CULTURE AND MEDICINE

Self-surgery in individuals with medical education: a review of six cases

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ABSTRACT

Self-surgery constitutes a very infrequent modality of health self-care. The aim of this article was to present the cases of six personalities with medical training who performed eight self-surgeries between the 19th and 20th centuries. In the cases in which it was possible, additional information of interest about them was offered. Self-surgery in people with medical education is always an extraordinary achievement, generally performed by young individuals motivated by scientific curiosity or by the survival necessity when there is no accessibility to health services. A review of the national and international multilingual bibliography on this subject and on the history of medicine was carried out. The bibliographic search included printed and digital literature consisting of books and biomedical journals, newspapers, encyclopedias and websites.
Key words: self-surgery; self-amputation; self-assistance; self-appendectomy; self-experimentation

RESUMEN

La autocirugía constituye una modalidad de autoasistencia sanitaria muy poco frecuente. En el presente artículo se tuvo como objetivo exponer los casos de seis personalidades con instrucción médica que se efectuaron ocho autocirugías entre los siglos XIX y XX. En los casos en los que fue posible se ofreció información adicional de interés sobre ellos. La autocirugía en personal con instrucción médica constituye siempre una hazaña extraordinaria, generalmente consumada por individuos jóvenes motivados por la curiosidad científica o por la necesidad de supervivencia cuando no hay accesibilidad a servicios de salud. Se realizó una revisión de la bibliografía nacional e internacional multilingüe sobre esta temática y sobre historia de la Medicina. La búsqueda bibliográfica comprendió literatura

impresa y digital consistente en libros y revistas biomédicas, periódicos, enciclopedias y sitios web.

Palabras clave: autocirugía; autoamputación; autoasistencia; autoapendicectomía; autoexperimentación

INTRODUCTION

Since the origins of mankind, when neither science nor medicine existed, man had to help, initially instinctively, other men and himself in the solution of health conditions. With the passing of the centuries and the training of individuals in certain arts and crafts related to health, each time supported by new knowledge, until reaching the high level of specialization that Medicine and related sciences present today, it is logical to think that the actions of self-help in health have decreased; however, it is also difficult to state it categorically because something as frequent as self-medication constitutes in itself a form of self-help.

The case of surgical self-assistance deserves particular attention because it is a much less frequent phenomenon. This is due, in a general sense, to the fact that in surgical care some degree of tissue injury and pain is generated in order to solve the problem, besides the knowledge of anatomy and surgical techniques required is not negligible.

In the present article we intend to present the cases of six personalities with medical training who performed auto-surgeries.

A review of the national and international multilingual bibliography on this subject and on the history of medicine was carried out. The bibliographic search included printed and digital literature consisting of biomedical books and journals, newspapers, encyclopedias and websites.

No special attention is paid to this type of events in the basic literature or in the literature for the training of health personnel; their knowledge contributes to the acquisition of greater culture.

DEVELOPMENT

The cases of auto-surgeries performed by six personalities who performed these procedures in the 19th and 20th centuries were detailed. Where possible, additional information of interest was provided.

Case 1. M. Clever Maldigny

Military surgeon serving in the French royal guard who performed a lithotomy in 1824, at the age of 24, with the aid of a mirror. Maldigny had a history of five other operations for urinary lithiasis at the ages of 6, 8, 18, 20 and 22. He also had negative experiences with these procedures which, in addition to being ineffective in permanently eradicating his stones, were associated with multiple adverse events including cystitis, peritonitis, significant bleeding, massive hematemesis and delirium. He made an incision with a long knife through the scars he had from previous surgeries and searched until he found a stone in the

neck of the bladder; the stone removed in the operation was described as "the size of a walnut". He recovered from this surgery after three weeks.[1]

Case 2. Joaquín María Albarrán Domínguez (Sagua la Grande, Cuba, May 9th, 1860-Arcachon, France, January 17th, 1912).
A talented, tenacious and eager for knowledge man who studied medicine twice; first in Spain, where he was graduated from the Faculty of Medicine of Barcelona in 1877 and, the following year, he obtained the degree of Doctor of Medicine at the Central University of Madrid, and then in France, where he was graduated as Doctor of Medicine in 1889. Albarrán carried out most of his medical activity in France; he was the most famous urologist of his time and was a professor at the University of Paris and a surgeon at Necker Hospital. He stood out as a researcher and innovator in his specialty. At the height of his teaching career, he was unanimously elected Guyon's successor as holder of the Department of urinary tract at the Faculty of Medicine from Paris in 1906. The same year of his death he had been nominated for the Nobel Prize in Physiology and Medicine.[2,3]
Albarrán was a member of prestigious scientific institutions and received valuable distinctions and awards. In 1907 the French Government honored him with the status of Officer of the Legion of Honor. On three occasions he was awarded the Godard Prize of the French Academy of Medicine and also received the Tremblay Prize. He was president of the First International Congress of Urology in 1908.[2]
In 1885, at the age of 24, during his time as a boarding school student in France, while caring for a child with diphtheria, he caught the disease when he aspirated the obstructed tracheostomy tube with his mouth; he saved the child from asphyxia and contracted the disease. He was on duty one Sunday in March when he felt ill and, with no medical personal to assist him, he requested the help of two Sisters of Charity and a nurse (who held a mirror for him) and, with the minimum of instruments necessary, he opened the trachea and then inserted the cannula and performed his own tracheostomy. He then closed the wound and completed his self-surgery.[2,3,4]

