



PEDIATRIC SURGERY Update

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Paraganglioma

Paraganglioma is a neural crest-derived catecholamine-secreting cell tumor originating in extraadrenal, usually paravertebral location. Its twin brother is the pheochromocytoma, which arises from the adrenal medulla. These tumors can occur at any age, though most arise during the third through the fifth decade of life. Children are more prone to develop paragangliomas. In children the head and neck are primarily affected followed by the retroperitoneum presenting as a palpable mass or pain. Paragangliomas can be associated with MEN2A, MEN2B and von Hippel-Lindau disease, though most cases in children are sporadic. From a diagnostic medical perspective is usually unimportant whether the tumor is a pheochromocytoma or a paraganglioma. Surgically this distinction is important since the approach may be dictated by the preoperative imaging studies. Excess catecholamine secretion occasionally occurs during intraoperative manipulation. Paragangliomas are classified as malignant when distant metastasis are present, the tumor is unresectable, or the tumor recurs regionally or distantly after initial resection with tumor negative margins. Complete surgical resection during initial presentation is the treatment of choice for paragangliomas and the only factor related to a favorable outcome. Neoadjuvant chemotherapy, radiotherapy and high dose of iodine 131-MIBG therapy is reserved for patients with features suggestive of incomplete resection or malignancy. Angioembolization is a last resort technique for unresectable symptomatic tumors.

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Lung Abscess

Lung abscess occurs rarely in the pediatric population. It is defined as a thick-walled cavity of localized infection with an area of central necrosis and suppuration within the lung parenchyma. They can lead to cavitation, necrosis and destruction of such lung parenchyma. Most children present with fever, cough and dyspnea. Lung abscess are classified as primary if they are solitary and occurring in a healthy patient after a community-acquired pneumonia. Secondary lung abscess are usually multiple, right-sided and occurs in children with another medical condition such as immunodeficiency, immunosuppression, recurrent aspiration or cystic fibrosis. Lung abscess results from both aerobic and anaerobic bacterias with almost one-third of them mixed organisms. *S Pneumoniae* and *S Aureus* are the most common offending organisms. Beside simple chest films, diagnostic imaging should include a chest ultrasound. CT Scan is reserve when ultrasound is technically limited or discrepant in findings. Management of lung abscess is long-term (at least six weeks) broad-spectrum antibiotic therapy. If medical therapy fails or a bronchopleural fistula develops invasive intervention is needed. This might consist of percutaneous drainage under CT guidance, bronchoscopic drainage, formal lobectomy, wedge resection or thoracoscopic drainage. Thoracoscopic drainage has lead to quick resolution of the abscess with little morbidity and nil long-term bronchopleural fistula formation.

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Fecal Impaction

Impaction of fecal material is a very common problem in children, the result of chronic constipation. Every child with chronic constipation since birth should be evaluated for rectal biopsy, since aganglionosis is a surgical correctable cause of constipation. Constipation with fecal impaction in children usually is functional and the result of stool retention. Fecal impaction can cause fever, leukocytosis, general malaise, vomiting, bowel obstruction, rectal bleeding, abdominal pain and distension with failure to thrive. In its severe form the child can develop toxic megacolon, respiratory arrest and colon perforation. Diagnosis begins with recognition of possible fecal impaction and confirmation by digital examination or abdominal radiography. Management of idiopathic fecal impaction consists of manual disimpaction, isotonic oral lavage (PEG) and saline enemas. After disimpaction, a

maintenance program may be required for months to years because relapse of functional constipation is common. Maintenance medications include mineral oil, lactulose, milk of magnesia, polyethylene glycol powder, and sorbitol.

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