

# Ephraim McDowell (1771-1830)

Ephraim McDowell was an US abdominal surgeon who in 1809 performed one of the first successful ovarian surgeries. McDowell conducted his medical practice in Danville, Kentucky, where he used novel methods of ovariectomy to remove a twenty-two and a half pound ovarian tumor from his patient, Jane Crawford. At the time, surgeons performed ovariectomies by making an incision into each patient's ovary to remove a mass. However, their patients often died from infection or blood loss. McDowell's methods included making an incision into the abdominal muscles, draining the abdomen of blood, and using adhesives with sutures to close the wound. McDowell performed one of the first invasive abdominal surgeries in which the patient survived, and his surgical techniques established the potential safety and efficacy of ovarian and abdominal surgery in the 1800s.

McDowell was born on 11 November 1771 to parents Mary McClung and Samuel McDowell in Rockbridge County, Virginia. He was the ninth of twelve children born to his parents. His father was a veteran of the French and Indian War, a colonel during the American Revolution, and governed the conventions that led to the drafting of the Kentucky Constitution. At the age of thirteen, following the end of the American Revolution, McDowell and his family moved to Danville, Kentucky. In Danville, McDowell received his primary education at the classical seminary of Worley and James, a religious institution. McDowell's granddaughter stated in a biography that, during his childhood, McDowell would often decline invitations to play with his friends to focus on his studies instead.

In the early 1790s while many of his male siblings became colonels and officers in the US military, McDowell pursued a career in medicine. At that time, medical schools were starting to become established across the United States. However, many students chose to apprentice under physicians rather than attend schools and receive medical degrees. At the age of twenty, McDowell began apprenticing under physician Alexander Humphries in Staunton, Virginia. After spending two years with Humphries, in 1793 McDowell began formal medical study at the University of Edinburgh in Edinburgh, Scotland. McDowell remained in Edinburgh until 1795. During his time there, he also received private medical lessons from John Bell, who was a vascular surgeon. In 1795, McDowell returned to Danville, Kentucky, without a medical degree, as he had run out of funding.

Upon returning to Danville, Kentucky, McDowell began his medical career. According to multiple biographers, McDowell was courageous, compassionate, and committed to his work. They claim he had a warm bedside manner and carefully planned all surgeries, especially surgeries that he deemed risky. McDowell also met Sarah Shelby, the daughter of the Kentucky governor Isaac Shelby, whom he then married in 1802. Together, they had four daughters and two sons.

In 1809, McDowell heard about Crawford, a woman who lived sixty miles away and had what other physicians hypothesized was an overdue pregnancy with twins. McDowell journeyed by horseback to examine Crawford and subsequently diagnosed her with an ovarian tumor. He informed Crawford that surgery was the only option to remove the tumor and that she would have to travel the sixty miles back to Danville, Kentucky, for him to be able to operate on her. McDowell also informed her that there had never been a successful abdominal operation, as all previous attempts at abdominal surgery resulted in bacterial infection and death. Crawford complied and made the sixty-mile journey to Danville on horseback.

On 25 December 1809, McDowell began the surgery to remove the ovarian tumor from Crawford in his home. A group of men had gathered outside of his home and were ready to avenge Crawford's death if she died from the surgery. Without medicine to put the patient to sleep or any antibacterial methods, McDowell made a nine-inch long incision into the left side of the abdominal muscles and removed a twenty-two and one half pound tumor from Crawford's ovary during the surgery, which

lasted twenty-five minutes. McDowell described the tumor as being filled with a dirty, gelatinous substance that weighed fifteen pounds. McDowell then removed the seven and one half pound sac of the tumor by wrapping a ligature around the ovarian tumor and excising it. A ligature is a tie that wraps around an organ to prevent blood flow to the area, which reduces blood loss during the surgery. McDowell's methods of ovariectomy included removing blood from the abdominal cavity, bathing the intestines in warm water, and adhering and suturing the wound closed. McDowell performed the procedure while Crawford lay awake and conscious in his home, with only a cloth to cover her face.

