

Profound Long-Term Effects of Nazism on Patient Care in Gastroenterology

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Abstract

It is common knowledge that in addition to the slaughter of millions of innocent civilians, Nazism caused direct damage to patient care by euthanasia of the handicapped, gruesome human experimentation, and ethnic cleansing of German medical schools. In gastroenterology, 53 prominent academicians living in Nazi-occupied Europe were persecuted by the Nazis. Prior studies analyzed this persecution as it related to gastroenterologists rather than to patient care. This study reports, however, that Nazi persecution led to a delay of more than one generation in the clinical application of major inventions by these gastroenterologists. These included flexible fiberoptic endoscopy, which was delayed from 1930 to 1957. Fiberoptic transmission was invented by Heinrich Lamm in 1930. Lamm was exiled from Nazi Germany in 1936, and this technique was clinically applied to endoscopy by Hirschowitz only in 1957. Another innovation was fecal occult blood testing for early colon cancer detection, which was devised by Ismar Boas before 1938. Boas committed suicide under Nazi oppression in 1938 and this modality was clinically applied by Greengor only in 1967. The acceptance of refugees from Nazi Germany or Austria into America or into the future State of Israel helped mitigate some of this damage. For example, eight eminent academic gastroenterologists who fled Nazi-occupied countries to then mandatory Palestine made major contributions to the development of academic gastroenterology in the soon-to-be established State of Israel.

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While the direct effects of Nazism on patient care including euthanasia of the handicapped (*gnatentod*), gruesome human experimentation (*menschenversuche*) and ethnic cleansing of medical researchers at German medical institutions have been studied [1], little attention has been paid to the indirect long-term toll of Nazism on patient care. Consider the situation in gastroenterology, a subspecialty that has indeed been intensely analyzed in terms of the effects of Nazism. A recent report noted that 53 academic gastroenterologists living in Nazi-occupied Europe were persecuted (32 exiled, 11 murdered, 5 forced suicides, 5 other) solely for belonging to a persecuted minority (52 Jewish or partially Jewish) or for political reasons (1 Christian Polish nationalist) [2]. This number is surprisingly large given the small number of European gastroenterologists at the time [3] and the stringent academic criteria (at least 10 peer-reviewed publications). That report, however, focused on the effect of persecution on gastroenterologists rather than on patient care. The present

paper is the first to analyze the persecution with regard to patient care, to link Nazi persecution of outstanding gastroenterologists with a one-generation delay in clinical implementation of their research discoveries, and to propose that such delays greatly affected patient care.

Effects of Nazism on gastroenterology

Several of the 53 academic gastroenterologists persecuted by the Nazis created groundbreaking devices and techniques whose clinical application was delayed. These included guaiac testing for fecal occult blood for early diagnosis of colon cancer that was delayed from before 1938 to after 1967. Ismar Boas, the first gastroenterologist in the world, invented FOBT for the diagnosis of colon cancer [4]. The suicide in 1938 of Boas, a Jew, under threat of violence three days after the Nazis entered Austria in the *Anschluss*, undoubtedly contributed to the delayed clinical application of FOBT until 1967, when Greengor demonstrated early colon cancer detection using this test [5]. The second case is that of flexible fiberoptic transmission for flexible endoscopy, which was delayed from 1930 to 1958. Heinrich Lamm invented flexible fiberoptics to faithfully transmit optic images around curves in 1930 [6]. He aligned a bundle of fiberoptic fibers by hand using an ordinary comb for fiberoptic transmission of an optic image around a curve [7]. He was unable to continue this research as a Jew in Nazi Germany and was exiled in 1936. It is highly likely that his persecution delayed development of the instrument until 1957, when Hirschowitz created the first practicable flexible endoscope [8]. Hirschowitz, himself a member of the same ethnic minority, would have been unable to develop this clinical instrument had he lived in Nazi Germany. Other innovations in rigid gastrointestinal endoscopy were advanced by Hermann Strauss. He fashioned a device to render rigid sigmoidoscopy safer (adding bellows in series with a rubber bulb to prevent over-distension of the colon) and he perfected anoscopy [9-11]. His suicide in a Nazi concentration camp in 1943 contributed to the postponement of further innovations in sigmoidoscopy [12].

