Welcome thinkers and doers, fellow physicians and scientists

If there is no struggle, there is no progress.

Frederic Douglass

The first issue of a new print or electronic academic gastroenterology journal gives an opportunity to reflect on past milestones and speculate on the future of the science and practice. So much has happened during the last quarter century to advance gastroenterology and hepatology, making half of my task immensely doable, but predicting the future is incredibly difficult. If I had a crystal ball, prognostication would be easier; at the very least I could win the lottery. But with the freedom to express an opinion comes an illusion of invulnerability. Thus, I will expound confidently and happily protected in my commentary, hoping to stimulate readers to formulate their own thoughts as well.

When I compare the advances in our field to that of the other internal medicine specialties, they appear to be almost standing still. If this rapid pace of discovery continues, our future practice will be astonishingly different from what we know now. Although the phrase “from the bench to the bedside” is a too simplified and exaggerated interpretation of the effect of medical research, there are landmark scientific achievements that merit special recognition here for their subsequent effect on patient care.

The pivotal role of _Helicobacter pylori_ in gastritis and peptic ulcer disease was a stunning finding that capped greater than a century of stellar work on the pathophysiology of gastric acid secretion. The work behind the identification of _H. pylori_ and its unique properties is a story worthy of being told alongside the best research news of our time. The resulting and much bigger implication of the potential role of yet-to-be-described pathogens in chronic inflammation and neoplasia in every and any tissue is, in my opinion, the ultimate aftermath of the discovery of _H. pylori_.

The development of molecular tools for the diagnosis of hepatitis C virus had a tremendous impact on this global public health problem. Preceding the elucidation of the virus structure by many years, the finding of the antibody signature and the subsequent immunoassay test for hepatitis C, paved the way for the characterization of its elusive and poorly understood natural history. We now have the means to make early diagnoses, prevent new infections, recognize the presence of the importance of this infection in the epidemiology of cirrhosis, and ultimately, eradicate the virus with the new direct acting antiviral drugs. That the risk of hepatitis C infection from blood transfusion has fallen during our lifetime from a commonplace occurrence to a rarity is an amazing advance. Tens of thousands have avoided infection and chronic liver disease through the cleansing of our blood supply of hepatitis C.

The understanding of the mechanisms of pathobiology and disease occurs at an unpredictable rate. Since ancient times, the ability of liver to hypertrophy and regenerate in response to injury has been recognized as one of the unique healing processes in the body. However, knowledge of the initiating signals and control of liver growth and repair is still at a fairly primitive level. Despite these limitations, liver transplantation has become a remarkably successful treatment for the scarred and failing organ. The progressive hypertrophy of the transplanted liver allows the surgical placement of a small whole or dissected organ portion into a recipient with the resulting growth ultimately meeting the patient’s metabolic demands. The technical complexity of replacing the damaged liver and the immunosuppressive protection of the donor organ has become routine to the clinical practice of the team of hepatologists and liver surgeons.

The evaluation and therapy of lesions of the gastrointestinal tract via fiberoptic video endoscopes is a fundamental...
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part of the diagnosis and treatment of gastrointestinal diseases. New optical modalities appear almost monthly that allow the endoscopic approach to a myriad of mucosal, luminal and intracaval medical problems. However, the pioneering invention of capsule endoscopic technology is a startling successful and routine diagnostic tool, allowing easy visualization of the gut lumen, especially the small intestine. Now that an individual can swallow a capsule that will transmit thousands of images to a recording device for later review, a complete and accurate study of the entire gastrointestinal tract is accessible. Capsule endoscopy has made the evaluation of anemia and obscure intestinal bleeding a simple, straightforward process.

These scientific discoveries in gastroenterology are such that they have had a remarkable effect on its clinical practice. In no specific order, I described the four most important breakthroughs that have occurred, in my opinion, during my professional career. So, what is ahead for us and our succeeding gastroenterologists? I read somewhere that 10,000 Americans are turning age 60 every day. This is a relatively educated, affluent group that favor, by and large, a healthy lifestyle and have high expectations for the role of medicine in helping them to a longer life than preceding generations. I suspect screening endoscopic technologies and biomarkers will accurately select populations for study that will lead to even better outcomes. The screening for hepatitis C amongst this population will identify thousands for safer and more effective oral antiviral therapies, but also bring greater recognition to the potential role of alcohol and obesity to their health. The elephant in the room is the obesity epidemic and its public health consequences. Gastroenterologists will play a major role in addressing the diet and treatment of obesity by endoscopic and pharmaceutical means, but the course of the obesity epidemic is difficult to predict and at an immature stage. Perhaps the exploding knowledge about the intestinal microbiota will lead to great medical breakthroughs and our relationship to our symbiotic bacteria will somehow help us. Time will tell.

Mark Mailliard, M.D.
Professor, Division of Gastroenterology and Hepatology
Department of Internal Medicine
98200 Nebraska Medical Center
Omaha, NE-68198.
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