McDowell visited Crawford's room five days after the operation, where he found her awake and making her bed. Twenty-five days following the surgery, Crawford returned to her home and lived an additional thirty-two years. It was one of the first successful, documented ovarian surgeries conducted by a physician.

In addition to ovarian surgeries, McDowell also performed abdominal surgeries. McDowell had experience performing lithotomies, for example, which was the then novel technique of removing stones in the bladder. In 1812, McDowell performed an abdominal surgery on James K. Polk, who became the eleventh US President thirty-two years later. When Polk visited McDowell, he complained of abdominal pain. McDowell diagnosed him with stones in the bladder and a hernia, a pocket of intestines coming out of the abdomen. McDowell repaired the hernia and Polk walked home with the bladder stone in his pocket following the lithotomy. Later, McDowell received a letter from Polk, in which Polk thanked McDowell for enabling him to pursue his education in law, marry a woman, and be elected to the Tennessee Congress.

Following McDowell's success with Crawford's surgery, he was called to assess a slave who complained of a hard and painful tumor in the abdomen in 1813. The tumor was different than the tumor found in Crawford because it was fixed and immovable, indicating that it was a different type of mass. McDowell initially administered mercury for four months with the intention of dulling the pain. Despite the treatment and McDowell's hesitations to perform the surgery, the woman still complained of pain. McDowell agreed to perform the surgery as an experiment, and made the same nine-inch incision into the woman's abdominal muscles to extract the tumor from her ovary. He used the same methods of ovariectomy as in Crawford's surgery, and despite anticipating that the surgery would likely cause abdominal hemorrhaging and subsequent death of the women, the woman made a full recovery.

In 1816, McDowell performed a similar surgery on another slave to remove an ovarian tumor. Because McDowell could easily move the tumor from side to side in the woman's left ovary, McDowell anticipated its ease of extraction. Instead of making the abdominal muscle incision like the incisions he had made in his previous two patients, McDowell cut under the woman's navel down to the left side of her pubic bone to have a better view of the afflicted ovary. Although McDowell attempted to remove the tumor using the same methods that he used before, he was unable to. Upon closing the wound, the woman began complaining of being cold. McDowell made her rest and gave her a mixture of the alcoholic beverage, cherry bounce, and thirty drops of laudanum, a mixture of opiates and alcohol. After two weeks, the woman returned to her job with the tumor remaining in her ovary.

McDowell received many criticisms about his work following his ovariectomies. McDowell did not publish the results on Crawford's surgery until greater than five years later. His granddaughter, Mary Ridenbaugh, claimed that he was not a confident writer and wanted to ensure the report was accurate and well written. McDowell published his results from a number of his surgeries in the 1817 article "Three cases of extirpation of diseased ovaria" and in the 1819 article "Observations on diseased ovaria." In the published articles, McDowell documented several ovariectomies he performed, almost all of which were performed on black slaves. While many criticized McDowell for waiting so long to publish his results, others criticized him for his use of black slaves. Auguste Nelaton and James Johnson, both physicians in the 1800s, led a debate on McDowell's intentions in operating on black slaves. The two claimed that McDowell was only saving valuable assets rather than wanting to relieve human suffering. Samuel Gross, a surgeon and researcher of the history of ovariectomy, published more positive accounts of McDowell and claimed that McDowell is the father of ovariectomy.

Despite criticisms, McDowell received a number of awards for his work. In 1817, McDowell was named a member of the Philadelphia Medical Society. He also founded the Trinity Episcopal Church and helped establish Centre College, both in Danville, Kentucky. In 1825, McDowell was granted an honorary medical degree from the University of Maryland in College Park, Maryland. In his spare time, McDowell read and collected works related to medical literature, classics, history, literary essays, and biology.

McDowell remained in Danville, Kentucky, for the rest of his life. After eating wild strawberries near his home, McDowell had a sudden onset of acute abdominal pain and nausea. On 25 June 1830, he died from inflammation of the stomach, or what historians have suggested was appendicitis.

## Sources

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