

HISTORY OF ONCOLOGY

Hallmarks in the evolution of gynaecological cancer surgery: the famous pioneers

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Summary

At the beginning of the 19th century, gynaecological cancer, mainly cancer of the uterus and cervix was a dreadful, incurable affection. However, the popularization of the three fundamentals in surgery, anesthesia, asepsis and haemostasis, ushered the golden age of operative gynaecology. During that period distinguished surgeons/gynaecologists such as Friedrich Benjamin Osiander (1759-1822), Elias

von Siebold (1775-1828) and Joseph-Claude-Anthelme Récamier (1774-1852) contributed to the development of the operative techniques, providing a therapeutic solution in gynaecological cancer.

Key words: *history of gynecologic oncology, Friedrich Benjamin Osiander, Joseph-Claude-Anthelme Récamier*

Introduction

Nothing in the entire history of surgery was more dramatic than the evolution of gynaecological surgery which took place during the 19th century. For more than two thousand years, the treatment of the so called “women diseases” had remained medical and in less than half a century it became surgical and spectacular. Two factors, at the beginning of the 19th century, contributed to the evolution of gynaecological surgery: the advent of pathology and the improvement in clinical teaching. Barbers-surgeons became educated medical practitioners, recognized and highly esteemed by their colleagues and the society after attending, in medical schools, the lessons of inter-

nal medicine, anatomy and pathology. Moreover, the evolution of anesthesia, antisepsis and haemostasis, introduced during that period, contributed in the advent surgery [1].

While waiting for the evolution of surgery, gynaecologists were performing several operations such as the removal of polyps, the excision of hypertrophied clitoris and the incision of the imperforate hymen. The more daring were undertaking, with occasional success, cervical amputation or vaginal hysterectomy for malignancy, abdominal hysterectomy for fibroids, amputation of inverted uterus and drainage of pelvic abscess [1].

The surgery of carcinomatous cervix: a challenging itinerary

The operation which was performed by the more brave surgeons at the beginning of the 19th century was the excision of the carcinomatous cervix. In 1801, the professor of Obstetrics at the University of Göttingen, Friedrich Benjamin Osiander (1759-1822; Photo 1) performed the first excision of the vaginal portion of the cervix. Between 1801 and 1808 he carried out eight operations of this kind with success and he managed also to easily restrain the subsequent hemorrhage [2]. In the following years, several surgeons cited his method mentioning that it was the only worthy treatment in cases of cervical malignancy [3]. In 1813, Johann Rust (1775-1840), chief surgeon at the Allgemeines Krankenhaus in Vienna, repeated Osiander's operation followed by the Danish surgeons F. X. G. von Plöderl and H. M. W. Klingberg (1774-1835) [3]. The Parisian school of medicine adopted Osiander's operations and the skillful Guillaume Dupuytren (1777-1835) performed the operation twenty times with success between 1810 and 1815 [4]. In his turn, Joseph-Claude-Anthelme Récamier (1774-1856; Photo 2) reported several cases of cervical malignancy treated with excision of the ectocervix during 1815-1828 followed by the successful surgical ap-

proaches of Jean-Jacques Cazenave (1799-1877), and Antoine Léon Duges (1797-1838) [3].

In the United States, the first excision of a cervical malignancy was performed by John Collins Warren (1778-1856) but the patient died as a result of intraoperative complications [1] while few years later, in 1829, John B. Strachan of Virginia excised a "scirrhus" (malignant) cervix and the patient survived [5]. In England, during that period, Sir James-Young Simpson (1811-1870) reported a case of amputation of cervical neck emphasizing also the pathological findings of the excised part [6].

However, it is worth mentioning that even if the patient was surviving from the operation, death was occurring in the following months due to local or distant metastasis. Several of the successful reported operations were performed in patients which had non-malignant lesions, a view reflected in Frédéric Duparcque's (1788-1879) work on "Theory and practice of organic, simple and cancerous alterations of the womb" (*Traité théorique et pratique sur les alterations organiques simples et cancéreuses de la matrice*) published in 1835 [7]. As an example, Duparcque describes a case of cervical amputation carried out by Dupuytren in 1819 in a young female patient suffering from "fungosities" in the cervical region. The operation was followed by a severe haemor-

