CHAPTER 4

ULTRASONOGRAPHICAL ANATOMY FOR THE SURGEON. THE VALUE OF INTRA-OPERATIVE ULTRASONOGRAPHY

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4.1. Introduction

This chapter drew and wrote by the authors intended to evoke the interest of surgeons about ultrasonography on liver and biliary tree. The value of this indispensable tool is that it can be also applied with high sensitivity and specificity intraoperatively and in endoscopic and laparoscopic diagnostic and interventional procedures.

4.2. Transabdominal Ultrasound

Ultrasonography will likely remain the initial mode of evaluation of liver in most clinical practices as it provides safety, ease of performance, portability, availability and speed as well as bearing a relatively low cost. Real-time scanning does not provide global view of the liver and is operator dependent. Modern machines provide images of high quality, enabling 3D reconstruction [1].

Understanding the vascular anatomy of the liver is essential to an appreciation of the relative position of the hepatic segments (interlobar and intersegmental). The major hepatic veins course between the lobes and segments (intrasegmental), with the exception of the ascending portion of the left portal vein, which runs in the left intersegmental fissure [2] (fig. 4.1).

![Diagram of liver anatomy](image)

Fig. 4.1. Understanding the vascular anatomy of the liver is essential to an appreciation of the relative position of the hepatic segments.
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Inf. VC = Inferior Vena Cava.
RHV = Right Hepatic Vein.
MHV = Middle Hepatic Vein.
LHV = Left Hepatic Vein.
L. Lat. HS = Left Lateral Hepatic Sector.
MHS = Middle Hepatic Sector.
RAHS = Right Anterior Hepatic Sector.
RPHS = Right Posterior Hepatic Sector.

Fig. 4.2. The section of the liver seen on the left column of the page is a Subcostal Oblique Section. The sections in ultrasonography which follow are as the afore-mentioned section but parallel in different levels. Firstly study the ultrasonography on the left of the page. Secondly study the schematic illustration to understand the anatomy in US. Study again and again the two illustrations.