

Patrick C. Steptoe: Laparoscopy, Sterilization, the Test-Tube Baby, and Mass Media

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ABSTRACT

In the late 1950s, Patrick C. Steptoe, a British gynecologist, established contact with Palmer of Paris and Frangenheim of Wuppertal, Germany, and studied laparoscopic technique under the tutelage of these pioneers. Despite the negative attitude among his colleagues, Steptoe soon became one of the most innovative researchers in the field of abdominal endoscopy, particularly laparoscopic sterilization. In the late 1960s, Steptoe began working with Robert Edwards, an embryologist, and launched an in-vitro fertilization project obtaining eggs by means of laparoscopy. Both researchers experienced years of frustration, disappointment, ethical and scientific criticism as well as a difficult relationship with the mass media. Finally, in July 1978, Louise Brown, the first test-tube baby, was born in England.

Like many of his colleagues in the 1950s and 1960s, Patrick Christopher Steptoe (1913-1988), a gynecologist in Oldham, Great Britain, was concerned about the number of unnecessary laparotomies. Unfortunately, the Oldham group of hospitals was not a university clinic and Steptoe had scanty opportunity to develop his own research. In the late 1950s, he searched the medical literature for an alternative form of examination and came across publications about Decker's culdoscopy, the vaginal approach to view the abdomen. Since this method was not widespread in England, Steptoe, in 1958, went to Montreal, Boston, and New York in order to observe and learn the practical use of culdoscopy. However, Steptoe left America disappointed.¹

Steptoe's First Contact with Laparoscopy

Some months later, Steptoe heard about Raoul Palmer's "mecca" of gynecological laparoscopy. Steptoe learned that Palmer was scheduled to present a paper on laparoscopy at an upcoming congress in Amsterdam and immediately decided to attend. In August 1959, he listened to Palmer's talk and established contact with both Raoul and Elisabeth Palmer and Hans Frangenheim of Germany.¹ Invitations to Paris and Wuppertal followed, and Steptoe assisted these renowned laparoscopists in their work.² Back in Oldham, he received financial backing from the

hospital's management committee for his plans to develop laparoscopy. "With the new German equipment they allowed me to buy, I was practicing my technique on fresh cadavers," recalled Steptoe.¹ Soon thereafter, he introduced laparoscopy into his unit. The First International Symposium on Gynecological Laparoscopy in Palermo (1964) gave Steptoe many new ideas about laparoscopic applications.¹ He learned about technical advances in abdominal endoscopy such as "cold-light" (Frangenheim) illumination and laparoscopic sterilization (Palmer). "I can't do it [sterilization] often enough in France as it's a Catholic country," confided Raoul Palmer to Steptoe in private conversation.¹ "And Hans Frangenheim also has difficulties because he's working in a Catholic region of Germany. But you, Patrick, live in England, and you could work unimpeded."

Laparoscopic Sterilization

Palmer was right. In the mid-1960s, English law concerning sterilization was tolerant and allowed physicians to perform it by open surgery. For specific historical reasons this method of family planning enjoyed greater social acceptance in England than in other countries. Steptoe began to use the laparoscope for sterilization and published his work in British medical journals. Most English gynecologists remained, as Steptoe observed, "skeptical and nervous of the method."³

The First Textbook on Laparoscopy in English

Although several books on laparoscopy for internal medicine and gynecology had been published by the mid-1960s, none was in English. The two leading works on the technique in internal medicine had been written by Heinz Kalk of Cassel, Germany (1952 & 1961). The first extensive publication on gynecological laparoscopy was written by Frangenheim of Wuppertal, Germany, in 1959. Three years later, Jean Thoyer-Rozat of Paris wrote *La Coelioscopie*, and Albano and Cittadini presented their *La Celioscopia in Ginecologia* in Italian.⁴

In 1965, Steptoe started work on a textbook for laparoscopy in gynecology. His *Laparoscopy in Gynaecology* appeared in 1967.⁵ Although Steptoe had collected data on only 126 cases (compared to the over one thousand examinations carried out by Palmer and Frangenheim), his detailed

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description of laparoscopic technique represented an important step forward. When laparoscopic sterilization was introduced a few years later on a large scale in the United States, Steptoe's book became a standard text. In a sense, his work served as a bridge between the European scientists and the expanding market in North America.

THE FIRST TEST-TUBE BABY

“Laparoscopy - An Unacceptable Procedure”

A scientist of international repute, Robert Geoffrey Edwards (b. 1925), possessed in-depth knowledge of genetics, immunology, and embryology. Edwards had worked on the problem of fertility for many years both in Great Britain and the United States.¹ Drawing on his experiments with mice embryos, he believed it was possible to fertilize a human oocyte in the laboratory and then to implant it in the uterus. Because he was not a physician, Edwards had little chance to obtain human ova or to perform clinical trials. In the fall of 1967, he read Steptoe's article “Laparoscopy and Ovulation” in the *Lancet*.¹ Edwards immediately phoned the author and presented his concept of obtaining oocytes by laparoscopy for use in in-vitro fertilization. Steptoe offered his support. In the meantime, however, other gynecologists had discouraged Edwards from undertaking any trials which involved a laparoscope. “Most of my gynaecologist friends warned me that laparoscopy was an unacceptable procedure,” Edwards later wrote.¹

Six months later, in early 1968, Edwards attended a meeting of the Royal Society of Medicine in London. Steptoe took part in the meeting's stormy discussion on laparoscopy. Edwards was impressed by Steptoe's knowledge and his professional handling of criticism. He approached Steptoe during a break in the proceedings, and Steptoe repeated his willingness to help.¹

