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Short Communication

Rivalry, Serendipity and Female Touch in Endoscopy

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Abstract

The earliest exploration of the interior of the human body was attempted in antiquity by Greek, Roman and Arab physicians. Our aim is to turn light on the great efforts done before and unveil the role of females especially till we have the current endoscopes.

Keywords: endoscope; instrument; light; diameter and female

Al-Zahrawi

Philipp Bozzini, a German urologist was the first who tried to look into the hollow cavities of the human body by conducted light and published his experience with the Lichtleiter (light conductor) that composed of a bees wax candle as light source and a silver mirror. A speculum 'urethro-cystique' was demonstrated by Pierre Salomon Segalas to the the Academie des Sciences in Paris, 1826. This was modified from the Bozzini instrument and enabled Segalas to diagnose disorders of the urethra and bladder. It had a safety feature in a gum elastic catheter as introducer, in the Boston Medical and Surgical Journal, an American, John Fisher, published an account of an instrument 'involving the same principles as Segalas a year later but elongated and angulated due to a shy female who recruited the idea to his mind, another urologist in Paris, Antonin Desormeaux, introduced the use of a lamp burning a mixture of alcohol and turpentine 1853. Adolf Kussmaul with the good sense to use a sword-swallower for the demonstration, passed down the oesophagus into his subject's stomach a hollow, rigid metal tube, the first gastroscope [1]

He repeated the procedure several times on his female housekeeper [3]

A Viennese instrument maker, Joseph Leiter had worked on cytoscopes with the urologist Maximillian Nitze. Leiter and Nitze had some success when they devised a method of cooling the lamp 1870 and followed up a successful cytoscope with a crude gastroscope, in 1879. Carl Stoerk and Freidrich Semleder had devised oesophagoscopes but had failed to

overcome illumination difficulties. Stoerk then interested Johannes von Mikulicz in the problem. This Polish surgeon had been the assistant of the redoubtable Viennese surgeon Theodore Billroth. Leiter was free to begin work with von Mikulicz. They shifted the light to the distal end of the tube but retained the angulation of the shaft. Chevalier Jackson, a prominent American exponent of bronchoscopy used open- tube rigid oesophagoscopes and gastroscopes, with a side-attached aspirating tube at the end of the nineteenth century. Rosenheim in1896 published his experience with a triple-tube gastroscope in Berlin.

In 1898, George Kelling in Dresden, devised a gastroscope with a flexible lower segment, the tip of which could be angulated with a rather clumsy system of wires controlled proximally; this instrument did not find wide favour. In 1911, Elsner reintroduced, the Rosenheim instrument modified with the safety device of a rubber tip for introduction. Despite the lens system being easily obscured by mucus and gastric contents, it was well taken-up and remained the standard gastroscope for the next 20 years.

Hoffman, an optical engineer, had shown that light, and an image, could be conducted around a bend with a flexible tube containing a row of prisms and lenses. Rudolf Schindler, got an old Elsner instrument while browsing in a shop making a facility for insufflating air which overcame the lens smearing In 1920. Schindler used the modified Elsner gastroscope until 1932 when he reported his experience with a semi-flexible successor in which the lower third was replaced by a flexible bronze spiral covered in rubber, resulting from a collaboration with the Berlin instrument maker George Wolf (1873–1938). Together they devised an inner tube filled with short-focus lenses which could be bent in any direction to an angle of 34º without visual distortion. Schindler's wife Gabriella Winkler offered him great support. Edwin Boros in the US, altered the Jackson instrument by having the most distal portion of the shaft rendered as a metal spiral coil, as Wolf–Schindler gastroscope; this section was then straightened out with a rod after full insertion.

