PEDIATRIC SURGERY *Update* ©
Vol. 22 No. 05 MAY 2004

Pyomyositis

Pyomyositis is a purulent infection of skeletal muscle commonly seen in children who live in tropical countries. For pyomyositis to develop initial muscle injury followed by bacteremia must coexist. The initial traumatic event causes a localized cutaneous infection which is the source of the bacteremia that seeds the injured muscle tissue. Pyomyositis is more common in males, especially those who participate in strenuous physical activity. Peak incidence occurs between two and five years of age in children. Associated conditions (60%) includes diabetes, liver disease and HIV. Clinically, pyomyositis is accompanied by abscess formation in the suppurative phase (fluctuance) but may be without a focal fluid collection in the presuppurative phase (pain, fever, cellulitis, indurated muscle). Most common sites of abscess formation are the quadriceps and gluteal muscles. Organisms more commonly associated with pyomyositis are Staphylococcal Aureus which affects 90% of cases and streptococcus species. MRI is the most accurate means of diagnosing a lesion within muscle determining location and extension of the lesion. Initial management consists of systemic antibiotics. Surgical drainage and debridement are of paramount importance in the management of pyomyositis. All specimens obtained by aspiration or drainage should be cultured for aerobic and anaerobic bacteria. In immunocompromised patients progression to the septicemic stage is associated with high morbidity and mortality.

References:

1- Meehan J, Grose C, Soper RT, Kimura K: Pyomyositis in an adolescent female athlete. J Pediatr Surg 30(1):127-8, 1995
2- Brook I: Pyomyositis in children, caused by anaerobic bacteria. J Pediatr Surg 31(3):394-6, 1996
3- Akman I, Ostrov B, Varma BK, Keenan G: Pyomyositis: report of three patients and review of the literature. Clin Pediatr (Phila) 35(8):397-401, 1996
4- Ameh EA: Pyomyositis in children: analysis of 31 cases. Ann Trop Paediatr 19(3):263-5, 1999
5- Bibbo C, Patel DV, Mackessy RP, Lin SS, Barricella RL: Pyomyositis of the leg with early neurologic compromise. Pediatr Emerg Care 16(5):352-4, 2000
6- Flier S, Dolgin SE, Saphir RL, Shlasko E, Midulla P: A case confirming the progressive stages of pyomyositis. J Pediatr Surg 38(10):1551-3, 2003

Congenital Tracheal Stenosis

Congenital tracheal stenosis (CTS) is a rare condition seen immediately after birth or in early infancy that is uniformly life-threatening. Infants with CTS presents with stridor, respiratory distress, recurrent pulmonary infections or failure to thrive. Inflammation of the mucosa or mucous accumulation can easily obstruct the already stenotic airway. The

stenosis includes a short or long segment of circular cartilaginous ring. Diagnosis is established using bronchoscopy, MRI (assessment of vascular structures and relation to the stenosis), or CT-scan (good anatomic delineation of the airway). Each individual malformation is studied using rigid tracheo-broncho- esophagoscopy. Associated cardiac defects should rule out with echocardiogram. Management of CTS is surgical. Selection of the type of treatment depends on the patient's clinical status and the anatomic pattern of the stenosis. Resection of a short stenosis with anastomosis can be possible with a length that does not exceed half of the trachea. For longer stenosis the most useful technique consists of enlargement tracheoplasty with cartilaginous or a pericardial graft or the more recent and slide-tracheoplasty. The latter technique is preferable because it preserves native tracheal tissue with fewer postop complications. For CTS one should always look for other associated thoracic malformations, such as a pulmonary sling which may compromise the results of the surgical correction of the tracheal stenosis. Best prognosis is obtained with simultaneous correction of the respiratory and cardiovascular malformation. Overall survival of these children is 75%.

References:

1- Lang FJ, Hurni M, Monnier P: Long-segment congenital tracheal stenosis: treatment by slide-tracheoplasty. J Pediatr Surg 34(8):1216-22, 1999

2- Matute JA, Romero R, Garcia-Casillas MA, de Agustin JC, Marhuenda C, Berchi FJ, Vazquez J: Surgical approach to funnel-shaped congenital tracheal stenosis. J Pediatr Surg 36(2):320-3, 2001

3- Grillo HC, Wright CD, Vlahakes GJ, MacGillivray TE: Management of congenital tracheal stenosis by means of slide tracheoplasty or resection and reconstruction, with long-term follow-up of growth after slide tracheoplasty. J Thorac Cardiovasc Surg 123(1):145-52, 2002

4- Backer CL, Mavroudis C, Holinger LD: Repair of congenital tracheal stenosis. Semin Thorac Cardiovasc Surg Pediatr Card Surg Annu 5:173-86, 2002

5- Rutter MJ, Cotton RT, Azizkhan RG, Manning PB: Slide tracheoplasty for the management of complete tracheal rings. J Pediatr Surg 38(6):928-34, 2003

6- Anton-Pacheco JL, Cano I, Garcia A, Martinez A, Cuadros J, Berchi FJ: Patterns of management of congenital tracheal stenosis. J Pediatr Surg 38(10):1452-8, 2003

7- Koopman JP, Bogers AJ, Witsenburg M, Lequin MH, Tibboel D, Hoeve LJ: Slide tracheoplasty for congenital tracheal stenosis. J Pediatr Surg 39(1):19-23, 2004

Aplasia Cutis Congenita

Congenital absence of skin, better known as Aplasia Cutis Congenita (ACC) is a rare birth malformation characterized by partial or full-thickness absence extending through the underlying tissues in a localized manner. Sites involve in ACC include most commonly the vertex of the scalp region (85%) followed by truncal and extremity skin areas. In the scalp the lesion can include the dura with brain exposure. Life threatening hemorrhage from the sagittal sinus or sepsis may occur if closure is delayed. Most affected children with ACC are normal. Pathogenesis is not clear. A few are associated with other malformations such as omphalocele, absence of distal limbs and cleft deformities. The majority of these lesions are single and less than two centimeters in diameter. Management of ACC is conservative for small lesions with excision and primary closure. A larger lesion might need split-thickness skin grafting or tissue expansion technique for closure.

References:

1- Vinocur CD, Weintraub WH, Wilensky RJ, Coran AG, Dingman RO: Surgical management of aplasia cutis congenita. Arch Surg 111(10):1160-4, 1976
2- Sargent LA: Aplasia cutis congenita of the scalp. J Pediatr Surg 25(12):1211-3, 1990
3- Ross DA, Laurie SW, Coombs CJ, Mutimer KL: Aplasia cutis congenita: failed conservative treatment. Plast Reconstr Surg 95(1):124-9, 1995
4- Casanova D, Amar E, Bardot J, Magalon G: Aplasia cutis congenita. Report on 5 family cases involving the scalp. Eur J Pediatr Surg 11(4):280-4, 2001
5- Verhelle NAC, Heymans O, Deleuze JP, Fabre G, Vranckx JJ, Van den hof B: Abdominal Aplasia Cutis Congenita: Case Report and Review of the Literature. J Pediatr Sug 39(2): 237-239, 2004

---

* Edited by: **Humberto Lugo-Vicente, MD, FACS, FAAP**
Professor /Academic Director of Pediatric Surgery, University of Puerto Rico - School of Medicine,
Rio Piedras, Puerto Rico.
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