Functional Bowel Syndrome: Also a “Crohn” Disease?

Commentary on: *Functional and Nervous Disorders of the Stomach and Alimentary Tract*

Eli D. Ehrenpreis

Published online: 28 December 2013
© Springer Science+Business Media New York 2013

Burrill R. Crohn (1884–1983), a pioneering gastroenterologist, is best known for a manuscript published in 1932 in the *Journal of the American Medical Association*, coauthored with Leon Ginzburg and Gordon Oppenheimer entitled “Terminal Ileitis: A New Clinical Entity” [2]. In this publication, he described 14 cases of a granulomatous inflammation of the distal ileum. Although descriptions of the condition had arguably been published previously, this landmark paper described clinical findings in the largest group of patients with inflammatory bowel disease at that time, and was the source of our current use of the author’s name for the disease.

Dr. Crohn was an interesting man who practiced medicine into his 90s, primarily at the Mount Sinai Hospital in New York, where he worked for over 40 years. A true polymath, he also painted and studied Civil War history. Like many of his contemporaries, who worked when the field of gastroenterology was still in its infancy, his career was devoted to the understanding and management of a variety of vexing conditions, including peptic ulcer disease, gastrointestinal cancer, and functional bowel disorders. Dr. Crohn’s premise underlying his description of functional bowel disorders, republished in this issue of *Digestive Diseases and Sciences* [1], is that the gastrointestinal tract is a target for “external forces” including stress, personal problems, and family history that ultimately predispose to

the development of what Dr. Crohn termed the “neurotic stomach.” Based on contemporary understanding of functional bowel disorders, this expression has a certain quaintness, as it reflects the prevailing interest in psychoanalytic theory. At the time of this manuscript’s publication, Sigmund Freud’s picture had already appeared on the cover of *Time*, and Freud’s name comes up twice in the article, beginning with its introductory sentence. Although our current understanding of functional bowel disorders includes a number of more recently appreciated non-psychiatric factors associated with the pathophysiology of these conditions, including intestinal dysbiosis, dysregulated gastrointestinal neurotransmitters, and distorted brain-gut activities, Dr. Crohn’s article contains many insights that remain relevant to the care of these patients in the twenty-first century.

The article begins by suggesting that the burden of functional gastrointestinal (GI) conditions exceed that of the other major classes of organic diseases affecting the GI tract recognized at that time (ulcers, gallbladder disease, and cancer). Of interest, current literature supports this premise. In 2008, an annual total of 11,648,000 ambulatory care visits for functional gastrointestinal disorders in the United States occurred, compared with 7,578,000 visits for the other three GI conditions combined [3]. Dr. Crohn goes on to describe organic gastrointestinal disorders as having a basis in either secretory or motor abnormalities. Although we would certainly agree with the definition of “true cardiospasm” (achalasia) or gastric atonia as organic motor disorders, our lines today would be blurred in terms of defining these as functional versus organic disorders. On the other hand, we would likely not classify disorders of suspected psychiatric etiology, such as rumination syndrome or anorexia nervosa, as intrinsic gastrointestinal motor diseases, while we would recognize associated motility disturbances.

The original article *Functional and nervous disorders of the stomach and alimentary tract* by Burrill B. Crohn published in *American Journal of Digestive Diseases and Nutrition*, October 1934, Volume 1, Issue 10, pp. 773–777. Springer.

E. D. Ehrenpreis (✉)
Gastroenterology Division, NorthShore University
HealthSystem, Evanston, IL 60201, USA
e-mail: ehrenpreis@gipharm.net

Functional and Nervous Disorders of the Stomach and Alimentary Tract*

By

BURRILL B. CROHN, M.D.
NEW YORK CITY, NEW YORK

THE title, "Functional and Nervous Disorders of the Alimentary Tract", is itself imposing and covers a wide latitude of symptomatic disturbances, of conditions of visceral imbalance, of emotional and neurotic upheavals and suppressions sufficient to intimidate the most facile speaker or fluent clinician, be he a Charcot, a Weir Mitchell, or a Freud. Put into one scale of a gigantic balance all the cases of ulcer, of gall bladder diseases, and of cancer, and put into the other arm of the scale all those who are suffering from alimentary neuroses, anxieties, phobias and visceral functional disturbances, and the latter arm will descend with its overpowering gravity of numbers.

