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Deep Venous Thrombosis in Central Venous Lines

Deep venous thrombosis (DVT) is probably the second most common complication of central venous line (CVL) placement followed very closely by sepsis. Catheters are thrombogenic because they are foreign, damage vessel wall, disrupt blood flow and contain damaging infused substances. Thrombotic complications related to catheters include occlusion (fibrin sleeve) and DVT. Suspicion of DVT in CVL should arise when there is no blood return, increase pressure are needed for infusion, repeat urokinase instillation to remove blockage is needed and the life span is shortened in the face of a recent catheter changed. Symptoms include swelling, pain and discoloration of the face or limb. Diagnosis of DVT can be made using non-invasive techniques (doppler ultrasound) or more accurately a venogram. High risk patients for DVT are: young age, long-term users (home parenteral nutrition and chemotherapy), cystic fibrosis and ventriculo-atrial shunts. Potential effective prophylactic anticoagulant therapy may prevent both short-term and long-term problems. Most DVT occurs in the upper venous system. Complications associated to DVT are: loss of venous access, pulmonary embolism, chylothorax, superior vena cava syndrome, postphlebitis syndrome and death. Flushing the blocked catheter with heparin is insufficient. Randomized trials in adults have shown a reduced incidence of DVT in patients receiving low dose warfarin that did not prolong the INR. Once DVT is diagnosed therapeutic options include heparin therapy followed by oral anticoagulant therapy, and in some patients thrombolytic therapy (streptokinase) followed by anticoagulant therapy (heparin, warfarin). Catheter removal is controversial.

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Omphalocele

The three most common abdominal wall defect in newborns are umbilical hernia, gastroschisis and omphalocele. Omphalocele is a milder form of primary abdominoschisis since during the embryonic folding process the outgrowth at the umbilical ring is

insufficient (shortage in apoptotic cell death). Bowel and/or viscera remains in the umbilical cord causing a large abdominal wall defect. Defect may have liver, spleen, stomach, and bowel in the sac while the abdominal cavity remains underdeveloped in size. The sac is composed of chorium, Wharton's jelly and peritoneum. The defect is centrally localized and measures 4-10 cm in diameter. A small defect of less than 2 cm with bowel inside is referred as a hernia of the umbilical cord. There is a high incidence (30-60%) of associated anomalies in patients with omphalocele. Epigastric localized omphalocele are associated with sternal and intracardiac defects (i.e., Pentalogy of Cantrell), and hypogastric omphalocele have a high association with genito-urinary defects (i.e., Cloacal Exstrophy). All have malrotation. Cardiac, neurogenic, genitourinary, skeletal and chromosomal changes and syndromes are the cornerstones of mortality. Antenatal diagnosis may affect management by stimulating search for associated anomalies and changing the site, mode or timing of delivery. Cesarean section is warranted in large omphaloceles to avoid liver damage and dystocia. After initial stabilization management requires consideration of the size of defect, prematurity and associated anomalies. Primary closure with correction of the malrotation should be attempted whenever possible. If this is not possible, then a plastic mesh/silastic chimney is fashioned around the defect to cover the intestinal contents and the contents slowly reduced over 5-14 days. Antibiotics and nutritional support are mandatory. Manage control centers around sepsis, respiratory status, liver and bowel dysfunction from increased intraabdominal pressure.

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Trans-Anal Pull-Through Video

We recently created a VIDEO of a single stage trans-anal endorectal pull-through (Soave-Boley) procedure without abdominal incision (incisionless) for Hirschsprung's Disease performed in a four kilogram newborn girl. To purchase a copy of the video e-mail Humberto Lugo-Vicente at titolugo@coqui.net or send check/money order (\$60 US dollars) to: Humberto Lugo-Vicente, MD - P.O. Box 10426, Caparra Heights Station, San Juan, Puerto Rico, USA 00922. Allow 2-4 weeks delivery.

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