MEDICAL HISTORY

Samuel Fenwick, M.D., F.R.C.P. (1821-1902): Physician and Gastroenterologist

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Samuel Fenwick was a Victorian. In the year of his birth Princess Victoria was aged 2, and he outlived the Queen by one year. He became known as a successful physician and teacher in London. In common with many Victorian physicians he was a morbid anatomist as well as a clinician, and he applied these skills particularly to the study of abdominal diseases. His achievements in clinical gastroenterology were considerable, but his discoveries and contributions in his chosen specialty are not now widely recognized.

Training and Practice in Newcastle

He was born at Earsdon House, near Newcastle upon Tyne. His eldest son, when writing of his father, described him as "the younger son of a younger son," and he had to make his own way in life (Fenwick, 1930). At an early age to the surprise of his parents he expressed a determination to become a doctor; none of his family had entered the medical profession during the previous 200 years. At 15 he became apprenticed as a resident pupil in the Royal Infirmary at Newcastle, and three years later his name was included in the list of students attending the session of 1839-40 at the newly established Newcastle School of Medicine and Surgery.

We are told that he spent six strenuous years at the Royal Infirmary, qualifying with a diploma from the Royal College of Surgeons in 1842. Little is known of his life as a student. During his first year at the new medical school an unfortunate event occurred, which gained wide publicity in 1840. It concerned an infringement of the recently introduced Anatomy Act, which stipulated that 48 hours should elapse between death and the removal of an unclaimed body for the purpose of anatomical study. Embleton (1890), who was an eye-witness, has left a description of the scene in Newcastle.

"It happened that an Irish woman named Sophia Quinn, a pauper, who had stated that she had no living relatives . . . died . . . , and the lecturers having been informed that the Poor Law Guardians would at all events put no obstacle in the way of their obtaining the body, but would risk no responsibility in the matter, took the necessary steps for the removal of the body to the Surgeons' Hall. When this was being effected some Irishmen, who had been following the coffin and bearers, finding that the body was not being carried as they expected to the Ballast Hills Cemetery, went for the police, and after that to the Mayor, who before long, summoning the police, and accompanying the Irishmen to the Surgeons' Hall, demanded admission with threats of violence at the door of the garden. As soon as it was known that it was his Worship who was actually there the garden door was at once opened, and also the door of the Hall, when in rushed the Mayor, police and Irishmen, and an Irish woman by name Rosanna Rox, an excited howling, indiscriminate mob, in the most undignified, violent and tumultuous manner. His Worship was

threatening and declaring: 'Ah'll nut show ye a ha'porth o' lenity!' Not the least opposition was attempted. It could not have been worse had we been murderers. The rooms were rapidly searched and the body recovered. It was carried off in triumph by the Irishmen. . . ."

Embleton explained that subjects for dissection were rare, the desire of the lecturers to provide the means of study was great, and they had not realized that the necessary 48 hours had not expired.

At the age of 21 Fenwick started in practice in North Shields, where "his abilities and family name soon brought him success" (Brown, 1955). His home was in a square overlooking the harbour of North Shields and the entrance to Tyneside. We obtain a glimpse of his life as a practitioner from the description of a day's work given by Dr. Robert Peat, who later succeeded to the practice and was recalling his

Samuel Fenwick

time as surgeon's apprentice to Dr. Fenwick (*Shields Weekly News and Wallsend News*, 1965). He accompanied Dr. Fenwick early every morning on his rounds. At 8 a.m. they returned to Dockway Square, where they breakfasted, invariably off chops. At 9 a.m. they were ready for morning surgery, which, when completed, meant another round of visits before lunch. Visiting continued in the afternoon and there was the usual evening surgery. At 8 o'clock precisely Dr. Fenwick's carriage, in common with those of other practitioners, drew up to his door, ready to take him on his final round to make sure that his patients were comfortable for the night.