The magnitude of the problem, and its quality, can better be grasped if one were to enumerate the variety of conditions, their protean manifestations and the diversity of their clinical pictures. Nervous esophageal spasm or true cardiospasm (*achalasia*); merycism or rumination; gastric atony, pylorospasm or duodenal stasis; spastic constipation, intestinal atony with flatulence, nervous diarrhea; one mentions as the more common of the motor imbalances. *Anorexia nervosa*, bulimia or disordered or abnormal appetite; gastric anacidity or hyperacidity and hypersecretion; mucous colitis, comprise some of the secretory disturbances. We are actually confronted with a diverse group of secretory disorders that bespeak, all of them, a throwing out of balance, an incoordination, of the smooth normal counterplay of vagotonic and sympatheticotonic factors in the control of the alimentary tract. Secretion, its volume and quantity; motility, delay, the control of the various sphincters, peristalsis, antiperistalsis, absorption, these innumerable functions take place normally, rhythmically, with unerring exactness as the result of the superb interplay of the stimulatory vagus or the parasympathetic system and the inhibitory activity of the sympathetic gaggionated cord. This even balance may be, in the neuroses, upset by a psychic shock (affecting a subnormal mental or emotional system), a suppression of desires, an anxiety, an unfulfilled want. The obvious manifestation is frequently a functional disturbance of the alimentary tract, or, as one more euphemistically styles the condition, "an autonomic nervous system imbalance". Back of the disorder is, how-

ever, the psychic factor, for the autonomic nervous system is automatic in its daily activity, it is not within the conscious control of the cerebrum or the higher centers, yet it is not impervious, is far from being uninfluenced by those same psychic factors that lead to the pure neuroses.

Gastro-intestinal neuroses are gastric and intestinal and abdominal only in their mode of manifestation; they are anxieties, hysterias, somatic neuroses, neurasthenias and hypochondriases in the truest sense of the word as known to every psycho-neurologist.

Or, let us consider in the more limited sense only the simple gastric or intestinal neuroses. Herein are to be included the nervous air swallows, the hosts that complain of fictitious pains and burning sensations, of aching epigastric voids, or fullness after meals; of those who have anxiety neuroses, of fear of disease, of carcinophobia, of hysterical vomiting.

Be the manifestation a motor or a sensory disorder, call it autonomic imbalance, or a gastric neurosis, the mechanism essentially is the same, the inferior mental makeup usually handicapped by an impoverished heredity, meeting in conflict an insurmountable obstacle offered by his or her environment. The abdomen is truly "the sound-box of the emotions".

THE ANATOMY OF THE NEUROTIC PERSON

With what kind of an individual are we dealing? Usually timid, afraid, lacking in self-confidence; subject to emotional instability; or, reticent and suppressed, unable to grasp the hard facts of life or unwilling to accept them, uncertain about the conduct of the past, worried and harried about future events, unable to fit himself into the harsh inequalities of life, out of sympathy with his fellowmen, with family or domestic relations, unequal to cope with his love life or solve his sex problems, such is the psychic or mental anatomy of the individual likely to be a prey to a neurosis.

Physically he is usually underbuilt, only fairly well nourished, often of the so-called enteroptotic constitution of Glenard, with cold moist palms, rapid pulse, anxious mien; with a spastic colon, exaggerated peripheral reflexes, often complicated by a hypersensibility to pain—such is his physical status. He enters the room anxiously or distrustfully, he produces a ream of paper covered with closely written notes, plus a list of questions; he is repititious, vague, unable to express himself clearly, confused as to facts; he always

*Presented before the Post-Graduate Fortnight, New York Academy of Medicine—October Session, 1934.
Submitted November 13, 1934.

