

Charles Heber McBurney (1845 – 1913)

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A male, 19 years-of-age, presented with a 1-day history of anorexia, pain, nausea, vomiting and low-grade fever. The pain was initially located in the epigastric region and migrated to the right lower quadrant. Examination revealed tenderness upon one finger palpation over McBurney's point. The patient underwent a laparoscopic appendectomy for acute appendicitis followed by full clinical recovery.

Dr. Charles Heber McBurney's name is synonymous with the diagnostic sign, landmark and technique for the surgical management of the inflamed vermiform appendix (appendicitis). His surgical prowess extended to pioneering an operative approach to the management of impacted common bile duct stones, the surgical technique for inguinal hernia repair and the management of dislocation of the humerus resulting from a fracture.¹

Dr. McBurney was born on February 17, 1845. He received his undergraduate and graduate educations from Harvard University where he received both his AB (Artium Baccalaureus, i.e., Bachelor of Arts) and AM (Artium Magister, i.e., Master of Arts) degrees. He subsequently matriculated at the College of Physicians and Surgeons, Columbia University in New York City receiving his MD in 1870. Following a 1-year internship at Bellevue Hospital in New York, he pursued postgraduate studies in Vienna, Paris and London.¹ Upon returning to the United States in 1872, Dr. McBurney was appointed Assistant Demonstrator of Anatomy at the College of Physicians and Surgeons, Columbia University, New York City. He continued in this position until his appointment to Professor of Surgery in 1889. In 1901, he was named Professor of Clinical Surgery and in 1907 he received the distinction of Professor Emeritus of Surgery. McBurney was a Fellow of the American Medical Society and named an honorary Fellow of the Royal College of Surgeons. He was also a member of a number of national and international societies, including the New York Academy of Medicine and the Surgical Society of Paris.

Dr. McBurney was a member of the visiting or consulting staff at a number of different hospitals in New York, including St. Luke's, Bellevue, Presbyterian, New York Hospital, and the Hospital for Ruptured and Crippled, as well as Roosevelt Hospital. It was at Roosevelt Hospital that William H. Syms

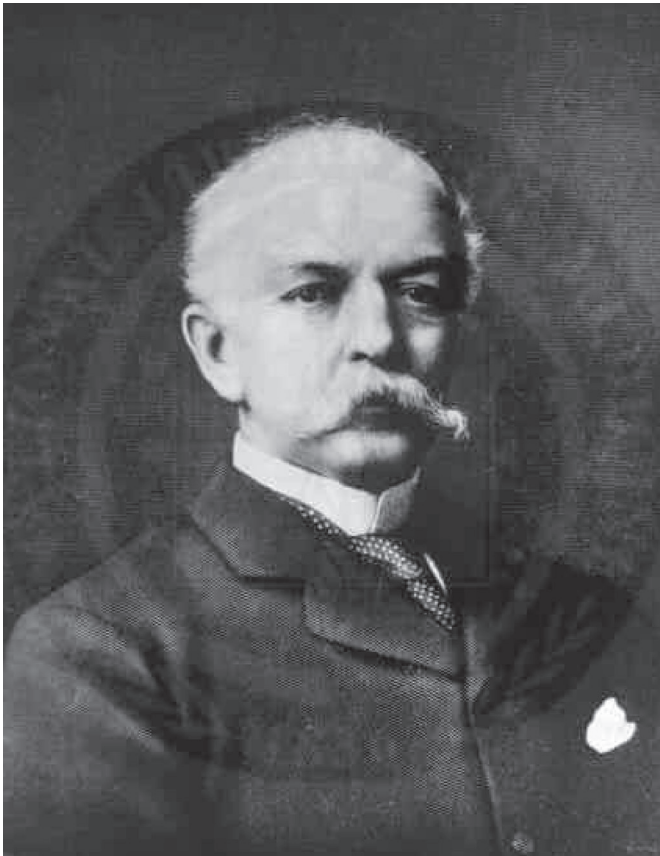


Figure 1. Charles Heber McBurney, MD. Photo courtesy of the National Library of Medicine.