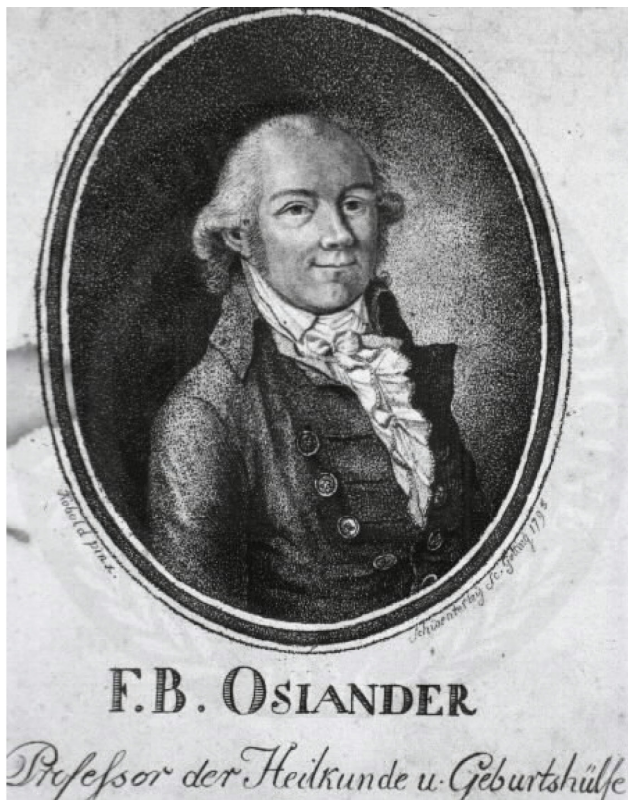


Photo 1. The pioneer obstetrician and cervical cancer surgeon Friedrich Benjamin Osiander (1759-1822).

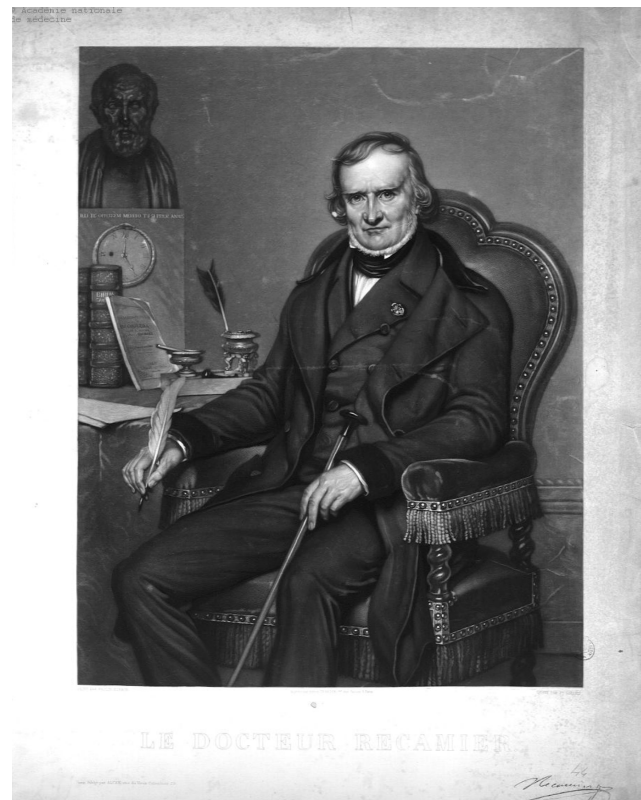


Photo 2. Joseph-Claude-Anthelme Récamier (1774-1856), known for the first successful vaginal hysterectomy.

rhage which could not be controlled by lint packing, and persisted until the surgeon introduced a wine glass filled with lint into the vagina. The glass was serving as a tampon and it was kept in place by a T binder. The first postoperative day, the patient experienced severe pain and the binder was loosened. To control pain she received the famous leeches' treatment. Leeches were applied in the lower abdominal area and bloodletting, tepid baths and cataplasms were also administered. The glass was removed from the vagina in the third postoperative day and a week later the area was cauterized with nitrate of mercury. The patient was re-evaluated eight years after the operation and she was pronounced cured [1,7]. Judging from the fact that she didn't have a relapse and the description of "fungosities" in the cervical region we may assume that she was suffering either from a HPV infection or from cervical polyps. In 1852, the professor of surgery Alfred Velpeau (1795-1867) admitted that he was not always certain of his diagnosis of cancer, despite the numerous operations he carried out [3]. By 1853 there was a considerable controversy over the excision of the cervix due to intra and postoperative complications including mainly severe haemorrhage and infections, making the physician John Balbirnie (1810-1895) to state: "It is a fundamental principle in medicine that a surgical operation for the cure of a disease is, in all cases, to be the last resource – only to be decided on when every other means have failed. It is even indicated in some cases where we cannot absolutely expect a permanent cure, but where we may hope, at least, to arrest the progress of disease...prolonging the existence of the patient" [8]. In his turn, Henry Hollingsworth Smith (1815-1890), professor of surgery in the University of Philadelphia questioned the cervical amputation for malignancy, advising against the operation as he believed that few experienced surgeons could perform it [1]. Smith visited the department of the famous surgeon and gynaecologist Jacques Lisfranc (1790-1847) in Paris and he attended several operations including two cases of cervical cancer dying of haemorrhage as a result of the procedure. An additional reason for his beliefs was the difficulty of establishing a positive diagnosis of cervical malignancy and the technical difficulty to completely excise the lesion [1,3].

