Sir William Hingston

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Sir William Hingston was one of Canada's most illustrious surgeons in the second half of the 19th century. Not only was he a very innovative surgeon but he was an excellent teacher and wrote many medical articles during a career that spanned over 50 years. Active as he was medically, he found time to serve a term as mayor of Montreal and was on the board of directors of various banks and companies. As recognition of his many talents, he was knighted by Queen Victoria in 1895. He died in 1907 at the age of 78 years.

Sir William Hingston a été un des plus illustres chirurgiens du Canada au cours de la deuxième moitié du XIX^{e} siècle. Chirurgien très novateur, il a aussi excellé comme enseignant et produit de nombreux articles médicaux au cours d'une carrière de plus de 50 ans. Même très occupé par la médecine, il a trouvé le temps de faire un mandat à la mairie de Montréal et de siéger au conseil d'administration de diverses banques et entreprises. En reconnaissance de ses nombreux talents, la Reine Victoria l'a fait chevalier en 1895. Il est mort en 1907, à l'âge de 78 ans.

Although probably only a handful of doctors today know anything about William Hingston (Fig. 1), he was one of the best known Canadian surgeons in the second half of the 19th century. His surgical career spanned over 50 years. He was an excellent teacher, and his publications were extensive. He was president of the College of Physicians and Surgeons of Quebec and of the Canadian Medical Association (of which he was a founding member). He was honorary president of the British Medical Association. Besides his active medical career, he found time to serve a term as mayor of Montreal and was on the board of directors of several companies. In honour of his activities, he was knighted by Queen Victoria. He was also appointed to the Canadian Senate.

William Hales Hingston was born in Huntington, Lower Canada, in 1829. After his primary education, which he received in Huntington, he entered the Sulpician College in Montreal. He obtained his MD degree from McGill University in 1851 and his LRCS from Edinburgh in 1852. Further postgraduate education was followed by a year spent attending clinics and lectures in famous medical centres, including Dublin, London, Paris, Berlin, Heidelberg and Vienna. (This was a common way to obtain more experience than McGill could offer, and for English-speaking students Edinburgh was often the choice at that time.) Dr. Hingston returned to Montreal, where in 1853 he was named to the staff of St. Patrick's Hospital. This hospital was actually on the grounds of and associated with the Hôtel Dieu Hospital. When St. Patrick's Hospital burned down in a fire, he was accepted onto the staff of the Hôtel Dieu.

His publications

Almost immediately, Dr. Hingston began to write articles. Two of these appeared in *The Medical Chronicle*, a journal that was published between 1853 and 1859. In one of them he criticized a Parisian professor who believed that an overdose of chloroform during anesthesia could be counteracted by electric shocks. Hingston presented such a case; he reported that the patient was resuscitated only by artificial respiration after an electric shock failed. He felt that had he given further shocks, the patient would have died. The second article described the best method for the release of contractures of larger joints such as the elbow or knee. It was the method practised

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by von Langenbeck (known to plastic surgeons as the one who first described the use of mucoperiosteal flaps to close cleft palates). Under chloroform anesthesia, the surgeon would slowly flex the joint. Considerable force might be needed. The physician did not attempt to obtain complete release in difficult cases but used splints to maintain the corrected position. The procedure could then be repeated once or twice to further release the contracture.[1]

Other early articles of Hingston's were case reports of interesting procedures. One of these was the removal of a tumour in the submaxillary area and another described the management of a patient with severe urethral stricture who eventually died of uremia.[2]

Hingston's case reports appeared in other journals such as the *British American Journal of Medicine and the Physical Sciences.* One concerned a patient who underwent resection of an infected elbow joint and had eventual recovery of joint function. A second described resection of a recurrent lip cancer that had spread to the mandible. The excision, meant to be curative, involved a wide area around the lip lesion, the anterior mandible and the floor of the mouth. Although there was some deformity after approximation of the tissues, the patient was able to eat and talk fairly well and disguised the deformity with a large "imperial," a style of beard popular in those days.[3]

His accomplishments

In 1868, Hingston became the first surgeon to resect a kidney. Although the patient died on the operating table after the resection, it was still a "first." However, because he did not report the case (probably because the patient died), credit for the first nephrectomy, done in 1869, went to Gustav Simon of Heidelberg. Dr. Hingston eventually published his case years later,[4] but the proof that he performed the very first case comes from operating-room reports, which became mandatory at Hôtel Dieu Hospital in 1867.