Case 3. M. Alexandre Fzaicou
In 1909 this Romanian surgeon, who at the age of 26 was diagnosed with a left inguinal hernia which he described as "the size of a hen's egg", in an anesthetic procedure that lasted approximately 25 minutes, in which he used a mirror, local anesthesia was applied in multiple locations.[1] Regarding the application of anesthesia in particular, it has also been suggested that Fzaicou had a colleague perform spinal anesthesia on him to perform his self-surgery.[5] For approximately one hour he performed the surgical procedure in a seated position. Immediately after surgery he reported adverse events such as insomnia, headache and epigastralgia, which persisted for about a week. He returned to work twelve days after the procedure.[1]
Fzaicou, in performing his herniorrhaphy, felt that physicians should be prepared to undergo treatments that they recommend to others in similar circumstances.[5]

Case 4. Evan O'Neill Kane (Pennsylvania, U.S.A., April 6th, 1861-Pennsylvania, U.S.A., April 1st, 1932).

Kane was an American physician and surgeon who, from the 1880s through the early 1930s, served as Chief of Surgery at Kane Summit Hospital in Kane, Pennsylvania. His medical and managerial activities were primarily directed toward occupational health and trauma surgery related to railroad workers. Kane was also an originator who published several innovations in surgical procedures and equipment, including asbestos dressings, MICA windows for brain surgery, multisite hypodermoclysis an improvement consisting of a larger opening in the Murphy button (a device that was commonly used for intestinal anastomosis), the use of music with a phonograph in the operating room prior to anesthetizing the patient, the use of an acetylene lamp placed over the surgeons' head in operations in the field at night, among others.[6]

Kane has an interesting history when it comes to self-surgery. In 1919 he self-amputated one of his own fingers that had become infected;[6] however, this surgery is not as well known as the two that followed.

On February 15th, 1921, at the age of 59, he performed an autoappendectomy. While in the operating room waiting for his operation to begin, Kane decided to attempt to remove his own appendix. As his team prepared for the surgery, he announced that he would perform the surgery himself. Because he was the Chief of Surgery the staff obeyed, but reluctantly. Kane propped himself up with pillows to get a good view of his abdomen while a nurse held his head. She injected local anesthetic into his abdominal wall and then quickly made the incision, found the swollen appendix and removed it. He performed the operation with the help of mirrors that allowed him to see the working area. The entire procedure took 30 minutes. Kane was well enough to go home the next day and two weeks later he was operating on other patients. He did this to experiment with the procedure from the patient's perspective, while also wanting to get a better idea of how to optimize the use of local anesthesia and ensure that the patient could tolerate the procedure. He believed that ether (the usual general anesthetic of the time) was used too often and was more dangerous than local anesthetics.[1,6]

Finally, in 1932, at the age of 70, he underwent surgery again. On that occasion an inguinal hernia was repaired under local anesthesia. The hernia had been caused by a horseback riding accident six years earlier. The operation was performed at Summit Hospital in Kane, with the press, including a photographer, in attendance. The operation lasted one hour and 55 minutes. Kane was back in the operating room working 36 hours later.[1,6]

Case 5. Werner Theodor Otto Forssmann (Berlin, Germany, August 29th, 1904-Schopfheim, Germany, June 1st, 1979).

Forssmann was a medical doctor who was graduated from the University of Berlin in 1929. From 1932 to 1945 he was a member of the National Socialist Party. During World War II, he served as a medical officer and attained the rank of senior medical surgeon in the German Army until he was captured and taken to an American prisoner-of-war camp. After his release in 1945 he worked as a lumberjack and practiced as a physician in the Black Forest with his wife. In 1950

he began practice as a urologist in Bad Kreuznach. In 1954 he was honored with the Leibniz Medal, awarded by the German Academy of Sciences. In 1956 he was awarded, together with André Cournand from France and Dickinson W. Richards from the USA, the Nobel Prize in Physiology and Medicine for their work on the development of cardiac catheterization. From 1958 he was appointed Head of the Division of Surgery at the Evangelical Hospital in Düssedldorf. Shortly thereafter he was appointed Professor of Surgery and Urology at the Johannes Gutenberg University in Mainz. In 1961 the National University of Cordoba in Argentina honored him as Honorary Professor. From 1962 he was an executive member of the German Surgical Society. He was also a member of the American College of Chest Surgery and Honorary Member of the Swedish Society of Cardiology, the German Society of Urology and the German Childhood Association. He is considered the father of cardiac catheterization.[7,8,9,10] Precisely, in relation to cardiac catheterization, the self-surgery performed by Forssmann was highlighted. This event in the history of medicine was, at the same time, a self-experiment that marked the life of the young doctor at the age of 25.

