



Motion pictures
and the College:

A history of
"LEARNING
BY SEEING"

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In an age of robotics and virtual reality surgery, the motion picture may seem like a fairly primitive technology. But little more than three-quarters of a century ago, when the first “Cinematographic Exhibition” was presented at the Clinical Congress of Surgeons of North America, it was a revolutionary technological advance that allowed for expansion of the fundamental educational concept of “learning by seeing,” a principle on which the Clinical Congresses were established. The American College of Surgeons played an early and important role in the production, promotion, cataloging, and distribution of medical motion pictures for use in surgical education in an effort to raise surgical standards.

Watch and learn

American College of Surgeons founder Franklin H. Martin, MD, FACS, believed that surgical education should be “democratized” beyond small elite groups and made accessible to all practicing surgeons, whether they were in urban academic settings or in rural private practices. The widespread acceptance of the journal *Surgery, Gynecology and Obstetrics*, originally published in 1905, convinced Dr. Martin that the profession preferred to receive information directly from practicing surgeons, and he further believed that it was far better to have a practicing surgeon demonstrate his work than to have him tell about it. Fellow Chicago surgeon John B. Murphy, MD, FACS, maintained that “Hearing papers and reading papers is one thing. Seeing men do things is another. We all know that no such benefit can be derived from hearing papers read as can be obtained from seeing the work done right before us.”¹

The first Clinical Congress of Surgeons of North America met November 7-19, 1910, in Chicago, IL, and consisted of operative or “wet” clinics held from 8:00 am to 5:00 pm each day at various hospitals throughout the city. At the second Clinical Congress, held in Philadelphia, PA, November 7-16, 1911, approximately 1,500 doctors enrolled, and fully as many more attended the clinics without registering.

By the third meeting in New York, NY, in 1912, it had become apparent that the Congress had outgrown its original plans. The “wet clinics” were limited by significant space and time constraints.

The surgical theaters could accommodate only a small number of observers, many of whom had a less-than-optimal view of the operative field. Scheduling of the appropriate “difficult case” to coincide with the dates of the Congress could also be problematic. Many of these logistic problems could be obviated with the use of motion pictures.

Introduction of film

Rudolph Matas, MD, FACS, of New Orleans, LA, in an address to the Southern Surgical and Gynecological Association in 1912, foretold the importance of “chronophotography” to surgical education by suggesting that “[n]ext to actually doing the thing, or seeing a skilled workman do it, is the seeing of it done in a series of motion pictures.” He proposed the inauguration of cinematographic courses that would illustrate “all the operations of surgery...as contributed by the most noted specialists in the surgical profession.”²

Medical motion pictures date to the 1890s and were initially used to illustrate such topics as abnormal gait, patient signs, and short medical and surgical topics. In 1898, Doyen of Paris and Messter of Berlin were among the first surgeons who allowed themselves to be filmed while operating.³ Films made before 1915 were generally only one to four minutes in length because of the technical limitations of early photographic equipment. Certain technological advances, such as 16 mm film and equipment (1923), the ability to add sound to film with the use of the Vitaphone (1927), and improvements in color filming with the arrival of Kodachrome (1935), made it possible to produce films of high fidelity and realism.⁴

In addition to the urging of Dr. Matas, several factors were important in fostering the involvement of the American College of Surgeons with motion pictures. One was Dr. Martin’s acquaintance in Washington during World War I with Will H. Hays, president of Motion Picture Producers and Distributors, Inc. Another occurred during a European trip in 1925, when Dr. Martin saw several medical motion pictures prepared by some of his Parisian colleagues.

Following this experience, Dr. Martin enlisted the support of Mr. Hays as well as the interest of George Eastman, head of the Eastman-Kodak Company, in the study of the use of medical mo-

tion pictures for the education of surgeons. Mr. Hays, in addressing the Regents at their meeting on Oct. 29, 1926, said, "We have done much work with religious groups.... Now we come to this, perhaps the greatest chance...medicine and surgery.... There is certainly as much value in helping to save lives as there is value in helping to save souls.... We want to come in with you now, to work together with a little contribution by us of facilities and motion picture skill. I am sure...you will

find a surprising amount of good that can be accomplished in your great science." The plan received the unanimous and enthusiastic support of both the Regents and the general fellowship, and a Board on Medical Motion Pictures was appointed, chaired by J. Bentley Squier, MD, FACS, of New York.

In 1927, the American College of Surgeons entered into an agreement with the Eastman-Kodak Company whereby the College would review and

Figure 1



Filming a surgical procedure in San Francisco, 1951.

evaluate films with regard to the suitability of their subject matter, satisfaction of medical ethics, and adequacy of demonstration of technique; Eastman-Kodak would then assess the photographic qualities. To accomplish this work, advisory committees were appointed in 19 defined areas of interest to solicit films from leading authorities in each field.

In addition to producing films, the College reviewed and cataloged a large number of exist-

ing films on a variety of special subjects. The first film produced under this agreement, made by Allen B. Kanavel, MD, FACS, in association with Sumner L. Koch, MD, FACS, was entitled *Diagnosis and Treatment of Infections of the Hand* and was shown at the 1927 Clinical Congress in Detroit, MI. The names of the authors were omitted when the film was first presented, as their association with the films was considered unduly commercial. In 1929 films with

Figure 2



1949 Congress attendees watching telecast operations at the Stevens Hotel in Chicago.

sound were used, and by 1930 it was acceptable to include the name of the author.⁵

Before the introduction of videotape, filming an operation could be cumbersome, time-consuming, and even hazardous. Providing an ideal vantage point for the photographer and camera required significant alterations to the operating room. (see Figure 1, p. 18) The use of a nonflammable anesthetic agent, such as sodium Pentothal or nitrous oxide, was strongly recommended because the in-

tensity of the lighting required for filming carried with it the possibility of explosion secondary to static electricity. Once the procedure was filmed, it could take as long as 14-16 weeks to finish the original and deliver a copy. Each foot of film involved the making of 40 frames of individual pictures and the typical 15-minute presentation called for the use of 400 or more feet.⁶