Dr. Hingston was among the first surgeons in Canada to perform a skin graft. In 1869, Reverdin, then a surgical intern, described the use of pinch skin grafts at a medical society meeting in Paris. His article was picked up by a British surgeon, who reported in the *British Medical Journal* his success

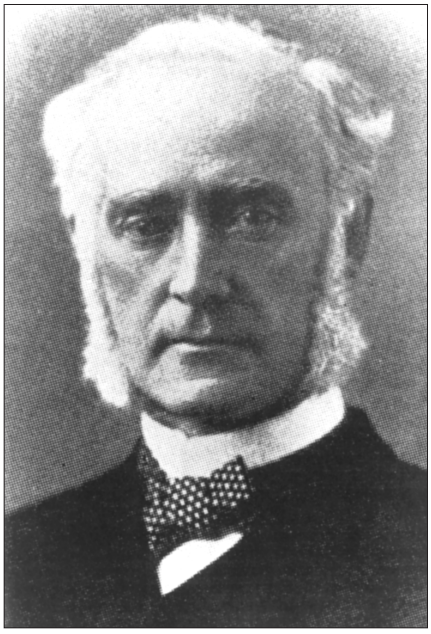

FIG. 1. Sir William Hingston, 1829 to 1907.

with these grafts in treating ulcers. This account was treated with suspicion by many, because so much had been written on methods to cure ulcers, none of which really worked.

Shortly after Hingston read this British report he saw two patients with chronic ulcers who he decided might benefit by the procedure (March 1871). The first patient was a 72-year-old man with a leg ulcer that had persisted for 23 years. Upon admission, the patient was noted to have a deep anterior leg ulcer measuring 10 × 8 cm. He was treated for a month with strict bed rest, leg elevation and compresses of carbolic acid (1 in 40 dilution). This treatment produced a smaller ulcer with clean granulation tissue. Three small pieces of skin, about the size of a grain of rice, were obtained from the leg above the ulcer. These grafts were placed in incisions made in the granulations, and the grafts were held in place by adhesive strips and a bandage. Within 1 week the grafts were rapidly increasing in size and within 3 weeks the ulcer was completely healed except for an area the size of a pea.

The second patient, who had had leg ulcers for 6 years, underwent grafting in the same way a day before the above case, and the ulcers healed in the same length of time. One month later, the ulcers were still healed. Hingston concluded that the graft size did not make a difference in survival and that no subcutaneous fat should be included. These principles we know to be true today. He also noted that in future cases he would probably use the method introduced by Mr. Fiddes of Aberdeen, in which a knife or scalpel was used to shave or scrape off "epidermic scales" (i.e., a split-thickness graft) to place on the granulation tissue.[5]

Several years earlier, Dr. Hingston had performed a flap closure of a nasal defect. The patient had a triangular defect of the left ala measuring 4 × 2½ "lines" (1 line = 2.1 mm). Hingston wanted to repair it with a distal flap from the dorsal aspect of the hand, but the patient felt he would be unable to maintain his hand in the raised position next to the nose while the flap healed. Instead, the surgical closure was performed by raising a cheek flap based superiorly, suturing it into the defect and directly closing the donor site. A postoperative follow-up several weeks later revealed full healing, with no distortion and minimal scarring.[6]

In 1870, a group of anglophone doctors founded a third school of medicine in Quebec (Laval and McGill were the other two). It was affiliated with Bishop's College in Lennoxville, Que. They invited Dr. Hingston to become the dean of the faculty as well as professor of surgery. But because most of his patients were Roman Catholic, and also perhaps because he preferred living in Montreal, he elected to stay on at the Hôtel Dieu Hospital.

