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PIONEERS IN COLORECTAL SURGERY

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Sir W. Ernest Miles

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W. Ernest Miles (Fig. 1) is perhaps rightly recognized as the father of safe abdominoperineal resection of the rectum for cancer in an era when previous perineal rectal excision was associated with high mortality and almost universal cancer recurrence. At the turn of the twentieth century, most European centres concentrating on rectal cancer management had adopted the approach of perineal excision of the cancer with the performance of a coloperineal anastomosis initially popularized by Lisfranc in 1826 [1]. Data on recurrence and mortality for this procedure were sparing until 1900 [2]. Miles himself recognized, in an early review of perineal excision cases personally treated between 1899 and 1906 (utilizing a modification of the standard posterior excision approach used at the time), that local recurrence occurred in 54 of 57 cases, with almost all developing recurrence within the first 6 months after surgery [3].

In his assessments of these cases, Miles subjected most of these patients to a painstaking postmortem dissection in an attempt to define the nature of perirectal lymphatic spread. These dissections were largely performed as macroscopic examinations of both postoperative patients and those deemed to have inoperable disease but who were never operated upon, without the benefit of microscopic examination [4]. What he learnt from this early work was the necessity for a more radical anal excision in most cases of rectal cancer (with the inevitable creation of an abdominal stoma) and the need for pelvic colon excision with adequate mesenteric lymphadenectomy to prevent recurrence from proximal lymphatic spread. This view essentially changed the traditionally held concept of lymphatics of the rectum, which was originally based on Gerota's anatomical studies reported in 1895 [5].

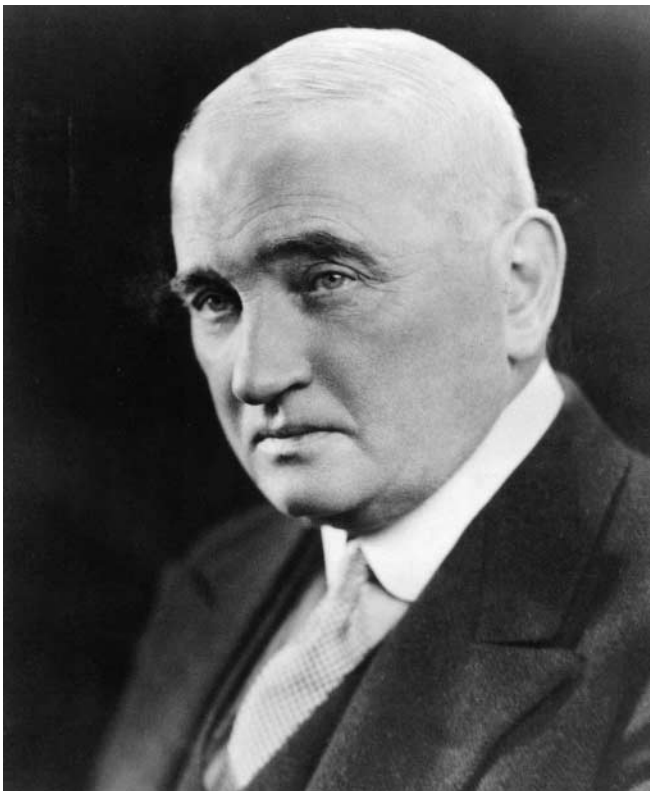

Fig. 1 Sir W. Ernest Miles (Courtesy of the Library of the Royal College of Surgeons, England, Lincolns Inns Fields London)

