developed into a "pseudocord," allowing better glottal vibration and improved voice, though different than before surgery. Elder Harold B. Lee had observed that when Elder Kimball spoke people leaned forward and listened with special intentness to the Apostle preaching with a new voice.[43] A clinic note on April 30, 1969, almost 12 years after the operation, says, "Feels good. Voice about the same. Left false cord seems almost like an immature cord. I cannot find anything suspicious of recurrence of cancer in larynx."[44] Unfortunately, this clinical impression was short-lived.

In the summer of 1969, increased hoarseness and tenderness of the left upper neck developed. On examination, a small area of ulceration was noted below the left false cord in the region of previous surgery. This lesion persisted over several months of reexaminations and Dr. Cowan recommended biopsy. On October 30, 1969, under local anesthesia as an outpatient, Elder Kimball underwent direct laryngoscopy and biopsy, performed at LDS Hospital. Dr. Cowan noted that his son " 'Lee' did a biopsy, 3 good pieces" of laryngeal tissue obtained.[45]

The specimen was examined by all members of the LDS Hospital pathology department. It showed that the epithelial covering was thickened and dysplastic, though the basement membrane was intact. Two doctors felt this was a squamous cell carcinoma and three diagnosed severe dysplasia. Dr. Cowan sent the slides to Dr. Frank W. Foote, Jr., at Memorial Hospital, the pathologist in New York City who had reviewed the specimen from Elder Kimball's surgery 12 years earlier, and also to Dr. Vincent J. Hyams of the Armed Forces Institute of Pathology in Washington, D.C. Both specialists felt that the biopsies were highly suspicious for recurrent squamous cell carcinoma but in the absence of invasion were reluctant to make the diagnosis.[46]

Dr. Cowan felt strongly that there was high risk of cancer and recommended another biopsy. A second direct laryngoscopy and biopsy was done on December 4, only six weeks after the previous one, by Dr. Cowan and his son at LDS Hospital under local anesthesia. The procedure was accomplished with some difficulty visualizing the larynx. Biopsies of red granular area in the left mid larynx were taken, with some bleeding encountered.[47] Though weak, Elder Kimball recovered and felt well enough to attend temple meetings of the General Authorities later that same day. The biopsies were again reviewed by all staff pathologists at LDS Hospital and Dr. Foote in New York. Epithelial hyperplasia with mild atypia, less pronounced than previously and no invasion, was seen. Dr. Cowan was again left with equivocal results on which to recommend treatment. He felt the growth was malignant but lacked definitive pathologic evidence.

In this difficult clinical case Dr. Cowan, as he had in the past, consulted with his friend Dr. Hayes Martin. At this time Dr. Martin was well into retirement himself at 78 years of age. However, as professor emeritus at Memorial Sloan-Kettering Cancer Center, he continued correspondence and clinical follow-up with his patients, such as Elder Kimball. He adhered to the counsel he had given his residents: "When you accept a patient for treatment, he becomes your responsibility as long as he or you shall live."[48]

In February 1970, on his way to a stake conference in Maine, Elder Kimball stopped in New York City to see Dr. Martin, 12 ½ years after Dr. Martin performed his surgery. As he had through nearly all of his career, Dr. Martin opposed radiation therapy as an alternative in treatment of laryngeal cancer. He felt a total laryngectomy was probably necessary. A second appointment was made for the following day to discuss the issue further. As Elder Kimball came into Dr. Martin's office he heard Dr. Martin saying to Dr. Cowan on the telephone, "A man that has a growth in his larynx should have it out regardless of biopsies. . . . I am opposed to cobalt [radiation]."[49] Dr. Martin recommended surgery (total laryngectomy) or nothing (observation); therefore, given Elder Kimball's resistance to losing his voice completely and the apparent indolent nature of the growth, they agreed just to watch the condition carefully.

DR. LELAND R. COWAN

Dr. Cowan and his son examined Elder Kimball every three months and the nodular growth remained unchanged for almost two years, until August 1971. The mass appeared to increase in size and the left laryngeal mobility was decreased, with continued tenderness in the left neck. Dr. Cowan followed the lesion for the next six weeks, during which time the Kimballs attended the first area conference of the Church in Manchester, England. On re-examination it appeared more suspicious, though Dr. Cowan noted "it seems to be rather unordinary for length of time since operation."[50] It is unclear which "operation" Dr. Cowan referred to, the laryngoscopy he performed two years earlier or Dr. Martin's surgery in 1957. In either case, he emphasized the unusually indolent nature of the laryngeal tumor. Despite the slow growth, the suspicion of malignancy was high. He felt sure this was "recurrent disease or new primary. Both Lee [his son] and I feel biopsy indicated."[51]

In addition to his throat problem, Elder Kimball became aware of other severe medical conditions during this time. In evaluation of increasing fatigue he experienced over the summer, tests in September disclosed that he had severe aortic stenosis and aortic calcification, with resultant congestive heart failure and pulmonary edema.