MASS MEDIA

“Test Tube Time-Bomb Ticking Away”

What was to prove a difficult confrontation with the mass media began in February 1969. At that time Steptoe and Edwards published their early work on the in-vitro fertilization of 56 oocytes. Response was overwhelmingly critical. “There were blazing headlines in the national press: ‘Life is created in a test tube.’ The telephone at home and in the laboratory at Cambridge began to ring and ring,” noted Edwards.^{1,6} Numerous scientists and physicians called the experiments premature; journalists spread visions of a “test tube time-bomb ticking away,” and the influential

BBC produced a television program about cell fusion and in-vitro fertilization which opened with a picture of the atomic bomb explosion in Hiroshima.¹ Georg Beck, Archbishop of Liverpool, denounced the efforts of Steptoe and Edwards as “morally wrong.”¹

Medical Research Council and Reservations About Laparoscopy

Both scientists soon ran into a serious impediment in late April 1971 when the Medical Research Council (MRC) rejected Steptoe's application for long-term support of his research program. The MRC was worried about both the ethical aspects and dangers implied by a laparoscopic technique. “Reservations were also expressed about the justifiability of employing the procedure of laparoscopy for purely experimental purposes,” read the official MRC statement.¹ “The application was accordingly declined.” In their response to the MRC position, Edwards and Steptoe indicated that more than three thousand laparoscopies had been carried out in the Oldham hospital with neither moral nor physical complications. The two scientists were able to secure financial support from private sources, mostly in the United States, and established the world's first in-vitro fertilization laboratory at Kershaw's Hospital, about two miles north of Oldham.¹

Years of Frustration and Disappointment

Through most of the 1970s, not one patient became pregnant through in-vitro fertilization. Pressure from both the media and scientific community mounted. In particular, the reservations of Nobel Prize winner James Watson received wide news coverage.¹ In 1977, one year before Steptoe would reach retirement age, he and Edwards decided to pursue a new line of research, until he found success in Mrs. Brown. Brown's in-vitro pregnancy became a symbol of hope to infertile women, and the press, early on, picked up the story. “No one inexperienced in the pressures of the press can appreciate the stress and trauma of it,” recounted Edwards.^{1,7} He described the situation in 1977:

During the pregnancy, reporters began to circle the hospital grounds with long-range cameras, long-range recorders; every modern device of intrusion. They began interfering at Kershaw Hospital; names of past and present patients were printed. Some members of the hospital staff obviously were giving away addresses from the hospital records along with reports of Mrs. Brown's health and progress at Kershaw's. Money talked.¹

Reporters were waiting outside Brown's house, and Steptoe arranged for her to stay with his daughter in Suffolk. To avoid a sensation, Brown was admitted to Oldham hospital under an assumed name. Only two members of the staff knew who she really was.¹

Journalists attempted to enter the hospital by any means, disguised as window cleaners or by bribe. In late June, money was again able to purchase information; the results of Brown's ultrasound were published in a sensational way. Upon reading false speculations that her baby had died, Brown was heartbroken. Her blood pressure rose dangerously, and the baby's heartbeat was disturbed.

“There is a Bomb in the Hospital”

Tension surrounding the pregnancy continued to intensify. In early July, an anonymous caller told the hospital administration that a bomb had been placed in the maternity ward. Within 30 minutes, a special police force evacuated the hospital, including new-born babies, those recovering from delivery or surgery, pregnant women, and hospital staff. Trained dogs searched the building. After two hours the police declared the building safe.¹

Delivery Under Police Assistance

As Brown's delivery date drew near, both medical and police authorities stepped up preparations for the event. Phone lines and other equipment were installed; a press conference was scheduled. Fierce negotiations surrounded the right to film the delivery. In light of the intense interest in Brown's pregnancy, Steptoe decided to perform the cesarean section at night. On July 25, 1978 he left the hospital as usual in the later afternoon, but returned at eight o'clock by a side door. The sector administrator then called the police for assistance, and the hospital area was cleared of journalists. The delivery could begin.¹

Standing Ovation

On August 12, two weeks after the birth of Louise Brown, the *Lancet* published the first short comment about the event. In early 1978, the two scientists presented details of their work before the Royal College of Obstetricians and Gynaecologists in London. They were given a standing ovation. “The Secretary of the College told us that such an ovation had not occurred ever before in the whole history of the College,” recalled Edwards.¹ Several months later, Steptoe attended the annual meeting of the American Fertility Society in San Francisco. “His lecture had been listened to raptly by over 1,000 people, who not only crowded the seats of the huge hall but filled the doorways and corridors outside it,” reported Edwards. “Patrick told me

how the ovation at the end of his lecture on this occasion almost moved him to tears.”¹

Final Remarks

During the early stages of Steptoe's work as a gynecologist, he focused on developing sterilization techniques. Despite the negative attitude towards gynecological endoscopy among his colleagues, he went on to become a leader in this field in the 1960s. In the next decade, still using a laparoscopic technique, Steptoe went in the opposite direction—artificial fertilization. At first glance, these two areas of research would seem to be in conflict, but one overwhelmingly priority unites them: the needs of the patient.

Another interesting aspect of this story is the way it illustrates how social issues increasingly exercise more influence on the medical environment. A powerful link between these two spheres is the mass media. Even if this relationship does not always seem reasonable, the medical world has to take into account the increasing interest of society in both the ethical and non-ethical ramifications of its activity.

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