But he was not content to confine his activities to a demanding practice. After three years he took a part-time appointment as Lecturer in Anatomy and Physiology in his

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medical school, and later, in 1848, he became a lecturer in Pathological Anatomy, a position he held for the next 15 years. By this time he had published a study on the outcome of patients submitted to surgery, notably amputations, in the Newcastle Infirmary, with a discussion on causes of post-operative death. He analysed the results in his own hospital and compared the figures for mortality with those from other hospitals in Britain, France, Germany, and America. The paper illustrated the surgical scene as it existed 17 years before Lister obtained his first successes with the application of carbolic acid. "The assertion that one person out of every three who suffers an amputation perishes, would have been repudiated a few years ago as a libel upon our professional value; and yet such is the rate of mortality observed in nearly 5,000 cases . . . It is a striking illustration of the necessity of accurate calculations, that we find a celebrated hospital surgeon supposing that only 1 out of 20 died after this operation . . . And how shall we reconcile the returns of military surgery with the boasted success of many of our military authors?" (Fenwick, 1848).

He continued his association with his medical school during the turbulent years of its disruption into two separate factions, his loyalty lying with the majority party. The union of the two colleges was effected in 1857; he retained the lectureship in pathology and was elected to the College council. During these years he also continued to live the life of a busy practitioner and clinician. His professional reputation became wide in the north of England, and in 1859 he began a consulting practice in Newcastle.

Removal to London

In 1863, Fenwick, then aged 42, resigned his appointments, left his practice, and moved to London. We are told that "such a step was so unusual, indeed almost unique, in those days, that it caused much surprise and comment, chiefly of a pessimistic character, as to the possibilities of his success" (Fenwick, 1930). We can only guess at the motives behind his decision. Comments that preface his report of surgical operations performed in Newcastle upon Tyne Infirmary (Fenwick, 1848) give a clue to thwarted ambition. "The conclusions I have arrived at may not be in all cases satisfactory, yet . . . may prove of some assistance to others who, with more time and greater opportunities may hereafter pursue the subject." He also mentioned that he collected the statistical labours of other surgeons "as far as the circumscribed limits of a provincial library afforded me."

With personal and academic aspirations, but with no immediate prospect of a hospital appointment, he left his native Newcastle to try his fortune in the metropolis. A struggle for recognition lasted about two years, after which he was appointed Assistant Physician to the City of London Hospital for Diseases of the Chest. Three years later, in 1868, he obtained a similar post at the London Hospital and became a lecturer at its medical school. A medical school had been inaugurated at the London Hospital in 1780 as a private venture on the part of the staff (Clark-Kennedy, 1962). In 1854 the buildings of the Medical College were opened and described at the time as "the most convenient, salubrious and handsome school in the metropolis." The arrangements for the staff of the college during its infancy were, however, far from ideal. Fenwick lectured without remuneration and in some cases paid demonstrators out of his pocket (Brown, 1955).

Undergraduate Teaching

A picture of clinical medicine in the 1860s was recently given by Keele (1968). It was a decade during which the language of medicine became modernized into terms we use today, so that we can still refer to its clinical experience usefully. In

preceding years the traditional observation of a patient had been transformed into the formal clinical examination. By the mid-nineteenth century quantitative measurements and methods of applied physiology were being added. Chemical tests and microscopy came into routine use in the years 1860-70. Such was the stage for Fenwick's work and teaching at the beginning of his new career.

He was apparently soon held in high esteem and was regarded as an excellent clinical teacher (Morris, 1926). His ideas and methods are contained in *The Student's Guide to Medical Diagnosis* (Fenwick, 1869). This book, in editions brought out over a period of some 30 years, became the vademecum for successive generations of students during their introduction to clinical medicine. At a time when physical methods of diagnosis were proving so rewarding he warned against the danger of underestimating the patient's symptoms. "Physical signs cannot be exclusively relied upon for the formation of a diagnosis: the symptoms and history of a case must also be taken into consideration. It is generally difficult for the young student to guide the patient's account in such a way as to derive the necessary information from the details. Most persons ramble in describing their symptoms, and many insist on giving their own or other person's opinions as to the nature of their disease, instead of confining themselves to the narration of facts. You will best overcome these difficulties by conducting your examination in a systematic manner, and by having a definite aim in every question you ask." The student must avoid "unnecessary staring at the patient," but should "educate the eye to catch the smallest deviation from the normal condition, and at the same time try to put the patient at his ease, so that he may be the more ready and willing to answer enquiries."