Avery Jones devised a slim instrument, but Sircus found the internal diameter inadequate for the passage of bougies large enough to relieve strictures and the distally placed bulb was easily covered in blood and mucus, The Genito-Urinary Manufacturing Company made for Sircus in 1956 a wide-bore oesophagoscope which overcame the disadvantages of the Avery Jones model. Fibreoptics began in three mealtime conversations in 1954. Timothy Counihan, a cardiologist at the Hammersmith Hospital in London, while lunching in the canteen with Keith Henley, a gastroenterologist, mentioned seeing in Nature a paper entitles 'A flexible fibrescope using static scanning' which might have a practical application. A short while after this conversation, Henley was at AnnArbour, Michigan and during lunch with a Gastroenterology Fellow, Basil Hirschowitz, Henley heard from Hirschowitz of his research into the production of a miniature camera, Henley told Hirschowitz about the paper in Nature, who then lost no time in telephoning Kapany, one of the paper's authors, to meet him in London the following week. In the same issue of Nature was a communication from Delft in Holland by Abraham Cornelis Sebastiaan van Heel describing the preparation of flexible image rods with bundles of transparent plastic each coated with a layer of low refractile index and then with a thin coat of black paint. Thus, leakage of light through their walls was prevented and an image projected on to one end of the bundle was recoverable at the other end, undistorted. In the paper by Hopkins and Kapany it is claimed that Hopkins thought of the idea in 1929 and only learned later of Baird's 1927 patent. Karl Storz had suggested to Hopkins (Professor of Applied Physics at Imperial College, London) the idea of coupling the transmission of light using fibres, together with a rod and lens optical system within an optical shaft to transmit images, an extension in effect of the idea of Hoffmann mentioned before with Kapany, Hopkins researched the optimum way to coat glass fibres of 0·0025-inch diameter and to arrange them in a bundle so that the spatial relationship of each fibre to its neighbour remained unchanged throughout the length of the bundle. Light and image could then betransmitted even if the bundle was bent through 360º. They suggested the principle could replace the lens in endoscopes. Hirschowitz returned to Ann Arbour with samples of glass fibres from Fibreglass Ltd in England and interested the Assistant Professor of Physics, C Wilbur Peters, in this potential for advancing endoscopy. Together with a student, Lawrence T Curtiss, Peters set to work. By 1956, Curtiss had resolved the problem of eliminating leakage of light through the wall of individual fibres by coating them with a mixture of highly refractive glass core and low refractoriness, melted together. By 1957, they had an assembly of a working fibre bundle of adequate length, a light source intense enough for color photography, a system for applying torque and a waterproof coating. Hirschowitz then passed this bundle on himself without medication, Hirschowitz demonstrated the prototype 1957. The decade 1962-1972, a series of other modifications by both American and Japanese instrument makers resulted in endoscopes with separate channels for suction and the introduction of water and air, controlled tips. In 1966 Willie Watson, a Glasgow gastroenterologist, viewed the Papilla of Vater with a duodenum-entering endoscope and suggested that the ampulla could be explored. Indeed, in 1965, two radiologists, Keith Rabinov and Morris Simon, had cannulated the pancreatic duct with a tube introduced through the mouth and fluoroscoped into position. In 1968, the ampulla was cannulated per endoscopy. Due to ideas from Itaru Oi and K Tagaki, Japanese endoscope manufacturers produced cannulae with four-way tip control which greatly widened the field of investigation by 1970. Classen and Demling split the Papilla of Vater with a bowstring wire diathermy enabling the removal of a gallstone from the biliary tract 1974. In Britain Peter Cotton, became the premier exponent, extending the procedures through from endoscopic sphincterotomy and removal of calculi to lithotripsy and therapy of biliary and pancreatic malignancy.

Blankenhorn and colleagues, in order to measure the length of the entire alimentary canal, and to obtain samples of contents at different levels, had passed an anchored, long, soft, fine bore tube through the mouth and to appear at the anus in 1955. Luciano Provenzales and Antonio Revignas in Sardinia, repeated the procedure but modified it by the addition of a simple pulley system assembly with a small loop in the distal end of the 4·5 m proximally fed tube through which they threaded another 3m tube doubled on itself. When the combined system emerged from the anus, a Hirschowitz side viewing gastroscope was attached to the end of it, and then by gentle pushing and traction on the pulley, the gastroscope was successfully passed to the caecum. Colonoscopy was born. Paul Salmon in Bristol was a prominent early exponent, and Christopher Williams became the supreme practitioner and teacher of colonoscopy in Britain.

In the US, Bergen Overholt developed along with the Eder Instrument Company a fully flexible sigmoidoscope then other American and Japanese models soon followed. The superiority of this instrument for both patient and doctor. In 1983 the first endoscope without fibreoptic transmission of the image was produced by Welch Alleyn Incorporated in New York. The use of ultrasonic pulses for changes in tissues was promoted 50 years ago by JJ Wild. Later with miniaturized probes passed through the endoscope channels, has imaged lesions [1]

Finally, we end with the dictum of Hippocrates (second figure) [4]

Hippocrates (c.460-c.370 BC)

whom the article begins with: "First, do no harm" [5]

Conclusion:

Joseph Leiter had worked on the development of cytoscopes with the urologist Maximillian Nitze however, problems happed later. Von Mikulicz who contributed in about 18 items of procedure and pathology are eponymously associated with him died of carcinoma of the stomach at 55 years of age, Schindler was arrested [1] rivalry occurs between American and Japanese companies, serendipity occurs when Shindler found Elsner's instrument and female touch was evident in John Fisher modifications, Adolf Kussmaul housekeeper and the great wife of schindler. These events confirm that the efforts of all mentioned scientists are ineffable, female role should be appreciated and more are awaited in the future.

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References:

1. Sircus, W. (2003). Milestones in the evolution of endoscopy: a short history. Journal of royal college of physicians of Edinburgh;33(2):124-34
2. Frontiers, science news, (2025). young minds Alzahrawi the father of modern surgery.
3. Dunea,G and Franklin,Jl(2023). From candles and swallowing swords to gastroscopy, A Journal of Medical Humanities 2023
4. Wellcome Trust Corporate Archive M0000745: Composite portrait of Hippocrates (c.460-c.370 BC) designed by Albert Anker
5. Shmerling, R., H. (2020). First, do no harm.

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