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In advocating this procedure, Miles also emphasized somewhat prophetically the importance of excision of the pelvic mesocolon below where it crossed the common iliac artery along with attendant wide peritoneal excision, a role for iliac lymphadenectomy and the significance of wide soft-tissue perineal excision in an attempt to reduce recurrence [6–8]. The latter parts of his "abdominoperineal" procedure were predicated on an impression of lateral and downward lymphatic spread which admittedly were present in advanced cases and which were only challenged relatively recently by Heald and colleagues in their seminal view of principally upward lymphatic spread within the mesorectal sleeve, resulting in the modern day nerve-preserving excision of the rectum and its embryological lymphofascial compartments en bloc [9]. The place for extended lymphadenectomy has not yet been made [10, 11], however, there is an increasing recognition that, even in the days of total mesorectal excision, the greater reported locoregional recurrence rates following abdominoperineal excision compared with restorative low anterior resection [12] may be a result of inadequate infralevator soft-tissue excision. It is fascinating to recognize in this regard that Miles prophesied the need for a more radical perineal excision and today, even in the presence of a well-performed total mesorectal excision in regulated units, abdominoperineal resection specimens tend to have a higher incidence of circumferential resection margin involvement and measurably smaller posterior and lateral resection margins than those obtained from low anterior resection specimens [13].

In Miles' hands, the procedure metamorphosed over a short period of time at the start of the twentieth century, from one in which he initially performed a left iliac fossa colostomy alone as a first stage, ultimately to a single-surgeon abdominal rectal cancer excision with pelvic peritoneal closure followed by a same setting perineal excision in the right lateral position. Although coining the term "abdominoperineal excision", Miles in his original work acknowledged that Czerny was probably the first person to perform a combined abdominoperineal procedure for rectal cancer in 1884, which he advocated with an en bloc sacrectomy. Given the time, this newer operation represented a significant improvement in exposure for traditionally more advanced rectal cancers than the posterior Kraske approach which was currently in vogue in both Europe and the United Kingdom for more proximally located rectal tumours [14].

Miles' manual dexterity became legendary, reducing the overall operative time of the single-handed abdominoperineal excision of the rectum to as little as 30 minutes; a feat which was reported in one of Miles' obituaries as "..a calm, unhurried atmosphere about the theatre which made the whole performance seem at first somewhat slow and where there was an economy of movement and an effortless ease which only skill and experience could bring about…" [15]. Such a surgical reputation rendered the Gordon Hospital in London (where Miles performed most of his rectal work throughout his career), a world renowned centre of rectal surgery at the turn of the twentieth century, attracting surgeons such as the Mayo brothers and Lord Moynihan as well as surgical assistants like Cecil Joll, Jocelyn Swan and Cecil Rowntree. This was historically at a time when the earliest reported mortality for rectal cancer resection was as high as 50% with an overall 3-year cancer-specific survival of less than 20% [16]. Miles' abdominal operation at the time improved the cancer-specific survival figures by eliminating those cases with evidence of intra-abdominal spread, reducing the initial perioperative mortality to around 18% [17].

On a personal level, the origins and background of William Ernest Miles provide little to expect the makings of a great surgeon. He was born in Trinidad on 15 January 1869, transferring after local schooling where his father William Miles was headmaster at Queen's Royal College, to England and qualifying as an MRCS, LRCP surgeon in 1891 at St. Bartholomew's hospital, becoming a Fellow of the Royal College of Surgeons in 1894. There he started as a Demonstrator in Anatomy between 1896 and 1899, becoming house surgeon to David Goodsall at St. Mark's Hospital after brief stints in Oxford at the Radcliffe Infirmary and London at the Metropolitan Hospital [18]. His collaboration with Goodsall, to whom he dedicated his textbook on rectal surgery in 1939 [19], resulted in their classic masterpiece of rectal surgery at the time [20] and catapulted him to a dual appointment at the Royal Cancer Hospital (now the Royal Marsden Hospital) in 1899 in surgical collaboration with Sir Charles Ryall and the Gordon Hospital for Diseases of the Rectum where he produced most of his outstanding work as a dedicated rectal surgeon before this had become a formal specialty. During this period, Miles also did much to clarify the anatomy and management of haemorrhoids and their relationship to the superior haemorrhoidal vessels which we take for granted today, as well as outlining definitive treatments for the scourge of anal fistula [21], both predating and influencing the classifications of Milligan and Morgan [22] and Parks [23]. His pecten band and 'pectenotomy' as part of the anatomical basis of haemorrhoids and anal fissure [24] bears little histological scrutiny today, but it held sway for much of the last century forming the basis for Goligher's internal sphincterotomy [25].

