PEDIATRIC SURGERY *Update* ©
Vol. 31 No. 06 DECEMBER 2008

Neonatal Appendicitis

Appendicitis can occur in any age group including newborns. Neonatal appendicitis is very rare, has a high perforation rate, morbidity and mortality. Most described cases occur in males (75%) which are born prematurely. Some of the reasons babies don't get appendicitis is due to the broad conical orifice of the appendix, the use of liquid diet, lack of fecalith and reduced lymphatic hyperplasia in the periappendiceal area in this age group. The diagnosis is delay in all cases due to the infrequent nature and only made during the exploratory laparotomy. Several causes of neonatal appendicitis are appraised. It is suspected is a form of localized necrotizing enterocolitis. This implicates some form of vascular insufficiency associated with perinatal asphyxia, cardiac anomalies or low flow states. Obstructive cecal distension associated with Hirschsprung's disease or meconium ileus (Cystic Fibrosis) causes increased pressure at the base of the appendix leading to perforation. Appendicitis can also be associated with an incarcerated inguinal hernia (Amyand's hernia). The babies show abdominal distension, signs of pain through irritability, restlessness, sleep disturbance, fever, vomiting, feeding intolerance and abnormal radiographic findings. Management is usually exploratory laparotomy with removal of the sick appendix, antibiotherapy and lavage of the abdominal cavity.

References:

1- Stiefel D, Stallmach T, Sacher P: Acute appendicitis in neonates: complication or morbus sui generis? Pediatr Surg Int. 14(1-2):122-3, 1998
2- Martins JL, Peterlini FL, Martins EC: Neonatal acute appendicitis: a strangulated appendix in an incarcerated inguinal hernia. Pediatr Surg Int. 17(8):644-5, 2001
3- Efrati Y, Peer A, Klin B, Lotan G: Neonatal periappendicular abscess--updated treatment. J Pediatr Surg. 38(2):e5, 2003
4- Karaman A, Cavusoglu YH, Karaman I, Cakmak O: Seven cases of neonatal appendicitis with a review of the English language literature of the last century. Pediatr Surg Int. 19(11):707-9, 2003
5- Managoli S, Chaturvedi P, Vilhekar KY, Gupta D, Ghosh: Perforated acute appendicitis in a term neonate. Indian J Pediatr. 71(4):357-8, 2004
6- Jancelewicz T, Kim G, Miniati D: Neonatal appendicitis: a new look at an old zebra. J Pediatr Surg. 43(10):e1-5, 2008

Spinal Accessory Nerve Injury

The XI cranial nerve called the spinal accessory nerve provides motor innervation to two muscles in the neck: the sternocleidomastoid and upper portion of trapezius muscle. Injury to the spinal accessory nerve is usually iatrogenic and occurs most commonly after lymph node or other type of biopsy in the posterior triangle of the neck in children and adults. The paralysis of the trapezius disrupts the scapohumeral synchrony manifesting itself clinically as loss of shoulder motion, wing scapula, pain and a functional deficit. In adults the injury is

usually recognized in the early postoperative period by shoulder pain and active shoulder motion dysfunction, while children have a later clinical presentation. To avoid damage during surgery use of loupe magnification is needed. Instead of a transverse incision, which is more pleasing cosmetically, a parallel incision along the posterior border of the sternocleidomastoid is safer. Because the nerve is adhered to the lymph node confirmation using nerve stimulator is needed. After the procedure the child should be examined to determined the integrity of the nerve in scapulothoracic and glenohumeral motion. With suspicion of nerve injury electrodiagnostic studies should be done. Surgical options after injury includes neurolysis or neuroma resection with primary microsurgical repair or with nerve graft reconstruction. Significant recovery is obtained after surgery.

References:

1- Okajima S, Tamai K, Fujiwara H, Kobashi H, Hirata M, Kubo T: Surgical treatment for spinal accessory nerve injury. Microsurgery. 26(4):273-7, 2006
2- Boström D, Dahlin LB: Iatrogenic injury to the accessory nerve. Scand J Plast Reconstr Surg Hand Surg. 41(2):82-7, 2007
3- Lloyd S: Accessory nerve: anatomy and surgical identification. J Laryngol Otol. 121(12):1118-25, 2007
4- Kelley MJ, Kane TE, Leggin BG: Spinal accessory nerve palsy: associated signs and symptoms. J Orthop Sports Phys Ther. 38(2):78-86, 2008
5- Grossman JA, Ruchelsman DE, Schwarzkopf R: Iatrogenic spinal accessory nerve injury in children. J Pediatr Surg. 43(9):1732-5, 2008

Posttraumatic Stress Disorder

Posttraumatic stress disorder (PTSD) is a constellation of symptoms associated with re-experience such as denial, avoidance and arousal after going through a life-threatening event. PTSD can affect children, parents and family members after a surgical experience. Several studies have demonstrated that symptoms of post-traumatic stress can be seen in young children undergoing bone marrow transplantation up to one year after transplant. Burn children with PTSD reported an impaired overall health related quality of life and limited physical (e.g., more bodily complaints) and emotional functioning (e.g., more feelings of sadness). High levels of posttraumatic stress disorder symptoms are common in the recovery period after pediatric orthopaedic trauma, even among patients with relatively minor injuries. Children admitted to the hospital after injuries are at higher risk for such symptoms. Parents of children undergoing cardiopulmonary bypass surgery are at increased risk for intermediate and long-term psychological malfunctioning. Acute symptoms of PTSD in parents shortly after discharge of their child are a major risk factor for the development of chronic PTSD. In this era of prenatal ultrasound confirmation of surgical diagnosis is imperative that pediatric surgeons gather with affected parents and explain before embarking in the surgical care of their child.

References:

1- Stuber ML, Nader K, Yasuda P, Pynoos RS, Cohen S: Stress responses after pediatric bone marrow transplantation: preliminary results of a prospective longitudinal study. J Am Acad Child Adolesc Psychiatry. 30(6):952-7, 1991
2- Landolt MA, Buehlmann C, Maag T, Schiestl C: Brief Report: Quality of Life Is Impaired in Pediatric Burn Survivors with Posttraumatic Stress Disorder. J Pediatr Psychol. Sep 21, 2007.

3- Sanders MB, Starr AJ, Frawley WH, McNulty MJ, Niacaris TR: Posttraumatic stress symptoms in children recovering from minor orthopaedic injury and treatment. J Orthop Trauma. 19(9):623-8, 2005
4- Helfricht S, Latal B, Fischer JE, Tomaske M, Landolt MA: Surgery-related posttraumatic stress disorder in parents of children undergoing cardiopulmonary bypass surgery: a prospective cohort study. Pediatr Crit Care Med. 9(2):217-23, 2008
5- Nagata S, Funakosi S, Amae S, Yoshida S, Ambo H, Kudo A, Yokota A, Ueno T, Matsuoka H, Hayashi Y: Posttraumatic stress disorder in mothers of children who have undergone surgery for congenital disease at a pediatric surgery department. J Pediatr Surg. 43(8):1480-6, 2008

---

* 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