Mr. Hays and Mr. Eastman were both aware that the public relations value of making medical mo-

Figure 3



A Ciné Clinic in 1953 on the subject of intestinal anastomosis (lecturer unknown).

tion pictures significantly outweighed any small financial gain from the sale of film and filmmaking equipment generated by the program. However, following the stock market crash of 1929, which had a significant effect on Eastman-Kodak, return on investment became an important factor for consideration. Mr. Eastman, who was noted throughout his career for philanthropic efforts, was petitioned by Dr. Martin on several occasions to continue his support, but Mr. Eastman died sud-

denly in 1932, and so too did his company's relationship with the College.

Independent filmmaking

When the partnership with Eastman-Kodak ended, the College assumed the administration of the Motion Picture Program, with Eleanor K. Grimm, Secretary to the College since its beginning, as coordinator. A concerted effort was

Figure 4



Crowd viewing a medical motion picture session at the 1958 Clinical Congress, Chicago.

made to encourage the independent production of films, which were reviewed in the central office in Chicago, and those meeting ACS standards were approved and cataloged for distribution on request.

The first list of approved films was prepared in 1934 and published in the 1935 *Yearbook*. By 1937 the list had expanded to include 250 films, 24 of which were made for a general audience, including one entitled "That Man May Live," documenting advances in medical care through animal research.⁷ Throughout the 1930s, the number of motion pictures shown at the Clinical Congress steadily increased, while the number of "wet clinics" correspondingly declined. (The last time "wet clinics" were presented at hospitals was at the 1952 Congress in New York.)

Outreach

In the early 1940s, in an effort to further "democratize" medical education, the College sent 123 reels of film covering 72 medical and public health subjects to the Division of Cultural Relations, U.S. Department of State, for presentation in countries throughout Latin America. More than 100 mobile film units in sound film trucks owned by commercial firms were used to present these films to an estimated one million people, many in remote areas. This program was expanded in 1942 to include South Africa, Syria, Turkey, Australia, England, Iran, and other countries.

Throughout World War II, the Medical Motion Picture Program continued its important cooperative role with the U.S. Department of State. The films *White Battalions* and *R.N.* were shown to an estimated half-million high school and college students to stimulate recruitment into the U.S. Cadet Nurse Corps. In addition, 20 scientific films and 20 dealing with general health topics were distributed to occupied and liberated countries where medical education had been interrupted by the war.⁸ Briefly supported by grants from the Ethicon Suture Division of Johnson & Johnson in the early postwar years, the College expanded its Motion Picture Program under Miss Grimm's direction. A formal Motion Picture Department was established and a Film Library was started.

Television was first used to demonstrate a surgical procedure at the Johns Hopkins Hospital in February of 1947. At the Clinical Congress in New York, held in September of the same year, plans were developed by the Committee on Arrangements along with the Radio Corporation of America and Johnson & Johnson Research Foundation to telecast operations from the New York Hospital. Although favorably received, the size of the early television screens made for difficult viewing and the problem of scheduling cases remained (see Figure 2, p. 19). Televised sessions were discontinued after 1975.


1950 was a decisive year in the history of the Medical Motion Picture Program due in large part to the appointment by the Regents of Hilger Perry Jenkins, MD, FACS, as chairman of the Medical Motion Picture Committee, a position he held until 1966. The son of an architectural designer, Dr. Jenkins was a member of the surgical faculties of both the University of Illinois, Champaign, and the University of Chicago (IL), and brought to his career an innate artistic ability, a highly creative personality, and an intense interest in the use of audiovisual methods of teaching surgery. Dr. Jenkins probably contributed more than any other individual to the College's Motion Picture Program. In addition to his administrative efforts as committee chair, he produced a "Ciné Survey" of surgery of the stomach and duodenum that included at least 20 films, which were shown an estimated 10,000 times.⁹

Ciné Clinics

Partly in response to complaints by Fellows in New York and Los Angeles, CA, in 1948 and 1949 regarding crowded conditions and the inability to view desired films, an innovation called the "Ciné Clinic" program was included in the Clinical Congress for 1950. This effort was a collaborative one between the College and Davis & Geck, a subsidiary of the American Cyanamid Company. This program consisted of a series of comprehensive talks on specific surgical problems, each illustrated by specially prepared and edited color motion pictures demonstrating major points of the technique employed. The operating surgeon discussed the procedure per-

formed, illustrating his or her lecture with highlights of the details of the operation (see Figure 3, p. 20). This new type of program, while retaining the important features of the surgical clinic, solved major spatial and temporal problems by permitting the demonstration to a large group of surgeons those procedures that were difficult or impossible to schedule electively (see Figure 4, p. 21).

The program was also a financial success for Davis & Geck, who took over the film library in 1972, assuming production and distribution of the Ciné Clinic films.¹⁰ The educational library of the American College of Surgeons is presently managed by Cine-Med, Inc., and, in addition to video programs, offers software and CD-ROM programs in an effort to expand its educational service. The Committee on Video-Based Education (formerly the Committee on Medical Motion Pictures) continues to review all subjects offered in the library.

In a 1931 address to the Fellows of the American College of Surgeons, Mr. Hays stated, "To possess the motion picture and fail to develop its maximum use in science and education, is as unthinkable as to have the printing press and to publish novels only."¹¹ Early appreciation of the value of this new technology as an educational tool by leaders of the American College of Surgeons as well as the motion picture industry has led to a long and rewarding history of "learning by seeing" that continues to the present. 

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