In 1929, at the Auguste-Viktoria Hospital in Eberswalde (near Berlin), Forssmann, who had studied catheterization in the hearts of horses and other animals, was looking for a safe way to reach the human heart for diagnostic and therapeutic purposes. He then planned the intervention he intended to perform and presented the proposal to the chief surgeon, who refused to approve experimental surgery on his patients. He then suggested trying catheterization on himself, but the chief, concerned for his safety, again refused. Forssmann then broached the subject with Gerda Ditzen, the operating room nurse in charge of sterile supplies at the hospital, until he persuaded her to help him. She assured him of support and even offered to be catheterized. Although he had no intention of allowing her to be the experimental subject, he pretended to agree.[1]

The nurse prepared the equipment and then extended her arm for Forssmann to insert the catheter, but he insisted on strapping her to the operating table and gave her as an excuse that patients could collapse with the administration of the local anesthetic novocaine. He secured her legs and arms and pushed the tray with the instruments behind her head so that she could not see what he was doing. He anesthetized his own left antecubital area, made an incision and isolated the vein to introduce and advance a ureteral catheter about 30 cm into it. He then loosened the straps around the legs and arms of the nurse, who was furious at having been tricked; nevertheless, she accompanied him to the X-ray Department where, under the guidance of a fluoroscope, he discovered that the catheter had reached the head of the humerus, so he advanced it further (to 65 cm), until the tip was in the right atrium. Once the tube had reached its destination, the technician took the X-ray image before removing it.[1,7,8,9,10,11]

Case 6. Leonid Ivánovich Rogozov (Siberia, Union of Soviet Socialist Republics, March 14, 1934-St. Petersburg, Russia, September 21, 2000).

Rogozov was a physician who was graduated in 1959 from the Pediatric Medical Institute in Leningrad (now St. Petersburg). That year he started clinical training to specialize in Surgery, but in September 1960 he interrupted it to join the sixth

Soviet Antarctic Expedition as a physician. Until October 1962 he worked in Antarctica; he was part of a research team that established the Novolazarevskaya base in January 1961. In 1962 Rogozov returned to Leningrad and resumed studies. In September 1966 he obtained his doctorate with the thesis "Resection of the esophagus for the treatment of esophageal cancer". He worked as a physician in several hospitals in that city and from 1986 to 2000 he served as Head of the Department of Surgery of the Research Institute of tuberculous pneumology. He was distinguished with the Order of the Red Banner of Labor.[12]

It was during his service in Antarctica that Rogozov, at the age of 27, found himself in a critical situation in which he had to undergo surgical treatment. On April 29th, 1961 he began with asthenia, nausea and pain in the upper hemiabdomen that moved to the right lower quadrant, his body temperature was 37.5°C; he had acute appendicitis. Available conservative treatment (antibiotics and local cooling) was applied, but his general condition the next day worsened, body temperature increased, vomiting became more frequent and pain more intense. Rogozov was the only doctor at the base and the severe Antarctic climatic conditions prevented his evacuation to another base or to be assisted by a colleague from another station, so he had no choice but to try to perform the appendectomy himself.[1,12,13,14]

After completing the preoperative organizational aspects, including orientation on the treatment to be applied by the three colleagues he had selected to assist him if he lost consciousness, Rogozov explained the procedure he would perform. Thus the meteorologist was in charge of the instrumentation, the mechanic was in charge of holding the mirror and adjusting the lighting with the table lamp, and the station manager was on standby (in case one of the other two suffered a loss of consciousness). He chose a semi-sitting position, with his right hip slightly elevated and the lower half of his body elevated at a 30° angle. He chose not to wear gloves so as not to affect his sense of touch, which would be essential to guide him during the procedure. Thus, on May 1, 1961, at approximately 2:00 a.m. local time, he injected himself with local anesthesia and made a 10 to 12 cm incision. After 30 to 40 minutes Rogozov began taking short breaks (20 to 25 seconds) every four to five minutes due to general weakness and vertigo. Finally, he found and removed the appendix, which was severely affected. He applied antibiotics to the peritoneal cavity and closed the wound. The operation lasted one hour and 45 minutes. Seven days after the operation the stitches were removed and within two weeks he was able to resume his normal activities.[1,12,13]

CONCLUSIONS

Self-surgery in medically trained personnel is always an extraordinary feat, generally performed by young individuals motivated by scientific curiosity or the need for survival when health services are not available.

LIMITATIONS

The present work has limitations due to the lack of accessibility to the original documents in which the events presented here were detailed, so errors may have been made when using as sources of information several works in which the events referred to were taken up again, in some cases with information that did not coincide in certain aspects. In other cases it is possible the appearance of inaccuracies when interpreting the content of bibliographic sources in other languages. Also, some of the ages at which the subjects intervened themselves are approximate, since the exact dates of some procedures are not available.

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CONFLICT OF INTEREST

The authors declare that they have no conflict of interest.