bestowed a philanthropic gift that provided the funds enabling Dr. McBurney to construct the model surgical pavilion he envisioned. Named for its financial supporter, “The Syms Operating Pavilion” opened in 1892 and later achieved international notoriety for its surgical teaching and research.² Led by the practice of Dr. William Halsted at Johns Hopkins, McBurney introduced and required all members of the surgical team in the operating suite wear rubber surgical gloves in order to maintain strict aseptic techniques.²

Dr. McBurney described a technique where he approached a common bile duct stone through an incision in the duodenum and ampulla (sphincterotomy) followed by dilation of the ampulla with forceps and extraction of the stone.³ Prior to this time common bile duct stones were approached through an anterior choledochotomy requiring direct incision of the common bile duct. In many cases, common bile duct stones are now retrieved endoscopically. McBurney’s notoriety for this novel approach never reached that of his famous sign or the surgical incision that bears his name for the diagnosis and surgical management of appendicitis.

McBurney described his experience with the presentation and the occasional difficulty diagnosing acute appendicitis.⁴ He advocated early surgical management of this disease and reported that the point of maximum palpable tenderness is determined by pressure applied by one finger (McBurney’s

sign) and was located “exactly between an inch and half and two inches from the anterior spinous process of the ileum on a straight line drawn from that process to the umbilicus” (McBurney’s point). This landmark was believed to correspond to the areas of the inflamed appendix irritating the abdominal peritoneum over the T11 and T12 dermatome segment. Contrary to McBurney’s original description, most textbooks erroneously describe the point as occurring at the junction of the lateral and middle thirds of a line extending from the anterior superior iliac spine to the umbilicus.

A prospective study of 100 double-contrast barium enema studies where a radiopaque marker was placed at the junction of the lateral and middle thirds of a line joining the right anterior superior iliac spine to the umbilicus showed that the appendix was located at McBurney’s point in only one case (1%). Anatomically, 67% of all appendices were found cephalad and 32% caudal to McBurney’s point.⁵ In contrast, Ramsden et al.⁶ found that the appendix was more commonly situated caudally and located within 5 cm of McBurney’s point less than one-half of the time. Karim et al.⁷ performed supine barium enema examinations in 51 healthy persons and found that in 19 (70%) the base of the appendix was inferior to a line drawn between the two anterior superior iliac spines. These anatomical variations explain why the appendix is not found in all patients at McBurney’s point.⁸ The combination of a history compatible with appendicitis, leukocytosis and pain located at McBurney’s point has a diagnostic accuracy of about 75%.⁹ In males, where the diagnosis of acute appendicitis is initially unclear, the finding of tenderness over McBurney’s point was useful in confirming the diagnosis (odds ratio=8.3, confidence interval=1.1-63).¹⁰ Less than one-half of all patients with appendicitis had the greatest palpatory pain located over McBurney’s point.¹¹

In another publication,¹² McBurney described the operative approach to appendicitis that was originally pioneered by Louis L. McArthur and known as the gridiron incision.² Despite McArthur’s original description of the incision, it has borne the name “McBurney’s incision.” McBurney described, “The incision in the skin is an oblique one about four inches long. It crosses a line drawn from the anterior iliac spine to the umbilicus nearly at right angles, about one inch from the iliac spine, and is so situated that its upper third lies above that line.”¹² Unlike prior approaches, blunt dissection was employed to separate and avoid cutting muscular fibers, thus maintaining the integrity of the abdominal wall.

Dr. McBurney died of heart disease on November 7, 1913 in Brookline, Massachusetts.¹³ He will always be remembered by his students as a gifted teacher with exquisite operative skills and for the significant contribution he made to the better understanding of the surgical management of appendicitis.

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