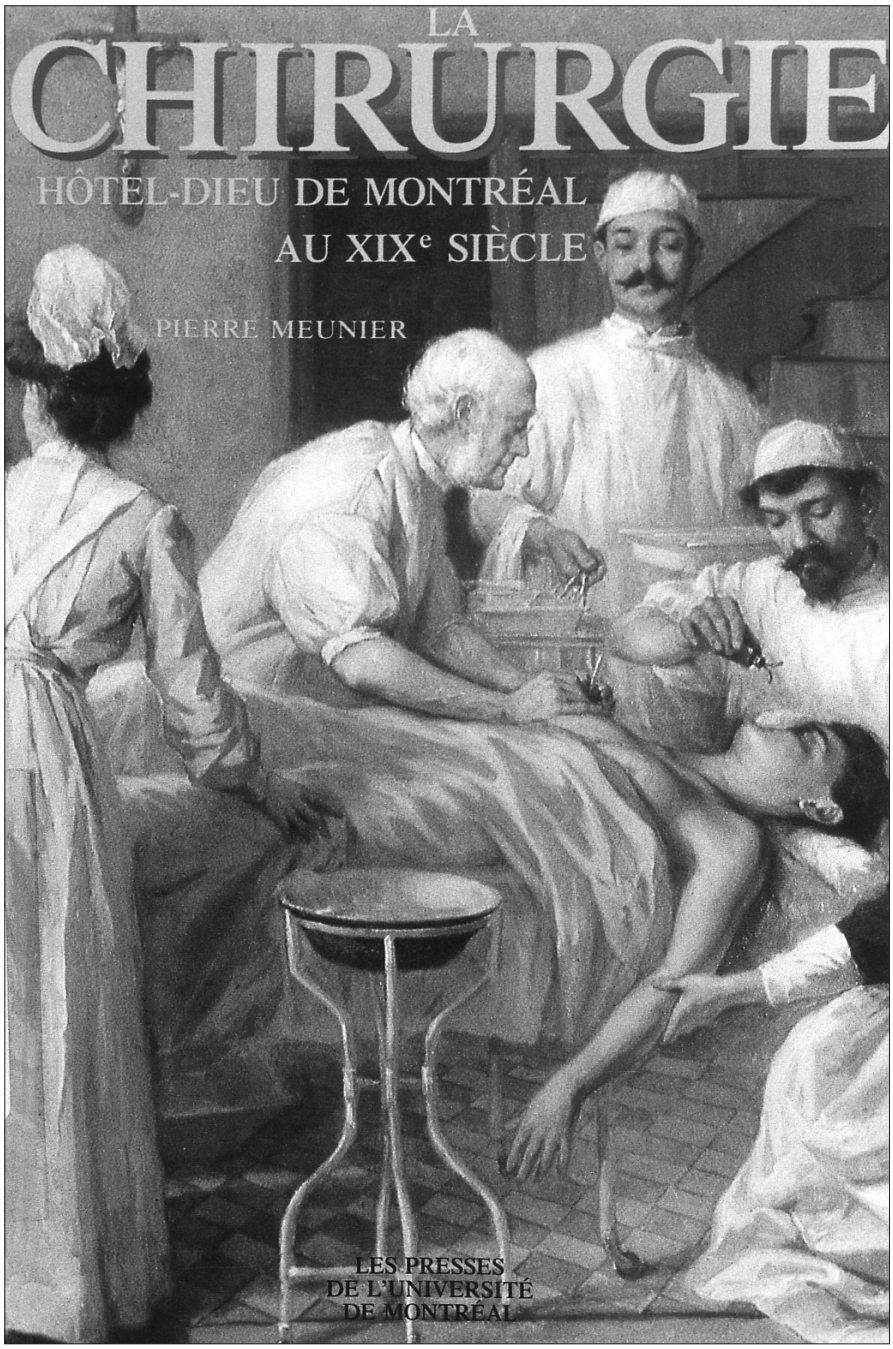

FIG. 2. Operating room at the Hôtel Dieu Hospital in the 19th century (reproduced from Meunier P. *La chirurgie à l'Hôtel-Dieu de Montréal au XIXe siècle*. Montreal: Presses de l'Université de Montréal, 1989).

Hingston was a versatile surgeon, as can be seen by some of the previous cases. He enjoyed a challenge, and one such challenge was presented to him in 1873. It involved a patient with a recurrent cancer of the floor of the mouth that involved a considerable portion of the inferior aspect of the tongue and the mandible. Movements of the tongue were painful, speech was very indistinct and swallowing was both difficult and painful. The patient blanched when he was told that resection would involve both the tongue and the mandible. The patient wanted only the mandible to be resected, but Hingston told him that this would not remove all of the cancer. The patient signed himself out of the hospital (probably to Hingston's relief), only to return 3 days later, prepared for the operation. Now it was Hingston's turn to be worried because the patient was 71 years old and in poor physical condition, and to Hingston's knowledge a double resection of the tongue *and* mandible had never been performed. However, he had the encouragement of his colleagues and two visiting doctors from London, who agreed that it was the only way to save the patient's life.

The operation was performed on Sept. 26, 1873, under chloroform anesthesia (Fig. 2). The resection included the mandible from near the left condyle to the right submental foramen, the floor of the mouth and most of the tongue. The soft tissues, lip and skin were then approximated. At first, the patient was fed by a stomach pump (the equivalent of our modern Levin tube). The sutures were removed on the 9th postoperative day, and the patient was discharged to the care of his family.

Four months later the patient returned for re-examination at Hingston's request. He was in good health and was able to eat and swallow with-

out difficulty. Although this case was published in the *Union Médicale du Canada*, Hingston never received credit by later medical historians for a "surgical first." Twenty years later, at a meeting of the Congress of the British Medical Association, Hingston again referred to his operation as a "first."[7]

Dr. Hingston loved to teach and was always happy to be surrounded by students. He would usually call three students at a time to come and examine the patient during teaching sessions and by questions and examinations have them help him "make" the diagnosis. He tried to train students to use their hands and their eyes to best advantage to obtain a proper diagnosis.