At the same time Dr. Cowan was recommending a laryngeal biopsy, Elder Kimball's cardiologist, Dr. Ernest L. Wilkinson, Jr., advised him that he needed a cardiac catheterization and possible open heart surgery. With a husband facing two life-threatening medical problems simultaneously, his wife, Camilla, remembered the weeks that followed as "perhaps the most difficult of my life."[52]

In early October 1971, after General Conference, a heart catherization at LDS Hospital confirmed the aortic stenosis and also discovered a coronary artery occlusion. Dr. Cowan felt confident of his diagnosis. He considered that if Elder Kimball's heart condition precluded taking the risk of another laryngeal biopsy that he would seek opinions from radiotherapists about treating the larynx empirically with radiation. After three weeks of recuperation, the apostle was felt well enough to undergo another procedure. Elder Kimball returned to LDS Hospital on October 28 for another direct laryngoscopy and biopsy under local anesthesia by Dr. Cowan and his son. Dr. Cowan noted the procedure was "very difficult due to spasms of the larynx and trouble breathing when lying flat,"[53] no doubt from the heart disease with resultant pulmonary venous congestion. Biopsies were successfully obtained.

TOURING EUROPE, 1955

In two days Dr. Cowan's suspicions were confirmed. The specimens showed well differentiated squamous cell carcinoma.[54] A laryngotomogram showed "irregularity in the left subglottic region for approximately 1 cm with loss of normal angulation."[55] With this confirmed laryngeal carcinoma, most likely a new primary tumor, "surgery or nothing" were no longer the alternatives. Radiation therapy offered the best treatment option, due to Elder Kimball's medical condition, his advanced age, and his desire for voice preservation. Dr. Cowan had explained "all factors pro and con of cobalt."[51] Arrangements were made for radiation therapy at LDS Hospital, under the direction of Dr. Henry P. Plenk. Therapy lasted for six weeks, 24 total treatments. Elder Kimball experienced the usual side effects of radiation, sore and swollen throat, and worsening hoarseness which lasted for several months. The tumor showed marked regression. Just three months later, in March 1972, Dr. Cowan noted "much more mobility. . . . I see no active disease in larynx."[56]

In April 1972, at age 77, Elder Kimball underwent open heart surgery by Dr. Russell M. Nelson.[57] He had a slow but successful recuperation, and Dr. Cowan monitored his progress over the next year during monthly cancer checkups. Dr. Cowan's son, Leland B. Cowan, gradually took over the periodic reexaminations, though the elder Dr. Cowan came in occasionally to see his long-time patient, now President of the Church. Their last office visit together was in July 1975. Dr. Cowan passed away September 29, 1976, at the age of 82. His friend Dr. Hayes Martin died the next year, on December 25, 1977, at age 85.

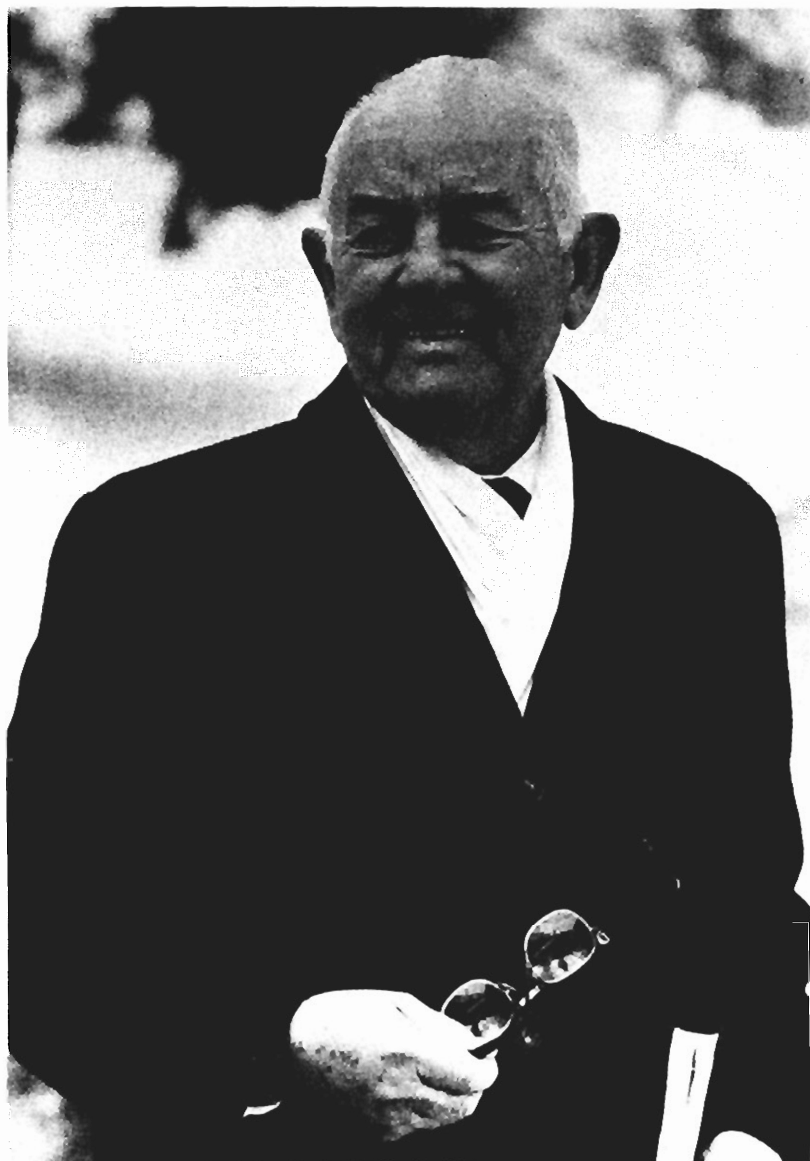
On January 27, 1979, Dr. Leland B. Cowan wrote to Dr. Henry Plenk, radiation therapist at LDS Hospital:

> I thought you would be interested in the follow-up on President Spencer Kimball. I have been seeing him at six month intervals for follow-up of his laryngocarcinoma. It is now approximately seven years since you treated him for this problem and he continues to do very well with no evidence of recurrent disease in the larynx or neck.[58]

DISCUSSION

The cause of laryngeal cancer in Spencer W. Kimball, a nonsmoker, cannot be determined exactly, although several contributing factors can be ascertained. A positive family history of cancer, as evidenced by his sister's death of cancer, may be related to the potential for dysplastic changes. Other associated factors in laryngeal cancer in nonsmokers have been recently elucidated. Chronic laryngeal irritation caused by gastroesophageal reflux has been shown to contribute to the development of laryngeal cancer, even in areas of the larynx far from the posterior commissure and arytenoids.[59] Reflux, which is a very common occurrence, also contributes to many nonneoplastic laryngeal inflammatory conditions.[60] There is no indication that Elder Kimball suffered from reflux. A state of chronic laryngeal irritation may also be due to constant vocal use or exposure to toxic fumes other than tobacco smoke. The cause of laryngeal cancer in Elder Kimball may well be related to persistent chronic laryngeal irritation associated with his frequent public speaking, combined with a familial predisposition toward the development of cancer.

Carcinoma-in-situ and early carcinoma of the larynx have received much attention by medical researchers because the tumor is slow growing and is often diagnosed early in its course when the chance for cure with preservation of laryngeal function is high. The indolent nature of carcinoma-in-situ of the larynx is well demonstrated by this case. Pathologists now feel that vocal-cord epithelium under influence of chronic irritation moves through a spectrum of microscopic changes. These are characterized by (1) hyperplasia (increase in cells) and keratosis (keratin formation), (2) keratosis with atypia and dysplasia (abnormal cell appearance and organization), (3) carcinoma-in-situ (early cancer confined to mucosal



and the United States. External radiation, interstitial implants, and even topical application of radioactive solutions were tried. During this period in the early 1920s, Dr. Martin and Dr. Cowan took residency training at Memorial Hospital in both radiation and surgical oncology. Dr. Martin remarked in his book that when he trained, patients were almost exclusively treated with radiation therapy for laryngeal cancer. He lamented that laryngeal cancer surgery, of more interest to him, was becoming obsolete.[27] Dr. Martin was an initial proponent of radiation therapy and his early professional career includes many publications on radiotherapy of head and neck tumors.[64]

During this early period, the biological effects of radiation on body tissues were poorly understood. This resulted in some dramatic clinical failures from excessive radiation doses to the structures of the neck.[27] After dealing with complications of skin slough, vascular blowout, laryngeal cartilage necrosis and airway obstruction after radiation, Dr. Martin practically abandoned its use in the treatment of laryngeal cancer from 1939–40 until his retirement.[63] At other institutions in the United States besides Memorial Hospital, and in Canada and Europe, radiation therapy developed into a separate discipline apart from surgery and radiology. More experience was gained in techniques that minimized the mucosal and skin reactions that led to complications. Further advances came in the 1940s and 1950s with the megavoltage cobalt unit, which has decreased radiation doses to the skin and subcutaneous tissues while delivering higher energy radiation to deeper structures.[63] The initial competition between radiotherapy and surgery gave way in the 1950s and 1960s to collaboration at centers where a team approach to patient care in treatment of head and neck cancer demonstrated improved results.[65,66] Advantages of radiotherapy include preservation of voice quality and avoidance of surgery in those with poor surgical risk. Radiation therapy is generally only used once, due to its scarring effect on normal tissues. Therefore, surgery and radiotherapy have become complementary treatment modalities in laryngeal cancer patients, who must be followed for life. Surgery may be recommended in younger patients so that radiation therapy is kept in reserve, if needed later in life.

