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Undrained Traumatic Hemothorax

Hemothorax refers as blood in the pleural cavity with the pleural fluid hematocrit being 50% or more of the peripheral blood hematocrit. Hemothorax results after blunt or penetrating trauma to the chest. Spontaneous hemothorax is rare, but can be seen after anticoagulant therapy, pulmonary embolism and pleural malignancy. Emergent management of hemothorax includes management of the associated hemorrhagic shock along with chest tube thoracostomy which in most instances can resolve the problem and expand the compressed lung. Chest tube drainage produces apposition of the pleural surfaces with tamponade of the bleeding vessels, expansion of lung parenchyma and tamponade of lung vessels and drainage of the partially clotted blood. In 5-30% of cases residual hemothorax persists due to clotting of blood within the chest. Up to 40% of these patients will require further surgical intervention for non-resolving, complicated intrapleural collections, empyema or fibrothorax development. A second chest tube is an inadequate alternative in retained hemothorax where initial tube thoracotomy is insufficient. Alternatives of management include open thoracotomy, video-assisted thoracoscopic surgery (VATS), or intrapleural fibrinolysis using streptokinase. Decision making should be based on thoracic CT findings and not simple chest films. VATS is the best available modality for the management of clotted hemothorax as it can clear the chest cavity in 80% of cases avoiding the use of an open thoracotomy. VATS can cause complications in 10% of patients such as transient hypoxemia, arrhythmia, intercostal neuritis, chest wall bleeding or iatrogenic lung injury. Another available alternative that has gained wide world acceptance is intrapleural fibrinolytic therapy using streptokinase or urokinase with a success rate of 90%. The use of intrapleural streptokinase does not cause significant fibrinolysis and is unlikely to cause systemic bleeding. Fibrinolytic agents appear to have a role in managing retained hemothorax with significant clinical and radiological improvement and should be used as initial management of retained hemothorax.

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Growing Teratoma Syndrome

Ovarian or testicular teratomas are either mature (most commonly), immature or malignant. The immature and malignant teratomas can secrete alpha fetoprotein (AFP) and/or human chorionic gonadotropin (HCG). Immature teratomas are potentially malignant and as such will need chemotherapy to change the features of immaturity into mature teratoma and reduce the level of tumor markers. Teratomas that increase in size during or after chemotherapy as tumor marker levels decrease is known as growing teratoma syndrome (GTS). By definition GTS includes normalization of previously elevated serum tumors markers (AFP or HCG), an increase in tumor size during or after chemotherapy given for non-seminomatous germ cell tumor and an absence of such components other than mature teratoma at resection. GTS is characterized by an absence of malignant germ cell components as the growing tissue is benign. Further chemotherapy is unable to shrink GTS. The radiological features include increased density of mass with well-circumscribed margins, onset of internal calcification with fatty areas and cystic changes. Retroperitoneum is the most common site for GTS. Pathogenesis of development of GTS is either malignant cell differentiation into mature teratoma or selective chemotherapy induced destruction of immature elements. Complete surgical excision of the mass is required to avoid pressure effects and potential malignant transformation to either sarcoma or carcinoma. Pressure effect of the growing tumor includes vascular thrombosis, ureteral obstruction, bowel obstruction, bile duct obstruction and fecal fistula. Malignant transformation to sarcoma, adenocarcinoma or PNET is reported in 3% of cases. Alpha-2-Interferon can control disseminated unresectable GTS by inhibiting tumor angiogenesis mediated by decreased level of vascular endothelial growth factor and basic fibroblast growth factor, but the regression is slow, incomplete and discontinuation results in progression of disease. Prognosis after complete surgical resection is excellent.

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Epiploic Appendagitis

Epiploic appendages are peritoneum-covered fat outpouches protruding from the serosal antimesenteric border of the taeniae of the large bowel, except in the rectum. Blood supply of the epiploic appendages is derived from a single artery and vein located within the pedicle. Epiploic appendagitis occur when there occurs either torsion and/or infarction of the appendage. Epiploic appendagitis is an uncommon cause of acute abdominal pain in children and adults manifesting most commonly in the fourth or fifth decade of life with male predominance. Mostly epiploic appendagitis involve the sigmoid colon and the pain can be mistaken for diverticulitis. When it involves the cecum it can mimics appendicitis. With the widespread use of CT-Scan in the diagnosis of abdominal pain in children, epiploic appendagitis is commonly diagnosed before operation is undertaken for an acute abdomen. In US the appendagitis shows a noncompressible hyperechoic mass near the colonic wall at the point of maximum tenderness, absence of changes in the colon wall and absence of color flow on Doppler. CT-Scan findings include an oval lesion with attenuation similar to fat surrounded bu a hyperattenuated ring located near but distinct to the colon, inflammatory changes in the surrounding fat and absence of other abnormalities. The presence of a central hyperdense dot thought to represent a thrombosed vein to the epiploic appendix is a specific sign felt to distinguish epiploic appendagitis from omental torsion. MRI findings of epiploic appendagitis include an oval-shaped lesion, usually one to 4 cm in size, with high signal intensity center and low signal intensity rim on T1-weighted images. Obesity seems a risk factor. If the diagnosis of epiploic appendagitis is made preoperative with certain degree of confidence management can be conservative using pain killers. Most children recover in ten days. If the diagnosis is uncertain then laparoscopy has been found to be effective in diagnosis and management of epiploic appendagitis.

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