Many of his recommendations to the new student cannot be bettered a century later. "Remember to commit all your observations to writing. A number of well-recorded cases is invaluable . . . Describe only what you see and hear, do it in the simplest language, and do not allow your expression to be guided by any preconceived opinion as to the nature of the disease you are investigating. Be exact in your description of physical signs . . . In this way, with ordinary industry in collecting cases of disease and perfect honesty in recording your observations, you cannot fail to surmount the difficulties of medical diagnosis."

By the time he started teaching students at the London Hospital Fenwick was an experienced and shrewd clinician. *The Student's Guide to Medical Diagnosis* shows too a gift for clear exposition. Much contained in the companion volume he wrote in 1879, entitled *Outlines of Medical Treatment*, is, by the nature of the subject, ephemeral. But the same honest and critical approach prevails in counselling students. "The student looks upon a physician as ignorant or neglectful who does not introduce into his patient's system various vegetable or mineral substances, whenever he is called upon to prescribe for him. But, in reality, drugs are only a part of the treatment of disease . . . nay, sometimes they positively do mischief."

Clinical Microscopist

Soon after arriving in London Fenwick, in common with many others of the period, used the microscope as a research tool. It was said of the early 1860s that "the microscopic mania was raging like some fierce epidemic" and that there were a number of "shallow pretenders" who were exploiting microscopy (McMenemey, 1968). Fenwick was, however, a serious investigator, and in his first paper (Fenwick, 1864) gave a straightforward account of the epithelial changes in the gastrointestinal tract, which he found accompanied scarlatina. In spite of the anatomical changes in the stomach, he noted that pepsin production was not prevented, and he even sug-

gested that the scarlatina poison might have a stimulating action on epithelial cells rather than simply inducing an inflammatory effect.

He set himself an ambitious task in his next study, entitled "Morbid changes in the stomach and intestinal villi present in persons who have died of cancer" (Fenwick, 1865). The high hopes held at the time for the usefulness of microscopy are illustrated in Fenwick's introduction: "The microscope has shown us no local changes which precede the formation of cancer; consequently we are unable to foresee and powerless to prevent its invasion. If we could discover that anatomical or functional alterations take place in tissues other than those obviously affected, a careful observation of their conditions might warn us of the approach of the disease and we might be enabled to avoid any circumstances likely to excite its development." Though he admitted that the evidence he could obtain was slender, he preferred the suggestion that some changes in the digestive canal were predisposing causes of cancer, rather than secondary to malignancy. It is not possible from his descriptions to recognize gastrointestinal disorders now accepted as premalignant, but the existence of such conditions was foreseen.

It would have been surprising if Fenwick, first and foremost a clinician, had not applied the microscope to practical aspects of diagnosis. Sixteen years before the discovery of tubercle bacilli he tried to correlate the presence of lung tissue in the sputum of tuberculous patients with the degree of softening and cavitation of lesions in the lungs (Fenwick, 1866). In patients with gastric disorders he reported finding epithelial mucosal fragments and cells in vomitus (Fenwick, 1868). Some years later he urged the careful microscopical examination of pus from hepatic abscesses. "The amount of hepatic or pulmonary structures that may be present is the best indication of the gravity of the case" (Fenwick, 1877a). It had taken two centuries for microscopy to find a use in routine diagnosis. Fenwick made some contribution to the rational acceptance of the "microscope in medicine," the title of a lecture course given by William Osler in 1874 (mentioned by Keele, 1968).

