

ABDOMINAL OPERATIONS

Fifth Edition

RODNEY MAINGOT, F.R.C.S.

volume 2

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RODNEY MAINGOT, F.R.C.S.

London

**With Special Articles by
British and American Contributors**



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48 PORTAL HYPERTENSION

John M. Hunt

ABDOMINAL OPERATIONS

volume 2

Obstruction to the flow of blood in the portal system leads to portal hypertension, and congestion of the organs which drain into the portal tree, especially the spleen. The blood is diverted through naturally occurring communicating veins into the systemic circulation, especially at the cardiac end of the stomach and lower esophagus. It is this condition that is now referred to as portal hypertension, although the elevated portal pressure is but one of its aspects.

PORTAL VEIN PRESSURE

The normal portal pressure, as taken directly from a radicle of the portal vein, is about 100 mm. water, with limits of 50 to 200. It depends on the systemic arterial pressure and the venous caval pressure and fluctuates slightly with respiratory movements. These same factors influence the extravascular pressure which exists in cases of portal obstruction, when it is usually about 300 mm. of water. Occasionally it may be as high as 600 mm. and yet sometimes pressures of no more than 150 mm. are encountered in cases of obvious portal stasis.

PORTAL OBSTRUCTION

CAUSES

These are outlined by Whipple (Ann Surg 133:40, 1951), Rousslet (Surgery 8:34, 1910), and Hunt (Portal Hypertension, 1958). I. Extrahepatic obstruction (a) A primary obstruction or constriction of the portal vein is encountered in children and adolescents. It is presumed to be brought about in a number of these cases, when no other cause can be elucidated, by an extension of the obliterative process affecting the ductus venosus and the umbilical vein at birth (Thompson, Ann Intern Med 15:252, 1940). Neonatal umbilical sepsis is an accepted aetiological factor, and exchange transfusions through the umbilical vein a possible additional factor. The portal vein is usually replaced by a number of tortuous varicosities, the so-called cavernoma. The

METHOD OF MEASURING

The simplest method of measuring the pressure is by means of a catheterized fluid manometer to which is attached a 300-mm. length of rubber tubing carrying a No. 2 "serum" needle (Fig. 1). The whole, including the bulb of the manometer, is filled with 3.3 percent sodium citrate solution and the tube is clamped. Air lock must be avoided. The needle is inserted into a convenient vein (usually an upper jejunal vein), while the manometer is held vertically well up above the needle. The clamp is then removed. The citrate will run down the manometer, which is lowered and balanced off quickly against the portal venous pressure. The reading is obtained by adding the vertical distance between the point of the needle and the zero mark on the manometer (measured