

## Preface

# Liver surgery: modern concepts and techniques



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“Surgery, after all, is an affair of the spirit; it is a fierce test of a man’s technical skill, sometimes, but, in a grim or long fight, it is above all a trial of the spirit; and there are few things that cannot be conquered if a man’s heart is set on victory.” Sir Berkeley Moynihan (1865–1936)

Hepatic resection has evolved from an imprecise removal of portions of the liver, frequently accompanied by extensive hemorrhage, to a controlled, anatomy-based procedure that represents a major advance in modern surgery. The first successful, elective hepatic resection is credited to Langenbuch in 1888. The modern era of anatomic hepatic lobectomy dates from the 1952 report of Lortat-Jacob and Roberts, who used a thoraco-abdominal approach and a technique designed to control hemorrhage by extrahepatic ligation of the vessels. In 1953, Quatalbaum described transecting the liver with the handle of a knife, and clamping the vessels within the plane of transection. Pioneering work by Ton That Thung, Couinaud, and Bismuth provides the basis for current techniques that allow a controlled anatomic liver resection. Intraoperative high-resolution ultrasonography, introduced by Makuuchi, combined with the Glissonian pedicle ligation technique popularized by Launois, facilitates performance of segmental and sectoral hepatic resections.

Modern segment-oriented liver resection, based on the understanding of functional hepatic anatomy, particularly the relationships between the hepatic veins and the portal pedicles, has greatly enhanced the technical repertoire of the hepatobiliary surgeon; the exceptional results reported by

Blumgart attest to the value of this approach. The field of liver transplantation was forged by the report of a successful hepatectomy with orthotopic liver transplantation by Starzl and the concurrent contribution of immunosuppressive therapy by Roy Calne. These courageous pioneers were unwilling to accept the status quo and inertia in the field. Bismuth's comment at the American Surgical Association in 1999, "My policy is to try to resect when it is technically possible. . .we must try to give the patient the chance, even small, of a cure," captures the essence of the modern approach.

The modern era has indeed ushered in an aggressive approach to liver surgery because of the advances in imaging modalities, improved anesthetic management, enhanced knowledge of functional liver anatomy, and an appreciation of the functional reserve of the liver and the vast potential for hepatic regeneration. Likewise, improved operative strategies, including laparoscopic techniques, knowledge of various vascular occlusion techniques, local ablative therapies, systemic and regional chemotherapeutic options, and living-related donor transplantation have helped more patients with primary and metastatic disease of the liver gain measurable benefits in quality of life, as well as increased disease-free and overall survival.

Successful liver surgery represents the culmination of a challenging and often difficult clinical decision process, and, therefore, it is imperative for surgeons to be familiar with current therapies available for these patients and their potential complications. In this issue of the *Surgical Clinics of North America*, the broad spectrum of topics serves to encapsulate the quintessence of modern liver surgery. Prominent leaders in this field have provided a current perspective and a comprehensive overview of the state of knowledge about liver surgery.

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