Surgical approaches to liver trauma

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When a laparotomy is indicated, especially when CT scanning is not possible, a ‘rooftop’ incision (see Figure 69.19 midline extension to the xiphisternum and retraction of the costal margins gives excellent access to the liver and spleen. If a midline incision is made initially a transverse right lateral extension will improve access. Required operative techniques include resectional debridement, hepatotomy with direct suture ligation and perihepatic packing. Anatomical resection, hepatic artery ligation and bypass techniques are possible following transfer of patients to tertiary hepatobiliary centres. Major complications include recurrent haemorrhage, sepsis and bile leak. Packing or manual pressure intended to compress the parenchyma without causing caval compression is the initial aim (Figure 69.9); if additional intra-abdominal bleeding is found the source needs to be identifi ed. Care should be taken to av oid overzealous packing, which may produce pressure necrosis of the liver parenchyma or abdominal compartment syndrome. Packing is e ff ective for the majority of liver injuries if the liver is packed against the natural contour of the diaphragm. If control is not achieved James Hogarth Pringle , 1863–1941, surgeon, The Royal Infi rmary , Glasgow , UK. a Pringle manoeuvre should be performed (Figure 69.10). Large /uni00A0 abdominal packs should be used to ease their removal, and the abdomen closed to facilitate compression. Continued bleeding implies damage to the hepatic veins and/or the IVC but exploration of a liver laceration should only be attempted if control is not possible. If insu ffi cient facilities or assistance are available and packing controls the situation, the abdomen should be closed and the patient transferred to) with a tertiary centre.

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Surgical management of hepatobiliary Figure 69.10 The Pringle manoeuvre.

haematomas and di ff use capsular lacerations (Figure 69.8a Suturing is ine ff ective, and perihepatic packing is frequently the only option. Necrotic tissue should be removed but poorly perfused but viable liver left in situ . If packing is necessary , this should be removed after 48–72 hours; usually , no further inter vention is required. Antibiotic cover is advisable and full rever sal of any coagulopathy essential. If a major vascular injury (hepatic vein or vena cava, grade V or VI) is suspected then packing and referral to a specialist centre should be consid ered as venovenous bypass is often required. Following transfer, a further laparotomy is performed, the liver fully mobilised and, after a Pringle manoeuvre and IVC occlusion above the renal veins and at the level of the diaphragm using atrauma vascular clamps (with/without venovenous bypass), caval or hepatic vein damage is repaired. Warm ischaemia of the liver is tolerated for up to 45 minutes.

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