

# Raoul Palmer, World War II, and Transabdominal Coelioscopy. Laparoscopy Extends into Gynecology.

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## The German Occupation Years

World War II began on September 1, 1939 with the German invasion of Poland. By early May 1940, German troops had overrun the Netherlands, Belgium, and Luxembourg; soon thereafter Germany broke through the French defensive forces near Sedan. Political lethargy, a poor communication system and many mistakes accelerated the downfall of the French army. By the end of May approximately 350,000 French soldiers were trapped in Dunkirk. The French army surrendered. Paris was declared an "open city" and the French government abandoned the metropolis. On June 14, German troops occupied Paris without a struggle, the opening moment of what would be a four-year German occupation.

The Third Reich plundered the lands under its control as the enormous German military consumed vast amounts of food and equipment. France was also forced to pay huge sums of money. In November 1942, for example, the Germans were collecting 300 million francs a day. Rationing was a fact of everyday life. Even bread had to be purchased with rationing stamps; the same held for clothing and soap. French hospitals faced a desperate situation: surgical supplies, bandages, needles, and instruments were difficult to come by. Coal supplies were not adequate to keep the winter cold at bay. Electricity often died in the middle of operations.

## Raoul Palmer's Work on Laparoscopy in Occupied Paris

In the midst of such hardships, Raoul Palmer (1904-1985) in 1943, began his first attempts at laparoscopy with the help of his wife, Elisabeth Palmer (**Figure 1 & 2**). Palmer had to make many of his instruments as most manufacturers were out of business, pursuing other ways of making a living, or in prisoner of war camps. Fortunately, however, he could draw on his experience with hysterography, which he practiced before the war in the late 1930s. In 1938, he had constructed an apparatus for the exact mea-

surement of manometric pressure during the hysterography, but the war made it difficult to find within the city limits the "sparkets" with carbonic acid.

Palmer needed some sort of transportation in order to look outside Paris for supplies. Chronic shortages blocked his way. Gasoline was reserved for public transportation and use by the German forces. Palmer had to pack the empty sparkets onto a bike and ride several miles into the countryside, where he was able to refill them. He then returned to the Broca Hospital before the military-imposed curfew made movement impossible.<sup>1</sup>

Palmer used these "sparkets" to construct a simple insufflator and observed the genital organs via McCarthy's cystoscope. Elisabeth Palmer, his wife and assistant, recalls the details of this operation: "A flashlight battery (4.5 V) with a rheostat supplied the light source. Often, when we increased the light, the kernel-sized bulbs broke and we had to remove the optical system from the abdominal cavity and replace the bulb with our bare hands. One worked at that time without sterile gloves and submerged the hands repeatedly in an alcohol solution."

Palmer's most significant step to this point was the investigation of pneumoperitoneum. Palmer used CO<sub>2</sub> for insufflation and understood the importance of intra-abdominal pressure. He advocated close control over intra-abdominal pressure and advised not to exceed 25 mm Hg. Palmer also felt that the speed of insufflation should be limited to not more than 400-500 cc per minute.<sup>2</sup>

## Gynecological Laparoscopy After World War II

Palmer published his first article on abdominal endoscopy soon after the end of the war. It covered the 250 "coelioscopies gynecologiques" that he had carried out in the Trendelenburg position.<sup>2</sup> Palmer also presented the instruments he made and the examination techniques, altogether the most substantial published work on the application of laparoscopy in women's medicine at that time. Palmer described the "section des adherences, biopsies."<sup>2</sup> Although he referred to the American physicians far more often, Palmer mentioned the work of both Ruddock and Kalk and even the manufacturers of their instruments.

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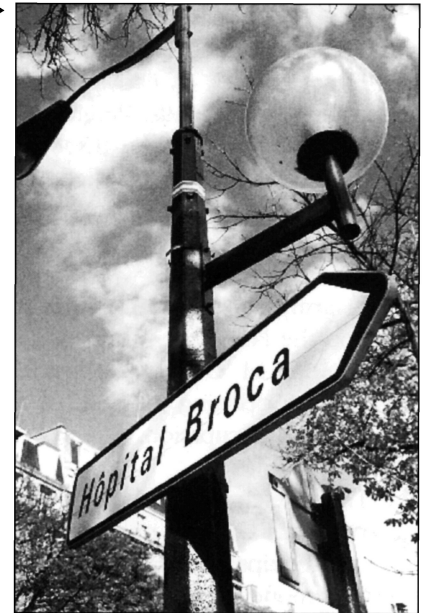


◀ **Figure 1. Raoul Palmer (about 1943). Figure 4-7 in *Highlights in the History of Laparoscopy*.**



◀ **Figure 2. Raoul and Elisabeth Palmer. Figure 4-8 in *Highlights in the History of Laparoscopy*.**

▶ **Figure 3. Laparoscopy emanated from Hospital Broca throughout Europe and other continents. Figure C-1 in *Highlights in the History of Laparoscopy*.**



As Palmer used it, the term “coelioscopie gynécologie” encompassed two types of examination of the female genitals: viewing through the abdominal path, “coelioscope transabdominale” and through the transvaginal path, “la culdoscopie de Decker.” Palmer drew on both procedures, although in his opinion the transabdominal entry was superior to the transvaginal.

