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Surgical Leaders *Edoardo Bassini (1844–1924): Father of Modern-day Hernia Surgery*

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ACCORDING TO ROMAN scripture, it was Celsus who attempted the first inguinal hernia repair in history during the first century A.D. His attempts were unsuccessful and resulted in an early recurrence of the hernia, which eventually led to the patient's death.¹ Over the next two millennia, little understanding was gained regarding the anatomy of the inguinal canal. It was only in the last 100 years that major advancements in herniorrhaphy were established, thanks in large part to the work of Edoardo Bassini, who revolutionized the surgical treatment of the inguinal hernia with a technique which has become the basis of modern-day herniorrhaphy.

Edoardo Bassini (Fig. 1) was born on April 14, 1844, to a prosperous land-owning family in Pavia, Italy. He studied medicine at the University of Pavia and graduated in 1866. At that time, there was great political turmoil in Italy such that on graduation, Bassini postponed his surgical training and enlisted in the independent militia as a foot soldier with the hope of achieving unity for his country. As a soldier, he participated in two great battles. The first was in October 1866 when Italy came to the aid of Prussia in the war against Austria.² In 1867, Giuseppe Garibaldi led Bassini's militia in an attempt to seize Rome from the Papal forces. Hopelessly outnumbered, the militia was crushed. Bassini sustained a bayonet injury to the right groin. After suffering for a night on the battlefield where he was wounded, he was taken prisoner and brought to a French field hospital. Bassini's wound became infected and he began to develop high fevers and came very close to death. However, his condition improved after he developed a fecal fistula, which ultimately took several months to close.²

Bassini was discharged and transported back to Pavia, where his fistula reopened and he came under the care of his mentor, Luigi Porta, chief of the surgical

clinic. After his year-long recovery, Bassini was invited to serve as Porta's second assistant, a position that he held until 1874. In 1873, his mentor advised Bassini to visit the noted medical establishments of Europe. He traveled to Vienna to spend time in the surgical clinic of Theodore Billroth, to Berlin where he studied with Bernhard Langenbeck, to Munich where he worked with Johann von Nussbaum, and finally to London where he studied micro-organisms and their role in postoperative sepsis with Joseph Lister and Sir Thomas Spencer-Wells.²

In 1874, Bassini returned to Pavia and brought back his newly acquired medical knowledge. He was made Porta's first assistant. After Porta's death in 1875, Bassini expected to be named his successor but was disappointed when instead the chair of surgery was awarded to Enrico Bottini. In 1877, Bassini returned to London to work with Sir Thomas Spencer-Wells. Six months later, he was invited to teach clinical surgery at the University of Parma.¹ Subsequently, he was named chief surgeon at the city hospital in Spezia. It was in Spezia that Bassini began to focus his interest



FIG. 1. Portrait of Edoardo Bassini. Reprinted from Edoardo Bassini. *Wikipedia, the free encyclopedia*. Available at: http://it.wikipedia.org/wiki/File:Edoardo_Bassini.Gif. Accessed January 29, 2012.

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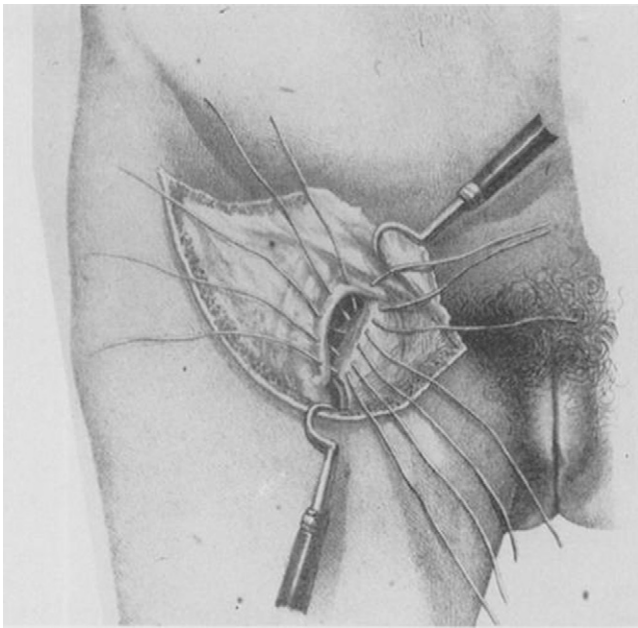