In one case, Hingston was required to use his ingenuity to the fullest. The patient was a young healthy man with a vascular tumour of the nasal airway. The procedure was started under chloroform anesthesia. After raising the entire nose as a flap and retracting it onto the right cheek, he used saws to cut through the bone to gain access to the tumour. When he began to resect the mass, the hemorrhage became so profuse that he was afraid the patient would asphyxiate on his own blood. He asked for four volunteers who were in the amphitheatre observing the procedure (probably medical students). These held the patient upside down so that his head touched the floor. Hingston completed the resection on his hands and knees. The patient survived with minimal scarring.[8]

Hingston was renowned not only in Canada. In 1888, US President Garfield was shot by an assassin. The bullet lodged in the abdomen. Hingston was one of a number of consultants called to the bedside for advice in management. The president died of his injury shortly after.[9]

Other responsibilities

Besides pursuing a busy surgical practice and publishing many reports, Hingston found time to assume other responsibilities. He was one of the early members of *L'Union Médicale*, a French medical journal. He was a founding member of the Canadian Medical Association in 1861 and of the Medico-Chirurgical Society of Montreal, which still exists today. In 1886, he served a term as president of the College of Physicians and Surgeons of Quebec and was president of the Canadian Medical Association from 1886 to 1889. His reputation extended overseas as well, for he served a term as vice-president of the British Association for the Advancement of Science and as honorary president of the British Medical Association. In 1907, he was named honorary president of the International Congress of Surgery held in Paris. He coauthored a reference handbook of the medical sciences in 1889.[10]

In the Montreal smallpox epidemic of 1885, during which over 3000 of the 157 000 population died of the disease, Dr. Hingston was chairman of the newly formed provincial board of health. Besides setting up smallpox "hospitals" and trying to improve the city's sanitation and decrease the spread of the disease, he was instrumental in instituting compulsory vaccination, using a special police force to drag unwilling citizens to be vaccinated.[11]

Hingston was elected mayor of Montreal for the term 1875/76. His inaugural speech on Mar. 8, 1875, concerned the public health of the city. He pointed out that the death rate in the city was between 35 and 42 per 1000 inhabitants. This was higher than any other large city in North America. He described the poor housing and sanitation of the lower classes and said that he would try to bring about an improvement in the sanitary conditions of the city and the health of its inhabitants. The problem of smallpox was discussed. Many francophone writers and the clergy of the Roman Catholic Church were against vaccination, and this showed up dramatically in the statistics. Of the 981 cases of death caused by smallpox the year before in Montreal, 953 of the patients were Roman Catholic. Only 27 Protestant anglophones died, because they were vaccinated almost without exception. (The population at that time was about 50% of each group.) Hingston also berated the city for its lack of planning (e.g., construction and housing) and vowed to improve this.

One of Hingston's lasting benefits to the city was the park on Mount Royal. He started the project by arranging for the city to expropriate the farms that extended onto the mountain and persuaded the city to hire Frederic Law Olmstead to come to Montreal to plan the park. (Olmstead was a famous US landscape architect who in his lifetime designed such parks as Central Park in New York, Prospect Park in Brooklyn, the area around Niagara Falls and the Chicago World Exposition of 1893.) It was he who told the Montreal city authorities to leave the mountain in its natural state rather than build amusement areas or buildings on it.

The winter of Hingston's term of office was a bad one for Montreal because of a recession. One day a crowd marched down to city hall to demand bread. The deputy mayor was getting ready to read the Riot Act to them. (This would allow the police to arrest the marchers or to fire upon them.) Hingston arrived on the scene, threw away the Riot Act and spoke to the crowd. He told them that it was not their fault that no jobs were available

and promised to help them. The crowd dispersed, except for a hundred or so who wanted to accompany him home to prevent him from being harmed. He declined their offer and drove off alone. True to his word, he got the city to hire extra men at 65 cents a day or $1.25 if they provided a horse. They were put to work in preparing the park on Mount Royal according to Olmstead's plans.[12]

Hingston was active on other fronts too. In 1884 he published a book, which was well received, on the climate of Canada and its relationship to life and health. Among the business organizations he served were the Montreal City and District Savings Bank (director from 1875 to 1907 and president from 1885 to 1907), the Montreal Street Railway Company (president) and the Montreal Safe Deposit Company (president).[13]

Honours

Among the honours accorded to Hingston were an honorary DCL degree from Bishop's College in Lennoxville, Que., and an LLD degree from Victoria University in Toronto. In 1859 he was elected a member of the Imperial Leopold Academy of Germany. In 1895, he was knighted (Knight Bachelor) by Queen Victoria. He ran as a Conservative candidate in 1895 in a by-election in Montreal but lost. In 1896, he was appointed to the Canadian Senate.[13]

Sir William continued to operate into the early years of the 20th century when he was well into his 70s. He died in 1907 at the age of 78 years.

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