Rebirth in the West

Fortunately, the damage to patient care by Nazism was considerably mitigated by the fact that other outstanding academic gastroenterologists initiated or reestablished their research as

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FOBT = fecal occult blood test

Table I. Eminent academic gastroenterologists who fled Nazi Germany or Austria to mandatory Palestine and contributed to the development of gastroenterology in Israel

Academic gastroenterologists	Partial census of published articles in peer-reviewed journals*	Selected research interests [ref]	Escaped to Palestine [ref]
General gastroenterology			
David Birnbaum	10 articles, 1945–53	Antibiotic therapy for intestinal infections [20]	Fled Nazi-occupied Austria to Palestine in 1938 [21]
Max Lefkowitz	14 articles, 1931–42	Infectious hepatitis [22] and colitis [23]	Fled Nazi Germany to Palestine in 1933 [24, p. 181]
S.J. Plaschkes	14 articles, 1929–36	Achlorhydria and healing of gastric ulcers after partial gastrectomy, stress ulcers, and diarrhea [25,26]	Fled Nazi-occupied Austria to Palestine in 1939 [24, p. 336]
Shimon Rosenbaum	14 articles, 1935–42	Enteritis [27] and pylorospasm [28]	Fled Nazi Germany to Palestine in 1936 [24, p. 371]
Gastrointestinal surgery			
Felix Mandl	26 articles, 1926–29, and authored many books	Improved rectal surgery and gastric surgery [29]. Performed the first parathyroidectomy [3], and was the co-founder of the International College of Surgeons [31]	Fled Nazi-occupied Austria to Palestine in 1939, returned to Austria in 1947 [24, p. 465]
Herman Zondek	16 articles, 1930–35, and authored numerous books	Kwashiorkor in World War I [32], obesity (edema) due to salt and water retention [15], and colitis in Palestine [33]	Fled Nazi Germany to England in 1933, and immigrated to Palestine in 1934 [15, pp. 279–80]
Pediatric gastroenterology & nutrition			
Ludwig Ferdinand Meyer	26 articles, 1908–12, and authored several books on infant nutrition	Invented protein-rich milk for infants with diarrhea and showed the importance of water in infant nutrition [34,35]	Fled Nazi Germany to Palestine in 1935 [24, pp. 367–8]
Erich Nassau	21 articles, 1927–31, and co-authored a textbook on nutrition	Analyzed the concentration of vitamins in milk and studied diarrhea and abdominal pain in infants [36]. Co-authored a standard textbook on infant nutrition [35]	Fled Nazi Germany to Palestine in 1938 [24, p. 370]

* As determined by an audit of Cumulated Index Medicus. The audit generally terminated after reaching about 10 published articles. This number is the minimal criterion for inclusion as an academic gastroenterologist, since it generally corresponds to the number of publications required for obtaining tenure at a medical school. All the above authors published substantially more articles in their entire professional career than indicated in this partial audit.

refugees in western democracies after fleeing from Nazi-occupied Europe. Gastroenterologists who reestablished their research in America included: Rudolph Schindler, who invented the semi-flexible endoscope [13–15]; Rudolph Nissen, who invented gastric fundoplication [16,17]; Kurt Isselbacher, who subsequently became chief of gastroenterology at Harvard Medical School [18]; and Hans Popper, the father of modern hepatopathology, who subsequently became dean of Mount Sinai Medical School [19].

Eight eminent academic gastroenterologists fled Nazi-occupied countries to then mandatory Palestine and made major contributions to the development of academic gastroenterology in the soon-to-be established State of Israel [Table I]. Seven of the eight gastroenterologists remained in Israel for the rest of their professional careers.

When tabulating the toll to civilization of Nazi evil, we must consider the indirect effects on patient care through delayed clinical application of medical advances. Could many thousands of lives have been saved if FOBT for screening for colon cancer had been clinically applied much earlier than 1967 or if flexible fiberoptic endoscopy had been applied earlier than 1957? If

focused research in one medical discipline reveals such profound effects, we cannot help but ponder the total indirect toll to patient care.

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