Truman William Brophy (1848?1928) [1]

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Truman William Brophy developed a cleft palate surgical repair, later called the Brophy Operation, in the late nineteenth century US. The procedure improved facial aesthetics and speech in cleft palate patients. A cleft palate occurs during development when the palatal bones in the roof of the mouth don't completely fuse, leaving an opening, or cleft, in the upper lip and mouth. Brophy's cleft repair used compression inside and outside of the mouth to push the palatal bones into normal alignment shortly after birth. Brophy advocated surgery on newborns with cleft palates as soon as possible after birth, which met with opposition in the late nineteenth and early twentieth centuries when medical professionals did not operate on infants for non-life threatening conditions. However, Brophy's successful operations convinced many doctors to adopt his technique.

Truman William Brophy was born in Goodings Grove, Illinois, on 12 April 1848, to Amelia Cleveland and William Brophy, a gold miner. Born the second of six children, Brophy grew up throughout Illinois, in Goodings Grove, Elgin, and St. Charles. At the age of twelve, a dentist came to Brophy's farm for a home visit. According to his memoir, Brophy decided to become a dentist himself, and he took college preparatory courses at Elgin Academy in Elgin from 1863 to 1865.

In the winter of 1866, the Brophy family moved to Chicago, Illinois. On 1 April 1867, Brophy started his dental education under the apprenticeship of J. O. Farnsworth at his dental practice in Chicago. During the day, Brophy studied with Farnsworth, and at night he continued his college preparatory education at the Chicago Athanaeum and Dyhrenfurth's College, both located in Chicago. Upon Farnsworth's death in October 1870, Brophy purchased the dental practice, which burned down a year later in October 1871 in the Great Chicago Fire. Although at the time Illinois did not require people to have a degree to practice dentistry, in the fall of 1871 Brophy began to attend Pennsylvania Dental College in Philadelphia, Pennsylvania. In 1872, a year later, he graduated with a doctorate of dental surgery.
For a year after his graduation, Brophy visited clinics in Philadelphia and in New York City, New York, where he worked with dental surgeon Louis Sayre, and with other dentists and orthopedic surgeons. While visiting Sayre at his surgical clinic in New York, Brophy encountered many patients who suffered from a wide variety of acquired and congenital deformities, including cleft palates. During Brophy's visit at Sayre's clinic, a woman brought in her young son with a protruding upper jaw, complete cleft palate that extended from the back of the throat to the two front teeth, and a double cleft lip noted by two fissures in the upper lip that extended all the way up to the nose. While Sayre declared the child's deformity too extensive to treat, Brophy noticed that he could physically move the two upper jaw bones toward one another. According to Brophy, that visit led him later to develop a surgical treatment to correct cleft palate by moving the maxillary bones into correct alignment and immobilizing them.

Brophy returned to Chicago in 1873 and reestablished his dental practice. In May 1873 Brophy married Emma Jean Mason, with whom he would have four children: Jean, Florence, Truman, and Alberta. Between 1874 and 1875, Brophy joined with others to propose a dental department at Rush Medical College in Chicago. The attempt proved unsuccessful, with the joint committee members from Rush Medical College and the Chicago Dental Society opposed to the department. In the years after that initial attempt, Brophy remained involved in the Chicago dental community, serving as Illinois' representative to the American Dental Association in 1876, and presenting his first paper in 1877.

In 1878, Brophy enrolled in Rush Medical College in Chicago, graduating two years later with a doctorate in medicine, president of his class. After his graduation, he became chair of the dental pathology and surgery department at Rush Medical College. Brophy became president of the Chicago Dental Society in 1881, and again he advocated for the establishment of a college of dental surgery at Rush Medical College. The petition succeeded and the Chicago Dental Infirmary became the first dental school in Chicago on 12 March 1883. In 1884, the Dental Infirmary reorganized as the Chicago College of Dental Surgery, with Brophy appointed dean.

Brophy used his dental and medical training to create a treatment for cleft palates by moving and uniting the separated bones of the palate by using wire loops and plates. In 1886, he performed his first operation using the technique to repair the congenital cleft palate of an infant in front of his dental students at the Chicago College of Dental Surgery. By 1891, he had performed the palate surgery before the American Dental Association. Brophy passed metal wires through the maxillary bones of the upper jaw, and secured those metal wires to metal plates attached on the maxillary bones. By gradually twisting and securing the metal wires, Brophy closed the cleft of the palate, bringing the bones into a more normal anatomical alignment.

At the World's Columbian Dental Congress in Chicago in August 1893, Brophy presented his surgical procedure in a paper titled "Surgical Treatment of Palatal Defects." At the conference, Brophy advocated that the surgery be performed as soon as possible after birth. Brophy explained that performing the operation during infancy helped infants survive, because many infants born with extreme clefts died shortly after birth due to their inability to suckle during feeding. He also said that doctors could more easily manipulate the bones and tissues in neonates, compared to those in older babies and children, whose muscles had atrophied. At the World's Columbian Dental Congress meeting, surgeon Nicholas Senn labeled the
procedure as the Brophy Operation. A few years later, Brophy's wife died in 1899.

Brophy continued his surgical practice and his teaching responsibilities until 1906, when he decided to focus on oral surgery. Brophy married Esther W. Strawbridge on 31 March 1908. During World War I [3], Brophy spent time in hospitals in France performing plastic surgery and helped in the facial restoration of wounded soldiers. He was made Officer of the French Legion of Honor for his work.

In 1913, Brophy began writing his first book, *Oral surgery; A Treatise on Diseases, Injuries and Malformations of the Mouth and Associated Parts*, which examined the field of oral surgery and was published two years later. Brophy continued to serve as the dean of the Chicago College of Dental Surgery until 30 August 1920, after which he became dean emeritus and president of the faculty, a position he held for the rest of his life. In 1923, the college became the dental school of Loyola University in Chicago. That year Brophy published his second book, *Cleft Lip and Palate*. Brophy's book detailed his experiences with the management and surgical repairs of various malformations of the mouth, including the details of cleft repair.

Throughout his life, Brophy received international honors, including the Officer of the Legion of Honor, in France in 1924, and the Miller Memorial Prize from the Federation Dentaire Internationale (International Dental Federation) in 1925, one of the highest achievements in dentistry. He served as president of many professional organizations including the Fédération Dentaire Internationale, Illinois State Dental Society, Chicago Dental Society, Odontological Society of Chicago, and the National Association of Dental Faculties. Throughout Brophy's career he performed more than 10,000 cleft operations and taught his technique to hundreds of surgeons throughout the US.

Eventually, dentists replaced the Brophy Operation with techniques that caused fewer facial deformities. The treatment of clefts became increasingly based on the individual's defect and needs, as clefts vary in size and severity. Brophy died of pneumonia in Los Angeles, California, on 4 February 1928 at seventy-nine years of age.

**Sources**

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