FIG. 2. Plate from Bassini's 1893 monograph on femoral hernia repair. Reprinted from Rutkow IM. Edoardo Bassini: 1844–1924. *Hernia* 1997;1:151–3.

on inguinal anatomy and the surgical treatment of hernias in this anatomic region. Bassini's reputation grew quickly. He was nominated for the chair of surgical pathology at the University of Padua in 1882 and eventually ascended to the professorship of clinical surgery at Padua in 1888.¹

As chair of surgical pathology at the University of Padua, Bassini had free access to human cadavers. He broadened his knowledge of the inguinal region, performing repeated dissections on cadavers in the hopes of understanding the underlying anatomy and developing an effective technique to repair inguinal hernias. Bassini believed in extensive dissection of the spermatic cord, dissection of the hernia sac with high ligation, and vigorous reconstruction of the floor of the inguinal canal. His technique included incising the transversalis fascia from the internal inguinal ring to the pubic tubercle after dividing the cremasteric muscle and ligating the hernia sac. A three-layer fascial repair was performed to restore integrity to the inguinal floor and the inguinal canal. The medial tissues (internal oblique muscle, transversus abdominis muscle, and transversalis fascia) were fixed to the shelving edge of the periosteum of the pubic tubercle and the inguinal ligament with interrupted sutures.

Bassini's research ultimately resulted in the first successful inguinal hernia repair, which he performed on December 23, 1884.¹ Using his newly developed clinical concepts, Bassini managed to perform 42 herniorrhaphies in 38 patients within the next 3 years and presented his findings to the Italian Society of Surgery



FIG. 3. Tomb of Edoardo Bassini in Pavia, "Cimitero Monumentale," Italy. Reprinted from "Tomba di Edoardo Bassini" *Wikipedia, the free encyclopedia*. Available at: http://en.wikipedia.org/wiki/File:Tomba_di_Edoardo_Bassini_1.JPG. Accessed January 29, 2012.

at Genoa.³ In 1890, Bassini had expanded his case series to encompass 262 herniorrhaphies in 216 patients with a 98 per cent follow-up rate for up to 4½ years and no reported deaths among the 251 nonstrangulated repairs. With only four cases lost to follow-up and seven recurrences, Bassini recorded a success rate of 97 per cent!¹ His method proved superior to that of the Billroth clinic, which had a mortality rate of 6 per cent and a recurrence rate of over 33 per cent. During the same year, he published his technique in the German literature, "Archiv für Klinische Chirurgie" (Langenbeck's Archives of Surgery), and his results were accepted and lauded by the surgical community.³

Throughout his remaining career, Bassini expanded on his initial understanding of the anatomy of the inguinal region. He made the distinction between direct and indirect hernia defects and described the preperitoneal plane, which would become important in the future development of preperitoneal mesh repair techniques. The modern Bassini repair includes high ligation of the hernia sac and reconstruction of the inguinal floor by approximation of the conjoint tendon to the

shelving edge of the inguinal ligament with interrupted suture (Fig. 2). This remains a useful repair, especially when mesh repair would not be advisable as a result of an increased risk of infection.

Bassini was professor of clinical surgery at the University of Padua until 1919 when he retired to his farm to pursue his hobby of horticulture. In 1924, Bassini died at the age of 80 years and was buried in his family tomb in the “Cimitero Monumentale” of Pavia (Fig. 3). Bassini’s legacy for developing the

“cure of the inguinal hernia” will surely be immortalized in the history of surgery.

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