He was an experienced territorial soldier winning the Territorial Decoration. During World War I, he served as a Lieutenant Colonel and operating surgeon in Ypres commanding the Number 7 Red Cross Hospital, transferring as consulting surgeon to Etaples near the Pas de Calais and as the Division Commander of the 56th General Hospital there. He was proud of his Irish forebears (on his mother Amelia Bailey's side), who he claimed had served with Wellington in the Crimean peninsula, although somewhat

sadly there are no known surgical diaries relating to his wartime experiences [26]. Outside of his surgical practice, he was an avid horse racing fan (maintaining a regular box at Ascot), a keen lawn tennis player, boxer and steeplechase rider, not missing the running of the Grand National for almost 50 years. A famous story is one where he enticed a fellow Irish surgeon to the races showing him how to bet on 5 consecutive winners, to which the Irish surgeon suggested that Miles probably had no need to labour at surgical work at all given his skill in betting [27].

He was bestowed many surgical awards during his active career including an Hon FACS (1930), an Hon FRCSI (1934), the Lettsomian Lectureship, Presidency of the Proctological Section of the Royal Society of Medicine, membership of the National Radium Commission, Honorary Fellowship of the American Proctological Society, Foreign Associateship of the French Academy of Surgery and the position of Consulting proctologist to the Queen Alexandra Military Hospital in Millbank. He was described in his early years as "somewhat irascible and uncompromising in his nature," a characteristic perhaps holding up his appointment to the St. Bartholomew's Hospital staff [28]. He was not, however, immune to frivolous lawsuits with a famous court case directed against him in 1930 on the allegation that he left a pair of artery forceps inside a female patient; the writ being issued by the defendant some 7 years after the operation. Miles was acquitted showing that the forceps had been left there some years after the alleged incident by a French surgeon. After the death of his first wife, he married Miss Janet Mary Loxton in 1944 with no issue from either marriage. He was reported to be working up until his death at 106 Hallam Street in London on 24th September 1947 after a prolonged period of failing health. At his funeral at Golders Green Crematorium, the eminent surgeon Sir Gordon Gordon-Taylor gave the valedictory oration [29].

During his tenure he showed himself to be a surgical progressive, editorializing in the Lancet on behalf of the admission of women to the Royal College of Physicians and the Royal College of Surgeons (RCS) at a time when the RCS had adamantly decided that it was not in the interests of the College for their admittance [30]. Here, he decried those who had argued that "it was a horrible sight to see women operate," noting that it could be "equally horrible to watch some men operate!" Women at the time were deemed to "faint at the sight of blood and therefore be incapable of arresting haemorrhage" with College members arguing on the "immorality of educated women even achieving surgical chairs and God forbid, actually teaching men." Here, the prevailing view was that women in surgery represented "morbid products" and were more "suited to the pulpit than the Presidential Chair of the Royal College of Surgeons" [31]. The consensus at the time of the College was exemplified by the view that "female physicians are a luxury we can dispense with" and the certainty that "a woman who undertakes the revolting though beneficent duties of the operating surgeon, unsexes herself" [32]. Against this rhetoric Miles was virtually a lone voice in favour of women's admission to all aspects of Collegiate life. By current comparisons, Miles did not publish a great deal, with only a few case reports [33, 34] and commentaries on the construction of some specialized instruments [35], one of which is the forebear of the haemorrhoid grasper that we use today for banding [36].

Although he was not the first to excise the rectum for cancer nor the first to describe a combined abdominoperineal technique, his name has become forever synonymously associated with this combined (and now synchronous) procedure, creating a radical change in the philosophy of resection and en bloc lymphadenectomy. In this regard, only Heald and colleagues have provided a new concept towards the conduct of this operation in the last 100 years [9], but it remains fascinating today that we appear to be coming full circle in providing wider perineal and pelvic floor resections alongside total mesorectal excision for low rectal cancers as part of the 'new' abdominoperineal excision procedure [13]. One can only assume that Miles is influencing current coloproctology as much as he ever did.

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