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Trocar Injury

Injury by a trocar during a laparoscopic or thoracoscopic procedure is a very serious complication in surgery. The two most serious complications most likely to result in death caused during entrance of a trocar are hemorrhage due to vessel injury and infection due to bowel injury. The rate of trocar related complication is less than 3%. The average incidence of trocar-related vascular injury is 0.1%. Major vessel injury is almost invariably operator error. Most vascular, bowel and local hemorrhage injury are caused during the initial trocar insertion. There is some blind force exertion that causes the blunt/sharp injury to the major vessel. The vessels most frequently involved are the aorta, the iliac arteries, the mesenteric vessels, and the vena cava. Force require to insert reusable trocars is twice that for disposable trocars. Shielded trocars might provide a margin of safety. Trocar use requires considerable training, practice, skill, manual dexterity, adequate muscular strength, knowledge of the associated risks, and careful patient selection. In addition to laparoscopist-related issues (trocar insertion technique, patient selection, injury recognition and effective intervention), the lack of standard device designs, a lack of proven-effective fail-safe features, and failure of patients to report symptoms in a timely manner may also contribute to morbidity and mortality. Open (Hasson) entrance or optical access trocars are recommended for patients with prior abdominal surgery, small children, patients with lower abdomen skin cannot be adequately stabilized for safe insertion or Veress needle.

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Alagille Syndrome

Alagille syndrome is an autosomal dominant disorder characterized by paucity of intrahepatic bile ducts, typical facies, congenital cardiac defects (pulmonary stenosis), posterior embryotoxon of the eye and butterfly vertebra arch defect. Due to paucity of bile ducts the baby presents with inefficient bile excretion causing intrahepatic cholestasis, direct hyperbilirubinemia and hypercholesterinemia. The clinical picture is sometimes indistinguishable from biliary atresia needing cholangiogram and liver biopsy for diagnosis. The vast majority of patients present with jaundice and failure to thrive or cardiovascular symptoms before six months of age. Mutation in the JAG-1 gene of chromosome 20p12 is responsible for more than 90% of cases. There is no cure for Alagille syndrome. The most disturbing manifestation includes pruritus and xanthomas. Most children with Alagille syndrome can be managed conservatively with choleretics (ursodeoxycholic acid), nutrition optimization, fat-soluble vitamin supplementation and medication for pruritus (cholestyramine, rifampin, naltrexone). Surgery is aimed at reducing the pruritus consist of partial external biliary diversion creating a conduit between gallbladder and skin using jejunum, performing an ileal exclusion end to side ileocolostomy between proximal ileum and right colon or partial internal biliary diversion between gallbladder and ascending colon with jejunum. These procedures do not improve growth and does not prevent progression of disease toward liver failure. Liver transplant is used for liver failure. Mortality is approximately 10%, with vascular accidents, cardiac disease, and liver disease accounting for most deaths.

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Transcutaneous Electrical Stimulation

Transcutaneous electrical stimulation (TES) therapy is a noninvasive form of electrical stimulation used in adults to manage painful musculoskeletal conditions and bladder incontinence. In general electrical stimulation therapy can be delivered via the direct route (invasive) with electrodes implantation in the form of sacral nerve stimulation or the indirect route (noninvasive) with pad electrode placement on the skin surface over the affected area and paraspinal region. The battery-operated stimulator makes home

treatment a reality. TES increase defecation frequency and reduce soiling and abdominal pain in constipation. This has prompted using TES as therapy for slow transit constipation in children. TES activates sensory nerve fibers in the spinal nerves in the skin, sensory and motor nerve in the spinal nerves, sympathetic and parasympathetic nerves, enteric nerves in the bowel wall or pacemaker cells in the intestine (cells of Cajal), and intestinal muscle cells. Improvement of constipation has been found in more than two-thirds of all patients lasting more than two years in half of them. TES have reduced the number of surgical procedures (appendicostomy, colectomy, colostomy) done for intractable slow transit constipation improving their quality of life.

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