The uterine cancer treatment: a daring approach

The most challenging operation in the whole realm of gynecological surgery in the first half of

the 19th century was the vaginal extirpation of the entire uterus for malignancy and as the physician A. N. Gendrian was stating in 1829: "The extirpation of the uterus remains the most painful and deadly operation" [9].

In 18th century, the Italian surgeon Giovanni Battista Monteggia (1762-1815) and Marschal of Strasbourg attempted to remove a cancerous uterus. In an article published in 1794 Marshal states that he had removed a tumor mass consisting of an incomplete prolapsed uterus by using ligature and knife. In 1813, Konrad Johann Martin Langenbeck (1776-1851) attempted a vaginal hysterectomy for malignancy but, as he mentioned, he didn't enter the peritoneal cavity and he didn't remove the entire uterus. Furthermore his patient survived for several years making us to believe that her lesion was not cancerous [1,3].

On the other hand, the French medical authors credited the Italian surgeon G. Paletta of being the first to perform a vaginal hysterectomy in 1812, a year before Langenbeck. They were stating that Langenbeck left intact a part of the fundus and for this reason Paletta was the first to remove completely the uterus. However, Paletta's patient died almost forty hours after the operation from peritonitis [3].

In 1822, another case of vaginal hysterectomy was described. The German gynaecologist Johann Nepomuk Sauter (1766-1840) operated in 1822 a 50-year-old woman suffering from a "true carcinoma of the uterus" [1]. The patient recovered from the operation but she died few months later of a gastro-intestinal lesion, probable a metastatic one.

The third complete vaginal extirpation of the uterus for malignancy was performed in 1824 by the German gynaecologist Elias von Siebold (1775-1828) who introduced two innovations in gynaecological surgery: the insertion of a sound in the bladder and the medio-lateral episiotomy to enlarge the vaginal space. The patient, a 38-year-old woman, mother of two children, was presenting with severe vaginal bleeding and extreme cachexia. The operation lasted twenty-five minutes and the patient died sixty hours later due to complications. In the following year, Siebold made a second attempt and this time he provided detailed notes on the postoperative complications including: severe pelvic pain, haemorrhage, coldness of the skin, weakness of the pulse, syncope and death [1].

Four years after Siebold's attempt, in 1829, Récamier in Paris removed successfully a uterus vaginally and the patient survived the operation [10]. Moreover, Recamier provided the clearest de-

scription of the vaginal hysterectomy mentioning also the use of ligature ties for the ligaments and the uterine arteries [11]. Récamier noted also in details the postoperative course such as the appearance of abdominal pain, meteorism, constipation and fever. He also proposed the therapeutic measures which were used: cataplasms, leeches, baths, vaginal irrigations and belladonna pills stating that the improvement came gradually at the 10th postoperative day [12]. Récamier' patient was also re-examined as a follow up by leading physicians of the time such as Alexandre Désormeaux (1778-1830) Antoine Dubois (1756-1837), Guillaume Dupuytren (1777-1835), Jacques Lisfranc (1790-1847), Philibert-Joseph Roux (1780-1854) and Louis-Auguste Baudelocque (1800-1864), all

professors of surgery and obstetrics who gave the credits to Récamier's operation [10].

Conclusion

Gynaecological cancer surgery became possible in the 19th century thanks to the evolution of surgical techniques, anaesthesia and antisepsis. Despite the severe, deadly complications, the techniques were perfected through the decades and the postoperative complications were managed successfully. However, the question of the true malignancy of the lesion remained unanswered till the beginning of the 20th century, period when the knowledge on cancer's pathology and staining techniques were considerably evolved.

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