Functional disorders are described as occurring from “psychic shock” in persons inclined towards neurosis. Unfortunately, in promoting this aspect of his theory, Dr. Crohn actually disagrees with his contemporaries who suggest that these conditions are an “autonomic nervous system imbalance,” terminology that would fit closely with the current understanding of functional GI disorders. Instead, he views these conditions as gastrointestinal manifestations of well-described psychiatric conditions including “anxieties, hysterias, somatic neurosis, neurasthenias, and hypochondriases.” Using estimates from an article published in 1928 entitled “Insanity Equivalents and the Gastro-Enterologists,” he reminds the reader that “one percent of the population...is emotionally and physically unfit,” connecting this fact to the likelihood of a hereditary basis for “gastro-intestinal neuroses.” Within this context, he notes that patients seem to develop their problems in early adulthood, aggravated by worries when “the individual first faces his stark environment...or after a child takes sick and sleepless night are followed by convalescence. Soon one finds neurotic symptoms...furtive hunger, belching, constipation, pains, insomnia.” Current literature confirms that functional GI conditions most commonly occur in adolescence and early adulthood.

The personality of these patients is described in detail. Qualities identified in his patients with functional GI conditions include timidity, fear, poor sense of self-esteem, and irrationality. Social problems include domestic difficulties, poor relations with peers, and sexual disorders. Although some of these descriptors appear to fit patients in our current medical practices, others seem less familiar. Nonetheless, we would agree with Dr. Crohn who bemoans the fact that economic pressures prevent appropriate time away from work and leisure activities, which he views as vital to patients wellbeing.

In describing a case of an unnecessary cholecystectomy in a women with marital disharmony as a source of her functional GI symptoms, Dr. Crohn remarkably identifies a problem that remains today, when cholecystectomy in patients with irritable bowel syndrome (IBS) occurs at three times the rate of patients without the condition [4].

In his discussion of the diagnosis of functional GI conditions, Dr. Crohn’s approach is extraordinarily similar to today’s practice of medicine. He advises that “a thorough and careful examination for organic disease is necessary before the acceptance of the first impression becomes a final conclusion.” Gastroenterologists continue to follow the practice of performing a careful history, physical examination, and appropriate additional testing for organic diseases prior to diagnosing functional GI disorders [5].

Most importantly, Dr. Crohn reminds the practitioner what we know in the present day, that a trusting physician–patient relationship is the most important aspect of care for patients with functional GI conditions [6], demonstrating his own astounding appreciation of the art of medicine. In his words, “the one single powerful means at the disposal of every physician, of every general practitioner, is his capacity for understanding, for sympathy and advice.” Reading this, one can appreciate that Dr. Burrill B. Crohn was a giant, under whose shadow gastroenterologists proudly stand today.

References

1. Crohn BB. Functional and nervous disorders of the stomach and alimentary tract. *Am J Dig Dis Nutr.* 1934;1:773–777.
2. Crohn BB, Ginzburg L, Oppenheimer GD. Regional ileitis—a pathologic and clinical entity. *JAMA.* 1932;99:1323–1329.
3. Everhart JE, ed. *The burden of digestive diseases in the United States.* US Department of Health and Human Services, Public Health Service, National Institutes of Health, National Institute of Diabetes and Digestive and Kidney Diseases. Washington, DC: US Government Printing Office; 2008. NIH publication no. 09-6443.
4. Longstreth GF. Avoiding unnecessary surgery in irritable bowel syndrome. *Gut.* 2007;56:608–610.
5. Spiller RC, Thompson WG. Rome foundation diagnostic algorithms: bowel disorders. *Am J Gastroenterol.* 2010;105:775–785.
6. Owens DM, Nelson DK, Talley NJ. The irritable bowel syndrome: long-term prognosis and the physician-patient interaction. *Ann Intern Med.* 1995;122:107–112.