Atrophy of the Stomach

Fenwick's clinical acumen combined with his sustained interest in the microscopy and secretory properties of the stomach gained him eponymous status. Primary gastric mucosal atrophy was at one time known as Fenwick's disease.

The editors of Addison's (1868) papers, published by the New Sydenham Society, had pointed out that the "anaemia" and "melasma Addisonii" were not pathologically connected. "Whilst in the one case the patient is pale, flabby, breathless and perhaps fat, he is in the other spare, of a brownish hue, manifesting a good colour in his lips and muscles, so that his condition is one rather of asthenia than anaemia." In four cases which Fenwick described the symptoms were "those of anaemia, not of asthenia, and . . . in all, a well-marked lesion of the glandular structure [of the stomach] was discovered after death, capable of accounting for the deficiency of blood exhibited during the life of the patients" (Fenwick, 1877b).

In addition to microscopic evidence of glandular atrophy, he noted that the stomach showed no signs of "postmortem solution" and he demonstrated pronounced impairment of peptic activity. The procedure he used he described as follows: "After the microscopical examination was concluded, I scraped off the mucous membrane of the stomach and made an infusion of it with distilled water. To two ounces of distilled water was added half a drachm of hydrochloric acid. A cube of hard-boiled albumen of egg was suspended in this mixture and was digested in a water-bath at blood heat for nine hours. At the end of this period the albumen was slightly softened on the surface, but its weight was not lessened." A finding he reported during life in these patients was the leucopenia of

pernicious anaemia: "A drop of blood . . . showed no increase, but rather a diminution in the number of the white globules." In discussing pernicious anaemia he summarized his most important contribution to medical knowledge: "it seems however, not to have been sufficiently borne in mind that the anaemia that so rivets the attention of the practitioner is only a symptom, and may arise from an imperfect performance of the functions of any of the organs engaged in the formation of the blood. I have shown . . . that general atrophy of the gastric glands is accompanied by intense anaemia and that, therefore, some of the cases of this disease must be referred to it" (Fenwick, 1880).

Other Contributions in Gastroenterology

The high quality of Fenwick's work is illustrated by observations and recommendations concerning other abdominal diseases. From his extensive writings three subjects deserve special mention: his advocacy of early appendicectomy, his case reports on "strictures of the ileocaecal valve," and some comments on anorexia nervosa.

Fenwick wrote copiously about appendicular disease (1884, 1889), and he was a pioneer in recommending early surgery for perforation of the appendix (1884). "Theoretically it would seem to be much better if we could cut down upon the appendix as soon as the diagnosis was tolerably certain, tie it above the seat of perforation, and remove from its neighbourhood any concretion or decomposing material that might be the cause of irritation." Cope (1939) pointed out that Fenwick's excellent advice met with little or no response, in contrast to that given later by Reginald Fitz who, at the first meeting of the Association of American Physicians, held in 1886, read a paper on "Perforating inflammation of the vermiform appendix, with special reference to its early diagnosis and treatment." Sir Frederick Treves, who was a surgical colleague of Fenwick at the London Hospital, remained, on the whole, convinced that the interval operation was the correct procedure for appendicitis and seldom removed the acutely inflamed appendix (Shepherd, 1968). Fenwick's recommendation was still not heeded at the time of his death in 1902. That was the year in which King Edward VII developed appendicitis, just before the planned date of his coronation. Fortunately he recovered with conventional treatment and eventual drainage of the abscess.

No priority claim can be made for Fenwick in describing what we would now recognize as Crohn's disease. Similar cases had been reported previously by Combe and Saunders (1813) and Abercrombie (1828). But in his book *Clinical Lectures on Some Obscure Diseases of the Abdomen* (1889) Fenwick described several particularly convincing examples. The necropsy findings in a woman aged 27 illustrate the features he recognized. "Many of the coils of intestine were adherent, and a communication existed between the caecum and a portion of the small intestine adherent to it, whilst the sigmoid flexure was adherent to the rectum, and a communication also existed between them. The lower end of the ileum was much dilated and hypertrophied, and the ileo-caecal valve was contracted to the size of a swan's quill."