### **Gynecological Laparoscopy Under Local Anesthesia**

In most cases, the laparoscopic examination was carried out under local anesthesia. It appears that technical considerations, not conviction, prompted Palmer to conduct laparoscopy with local anesthesia. The small rooms of Broca Hospital, where Palmer carried out this procedure, did not offer enough space for an anesthesiologist plus full equipment (**Figure 3, 4, 5**). In fact, Palmer later told Semm that his female patients never allowed him to repeat a laparoscopic examination under local anesthesia. Laparoscopic follow-up examinations were thus impossible.<sup>3</sup> Palmer had to wait until 1952 before he received a permanent place for laparoscopy in the operating room. At this point he turned to the exclusive use of general anesthesia for laparoscopy.<sup>4</sup>

### **Proximal Light Source and the First Film about Laparoscopy**

In 1952, laparoscopic examination took a great stride forward when a Parisian optical institute introduced the principle of proximal illumination. “Laparoscopy became a practical method only when the illumination became 100 times more potent,” recalled Palmer. “This was first achieved in France with the Fourestier-Vulmiere instrumentation, using quartz rods for the transfer of light, and, in



**Figure 4. Hospital Broca was housed in a building which dates from the 19th century. Figure 4-5 in *Highlights in the History of Laparoscopy*.**

1955 I showed the first laparoscopic motion picture filmed in 8 mm color.”<sup>5</sup> Although the equipment was rather heavy and noisy, and the endoscopes had a diameter of 10 mm, Palmer found the illumination so superior that he continued to use it for nearly 10 years.

In 1994, Elisabeth Palmer (**Figure 6**) described the excitement of that time, calling it a “true revolution, at last



**Figure 5.** In order to reach Palmer's office one had to cross the large patient room. Figure 4-10 in *Highlights in the History of Laparoscopy*.

enough light and the possibility to film the laparoscopies." She explains: "The year 1952 changed everything for us! We spent several hours each week in the optical institute and constantly improved the instruments. The light bulb (150 V) was searingly hot, but was cooled through the introduction of cold air (as with a vacuum cleaner). This apparatus, named Drapier, made a lot of noise; we could hardly make ourselves understood during the laparoscopy."<sup>6</sup>

Hans Frangenheim (b. 1920), a gynecologist of Konstanz, Germany, also remarks on the advantages and disadvantages of the new illumination, in particular the quartz rod. "On the one hand, these quartz rods were very sensitive; on the other hand, the lamps were very hot," he notes.<sup>7</sup>

### Viewing the Ovocytes via Laparoscopy

Raoul Palmer's inventive work did not stop with these developments. In 1958, several years before Edwards and Steptoe would make their own laparoscopic advances in gynecology, Palmer and his colleague, R. Klein, were able to view the ovocyte via laparoscopy. Palmer used an 18 to 20 cm needle with a diameter of less than 2 mm. He first reported on this procedure three years later in 1961 during a speech before the "Societe de Biologie." At the end of his talk, Palmer pointed to future applications of the technique. "This technique should be of great interest for the study of the physiology of ovulation and should lead to a new way of treating sterility due to tubal occlusion. It should be of great interest in human embryology and genetics and help to obtain embryological material after in-vitro fertilization."<sup>8</sup>

### Palmer's Influence on European Science

Palmer's untiring work on sterility and fertility won him



**Figure 6.** Elisabeth Palmer in Paris. "One worked at that time without sterile gloves and submerged hands repeatedly in an alcohol solution." Figure 4-15 in *Highlights in the History of Laparoscopy*.

fame throughout the medical world. Beside his books, he was responsible for over 800 other publications and numerous films on laparoscopy, hystero-graphy, sterilization, and ovulation. Palmer was an honorary member of the Royal Society of Medicine (1958), and of other national societies for gynecology: Brazil (1953), Portugal (1954), Argentina (1957), Mexico (1958), Italy (1959), Germany (1965), Austria (1965), and Peru (1966), to name a few. He was named president of the Societe Francaise de Gynecologie in 1962, served as vice-president of the International Fertility Association from 1964 to 1967, and then directed the Societe Internationale d'Endoscopie from 1969 to 1972. In 1974 he became a Fellow of the Royal College of Obstetricians and Gynecologists (FRCOG).<sup>9</sup>

"Raoul Palmer was a highly educated and polyglot person," recalls Frangenheim, "and mastered five languages, written and spoken."<sup>10</sup> Palmer's talent with foreign languages facilitated contact with people throughout the world. The Palmers traveled to countless countries in order to demonstrate laparoscopy. "We had personally to drag the instruments, packed in huge suitcases, with us everywhere, and they were terribly heavy," remembers Elisabeth Palmer.<sup>11</sup> "The long quartz rods were very unwieldy and broke easily; we had to be very careful of everything." As the above list of honorary memberships indicates, Palmer was particularly active in South and Central America, where he held lectures in Spanish and demonstrated the laparoscopic method. "My husband was certainly much better known in South America than in France," states Elisabeth Palmer.<sup>12</sup> Even today, laparoscopy is known in these countries as "coelioscopic," the term propagated by Palmer.

### Final Remarks

It would exceed the bounds of this article to list all of the scientists by name who were taught and influenced by

Palmer, let it suffice to say that laparoscopy emanated from Hospital Broca throughout Europe and other continents. A glance into the Palmers' guest books reveals that literally hundreds of physicians from all over the world came to the Parisian "temple" of gynecology. As Semm attests, "It was customary then for university-based gynecologists to visit the Palmers in Paris."<sup>13</sup> Thanks to Palmer's efforts, this method was introduced into numerous clinics, including what were or became leading centers of gynecology: the Women's Clinic in Munich under Richard Fikentscher, the Gynecological Ward at the Oldham Hospital Group in Great Britain (Patrick Steptoe), and the Department of Obstetrics and Gynecology at the Chicago Medical School (Melvin Cohen). These names come up elsewhere in the further course of the history of laparoscopy.<sup>14</sup>

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