In retrospect, it is apparent that Dr. Cowan's association with Dr. Hayes Martin was a major factor in the

lining), and (4) superficial microinvasion (breaking through mucosal lining into deeper tissues).[61] Current research suggests that severely dysplastic lesions, grade 2 in the above listing, often behave as grade 3 and 4 cancerous lesions and should be treated as such.[62] This suggests that the biopsies of Elder Kimball in 1969 that the pathologists struggled with interpreting would tend now to be interpreted as malignant. In Elder Kimball's case, the dysplastic lesion did progress to a squamous carcinoma as the research suggests. With present knowledge, such a lesion may be treated earlier in its course.

In the account of Spencer W. Kimball's illness, the opposition of Dr. Hayes Martin to the use of radiation therapy figures prominently. This is puzzling in view of the widespread knowledge that radiation therapy is effective in the treatment of laryngeal carcinoma. Some historical puzzle pieces must be put together. The first use of radiation therapy in cancer of the larynx was in 1919 in France.[63] As a promising new technique for treating a terrible disease, cancer, its use spread rapidly in Europe

surgical treatment of Spencer W. Kimball's laryngeal cancer in 1957. The Salt Lake physician was likely influenced by the approach of Dr. Martin to laryngeal cancer, which was well publicized in his frequent medical writings, when Dr. Cowan told Elder Kimball "surgery is better than radiation." Surgery was better than radiation in Dr. Martin's experience. It is quite possible that, had Spencer W. Kimball sought another opinion in 1957 at a medical center where radiation therapy was employed with improved results, he would have been offered it as treatment (and may have taken it to avoid "falling among cutthroats"). The other side of this picture is hypothetically intriguing. Had the apostle been treated with radiation therapy in 1957 and then developed a recurrence or new primary tumor, as he did, it would have been more difficult to treat with surgery, and radiotherapy would not likely have been possible to use again. The stage of the second tumor that Elder Kimball had in 1969–71 is not known, but from the description of impaired mobility of the cord remnant and subglottic extension, it was possibly at least T2 (based on current TMN tumor classification).[67] T2 recurrences after radiation therapy have been treated with partial laryngectomy in the last 20 years.[68] This has been considered the upper limit of tumor size amenable to partial laryngectomy, though in recent experience selected patients with radiation failure T3 lesions have been treated with partial laryngeal surgery.[69] The point to be made is that the operation performed by Dr. Martin in 1957 when Elder Kimball was 63, meant radiation therapy was available for use when he really needed it, at age 77, because his medical condition for surgery was poor.

The surgical technique used by Dr. Martin, laryngofissure and partial laryngectomy, was well known in its time. It created a large glottic defect that left patients hoarse, though Elder Kimball developed an acceptable voice following surgery. In the last 25 years, advances have come with development of laryngeal reconstruction techniques that improve voice quality after partial laryngeal surgery.[70,71] The surgical laser has become another tool for treatment of laryngeal disorders. In studies of the last 15 years, patients with severe dysplasia, carcinoma-in-situ and microinvasive laryngeal carcinoma have been treated with vocal cord stripping and endolaryngeal laser excision of affected tissue.[72,73] With frequent follow-up and restripping, this technique has been successful with advantages of maximal preservation of laryngeal tissue, avoidance of radiation, and minimal postoperative morbidity.

The medical history of Spencer W. Kimball provides an excellent case study in the development of modern medical treatment of laryngeal cancer. There are other lessons to be learned as well.

Far from destroying his effectiveness, we are able by hindsight to see that the unique quality of his voice may have made President Kimball more attentively listened to. And his own suffering and struggle through this and numerous other medical problems may have helped develop the compassion which characterized him. The Lord usually blesses our lives through the lives of others. It is easy to see that Spencer W. Kimball was blessed to overcome much adversity through the service of skillful and compassionate physicians. As the Lord's prophet and mouthpiece, his "small and piercing voice," preserved through the best medical care, became an instrument of the Lord to lead and bless His Church.[74]

Based on his own experience, as both a patient and a minister to the sick, President Kimball tried to put modern medicine in proper perspective: "We are grateful beyond expression for the great skill and accumulated knowledge and patience and understanding possessed by our physicians. But it . . . must be remembered that no physician can heal. He can only provide a satisfactory environment and situation so that the body may use its own God-given power of re-creation to build itself. Bones can be straightened, germs can be killed, sutures can close wounds, and skillful fingers can open and close bodies; but no man yet has found a way to actually heal."[75]

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