Fenwick's interests extended to the "nervous affections of the digestive organs," the title of the second part of a book published in 1880. He introduced the subject with characteristic caution. "Every practitioner must have treated cases of disorder of digestion which he was inclined to attribute to a mere nervous derangement, which have been eventually proved, perhaps by their fatal result, to have depended upon disease of an inflammatory or malignant character. I have been careful, therefore, to confine the following examples of the neuroses of the digestive organs to such as I have been able personally to watch for a length of time, and which seemed to me, after their termination, capable of no other explanation."

Gull (1868) and Lasègue (1873) had independently described typical cases of anorexia nervosa, Gull calling the condition by that name for the first time in 1874. Fenwick (1880) lent his support for the designation anorexia nervosa "as simply expressing the main and most important symptom, without committing ourselves to any theory as to the cause . . ." His case reports and recommendations on management reflect his understanding of the condition. Dally (1969) drew attention to Fenwick's recognition of the increased incidence of anorexia nervosa in the upper classes of society, rather than among those who "had to procure their bread by daily labour."

Personality and Practice

Samuel Fenwick's career is testimony to his industry but tells us little of his personality. In *Munk's Roll* (Brown, 1955) he is described as a reticent but kindly man who, without ever appearing hurried, accomplished an immense amount of work. He was remembered by a descendent for his puritan rigour of thought and speech.

Professionally he was best known as an admirable diagnostician in all departments of medicine. "Thanks to the organisation of his private practice, with three separate dressing-rooms, he was able to see more patients than most consultants, and his reputation was such that his private practice remained as large as ever, after he had retired from hospital work in 1896" (Brown, 1955). Despite his age, the demands of the public on him continued to the last, when, after an attack of influenza in the autumn of 1902, he began to fail in health and gradually grew weaker. He died on 11 December and was buried at Kensal Green (Fenwick, 1930).

Fenwick's writings remain as his memorial. In the perspective of a century the importance of many of his contributions to gastroenterology can be appreciated.

I had the privilege of discussing Dr. Samuel Fenwick with his grandson, the late Judge C. B. Fenwick, Q.C., who gave me access to material concerning his family.

The illustration of Dr. Samuel Fenwick is taken from *Pioneers in Acute Abdominal Surgery* by Sir Zachary Cope, who kindly allowed it to be reproduced.

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ONE HUNDRED YEARS AGO

From a Clinical Lecture on a Case of Influenza by C. Handfield Jones, M.B., F.R.S. in the British Medical Journal, 23 July 1870

Too many are inclined, I fancy, to look upon influenza as essentially a bronchial catarrh; but I quite agree with Graves and Blakiston that its cause acts in a special manner on the nervous system, and that it is no mere inflammation. The peculiar prostration, the headache and other nervous symptoms, which are not unfrequent, differentiate it markedly; besides the suddenness of invasion, which is often very remarkable. I will narrate a case briefly to you which illustrates these points well. T.P., aged 32, had been in hospital three weeks under my care for epididymitis, and was nearly well, when he was taken one morning, about 10.30, with severe headache, prostration, and fever. His pulse was very weak, 135, and his temperature 106.5, the same afternoon. There was some deficiency of breathing at the right posterior base but no marked dullness or crepitation. The lungs con-

tinued free; the temperature and pulse soon declined to a lower, though still febrile rate; but his brain remained seriously enfeebled for more than a fortnight after his seizure, and he convalesced very slowly. Giddiness and prostration of mental activity were the most remarkable phenomena. Ten days after his seizure, he staggered and fell down when he got out of bed; and, a week later, he was so torpid and silent that I had some difficulty in getting him to answer questions. His pulse and temperature had, however, become natural, except that the former was very feeble. Here it was manifest that the stress of the disease fell altogether on the encephalon, and that the lungs were very slightly affected. In our first case, it was much the same, though there seems to have been a greater amount of catarrh.