PEDIATRIC SURGERY *Update* ©
Vol. 36 No. 06 JUNE 2011

Venous Thromboembolism in Children

Venous thromboembolism (VTE) has a low risk of developing during childhood. Venous thromboembolism arises from stasis, vascular endothelial damage or a hypercoagulable state (Virchow's triad). Surgical risk factors include indwelling venous catheters, reduced lack of mobility after surgery, and intrinsic hematologic prothrombotic factors (factor V Leiden, antiphospholipid antibodies or prothrombin mutations). VTE disease in children is more common in neonates than older children and appears to affect mostly the upper limb veins, followed by iliac veins and inferior vena cava with the main danger being that of pulmonary embolism sometimes confused with a pneumonic process. Acquired inflammatory conditions, septicemia, staph infections, HIV are risk factors for VTE since they induce a hypercoagulable state due to transitory decrease of anticoagulant protein S and increase in procoagulant Factor VIII activity. Other risk factors in children are central venous catheter, blood dyscrasias, obesity and malignancy. Traumatic intimal tears after pelvic or orthopedic trauma and prolonged surgical procedures can also predispose to venous thromboembolism. Diagnosis of VTE is made by noninvasive radiologic imaging. Management of VTE in children in high risk scenarios or with established diagnosis consist of low-molecular-weight heparin. Use of plasminogen activators is reserved for the management of thrombi that threaten life, limb or a specific organ.

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Pancreatic Mediastinal Pseudocysts

Most pancreatic pseudocysts are located in the peripancreatic retroperitoneum. On very rare occasions active pancreatic secretions from a pancreatitis can gain access to the mediastinum causing a mediastinal pseudocyst. Access to the posterior mediastinum

can occur through the esophageal hiatus most commonly, and also through extension through the aortic hiatus or direct erosion through the diaphragm. Children with pancreatic mediastinal pseudocysts can present with abdominal pain, anorexia, vomiting, dysphagia, respiratory distress and dyspnea. The etiology of the pancreatitis in such children can be a congenital ductal anomaly (pancreas divisum), a posttraumatic event or idiopathic. Diagnosis is made with CT Scan as it delineates location, extent and anatomic relationship to the adjacent mediastinal structures. The cyst contains elevated amylase levels. MRCP provides images of the pancreatic duct. The decision whether to wait for spontaneous resolution, cyst maturation or perform immediate intervention is dictated by the child symptoms. Increasing size, bleeding, infection, or compression symptoms, invasion or rupture warrants intervention. Intervention can consist of endoscopic transmural drainage (transpapillary, transgastric, transesophageal), internal surgical drainage (cystogastrostomy or cystoenterostomy), resection procedure or CT-guided percutaneous drainage.

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Abdominal Pain in Sickle Cell Disease

Children with Sickle Cell Disease (SCD) present fairly commonly with acute abdominal pain. The pain must be differentiated between ischemia from a vasoocclusive crisis or another abdominal disease requiring surgery. Specific causes for abdominal pain in SCD include hepatic crisis, cholelithiasis, splenic sequestration and pancreatitis. Management consists of oxygenation, hydration and analgesia. When the child with SCD develops classic features of an acute surgical abdomen such as vomiting, tender distended abdomen with rigidity, involuntary guarding and rebound tenderness, the disease process might require surgery. Ultrasound & CT Scan imaging helps discover whether the child has bowel obstruction from infarction, a perforated viscus, appendicitis or cholecystitis. The incidence of appendicitis has been found to be lower in children with SCD. Close clinical monitoring is essential. Conservative therapy is warranted in the large majority of patients with SCD who present with acute abdominal pain. High pain scores, older age, increased polymorphonuclear count and homozygous SCD types are associated with prolonged hospital stay during vasoocclusive crisis. Surgical consultation is necessary if a surgical cause is suspected or the cause is not obvious

after a thorough evaluation.

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* Edited by: **Humberto Lugo-Vicente, MD, FACS, FAAP**
Professor of Pediatric Surgery, University of Puerto Rico - School of Medicine,
Rio Piedras, Puerto Rico. Director - Pediatric Surgery, San Jorge Childrens Hospital.
Address: P.O. Box 10426, Caparra Heights Station, San Juan, Puerto Rico USA 00922-0426.
Tel (787)-786-3495 Fax (787)-720-6103 E-mail: *titolugo@coqui.net*
Internet: http://home.coqui.net/titolugo

ISSN 1089-7739