



Haddad Syndrome

Haddad syndrome is a rare disorder considered a neurocristopathy, a set of disease processes characterized by maldevelopment of the neural crests. Neurocristopathies are a group of diverse disorders resulting from defective growth, differentiation, and migration of the neural crest cells. Children with Haddad syndrome present with the combination of congenital central hypoventilation syndrome (also known as Ondine's curse), and Hirschsprung's disease (HD). Almost 10% of these cases of Hirschsprung's disease have total intestinal aganglionosis. The initial clinical manifestation in the neonatal period is apnea of no identifiable cause followed by constipation or bowel obstruction. Strong clinical suspicion, rectal biopsy and genetic mutation detection makes the diagnosis of Haddad syndrome. Other associated features includes ophthalmic abnormalities, esophageal dysmotility, sensorineural hearing loss, neural crest tumors and signs and symptoms of autonomic nervous system dysfunction. A genetic basis for Haddad syndrome has been suggested associated with a mutations detection rate above 90% in chromosome 4p12 PHOX2B gene. Inheritance is autosomal dominant. Management consist of tracheotomy, home ventilatory support, TPN, proximal decompressive ostomy and long small bowel myectomy-myotomy. The prognosis is poor specially in underdeveloped countries.

References:

- 1- Shahar E, Shinawi M: Neurocristopathies presenting with neurologic abnormalities associated with Hirschsprung's disease. *Pediatr Neurol.* 28(5):385-91, 2003
- 2- D'Souza S, Khubchandani RP: Haddad syndrome--congenital central hypoventilation associated with Hirschsprung's disease. *Indian J Pediatr.* 70(7):597-9, 2003
- 3- Bajaj R, Smith J, Trochet D, Pitkin J, Ouvrier R, Graf N, Sillence D, Kluckow M: Congenital central hypoventilation syndrome and Hirschsprung's disease in an extremely preterm infant. *Pediatrics.* 115(6):e737-8, 2005
- 4- Dejhalla M, Parton P, Golombek SG: Case report of Haddad syndrome in a newborn: congenital central hypoventilation syndrome and Hirschsprung's disease. *J Perinatol.* 26(4):259-60, 2006
- 5- Lai D, Schroer B: Haddad syndrome: a case of an infant with central congenital hypoventilation syndrome and Hirschsprung disease. *J Child Neurol.* 23(3):341-3, 2008
- 6- Otabor IA, Balint JP, Besner GE: Myectomy-myotomy for long segment Hirschsprung's disease in a patient with Haddad syndrome. *J Pediatr Surg.* 44(3):620-2, 2009

Disc Cell Battery Ingestion

Preschool children and toddlers enjoy taking things from their hand to their mouth. This includes disc, button or coin cell batteries with more than 3000 coin cell battery ingestion reported yearly in the United States. Button batteries are being used with increasing frequency in a variety of devices including hearing aids, watches and

calculators. Most of these ingested foreign bodies will pass the gastrointestinal tract without causing harm, but a few will produce a very serious complication. Such rare complications include esophageal perforation & stricture, aorto-esophageal fistula, gastric perforation, tracheo-esophageal fistula and vocal cord paralysis. The tissue damage that result from contact with charged battery is a chemical burn caused by production of sodium hydroxide (cathode) and hydrochloric acid (anode) generated from electric current passing through physiologic electrolyte solution. The alkaline burn with liquefaction necrosis, fat saponification and inflammatory cell infiltration causes the most severe histologic injury. It's not caused by the content of the battery or pressure necrosis changes. Coin cell batteries differ from coin currency in simple x-rays. If the battery impacts in the esophagus or hypopharynx, emergency endoscopic management is necessary. Once in the stomach, the battery will usually pass through the gastrointestinal tract without long-term complications. Its passage can be monitored with serial radiographs.

References:

- 1- Kost KM, Shapiro RS: Button battery ingestion: a case report and review of the literature. *J Otolaryngol.* 16(4):252-7, 1987
- 2- Maves MD, Carithers JS, Birck HG: Esophageal burns secondary to disc battery ingestion. *Ann Otol Rhinol Laryngol.* 93(4 Pt 1):364-9, 1984
- 3- Slamon NB, Hertzog JH, Penfil SH, Raphaely RC, Pizarro C, Derby CD: An unusual case of button battery-induced traumatic tracheo-esophageal fistula. *Pediatr Emerg Care.* 24(5):313-6, 2008
- 4- Hamilton JM, Schraff SA, Notrica DM: Severe injuries from coin cell battery ingestions: 2 case reports. *J Pediatr Surg.* 44(3):644-7, 2009
- 5- Litovitz T, Schmitz BF: Ingestion of cylindrical and button batteries: an analysis of 2382 cases. *Pediatrics.* 89(4 Pt 2):747-57, 1992

Proteus Syndrome

Proteus syndrome (PS) is a rare congenital hamartomatous syndrome that causes sporadic overgrowth of multiple tissues in a patchy or mosaic pattern. The overgrowth can involve skin, subcutaneous tissue, connective tissue (including bone), the central nervous system, and viscera. Complications of PS include progressive skeletal deformities, plantar gigantism of the hands and feet, invasive lipomas, benign and malignant tumors, and deep venous thrombosis with pulmonary embolism. The name Proteus comes from a Greek mythical sea god who was able to change his body form freely. The disease process is not usually apparent at birth but develops rapidly in childhood. Common manifestations include macrodactyly, vertebral abnormalities, asymmetric limb overgrowth and length discrepancy, hyperostosis, abnormal and asymmetric fat distribution, asymmetric muscle development, connective-tissue nevi, and vascular malformations. Diagnosis and management of the disease depend heavily on clinical evaluation and imaging using strict criteria. Histopathological features of lesions resected from children with PS predominantly include hamartomatous mixed connective tissue lesions, benign neoplasms such as lipomas, and lymphatic-rich vascular malformations. Potential complications such as difficult intubation, pulmonary hypertension, and pulmonary thromboembolism necessitates careful preoperative and

anesthetic preparation.

References:

- 1- Biesecker LG: The multifaceted challenges of Proteus syndrome. JAMA. 285(17):2240-3, 2001
- 2- Jamis-Dow CA, Turner J, Biesecker LG, Choyke PL: Radiologic manifestations of Proteus syndrome. Radiographics. 24(4):1051-68, 2004
- 3- Cekmen N, Kordan AZ, Tuncer B, Gungor I, Akcabay M: Anesthesia for proteus syndrome. Paediatr Anaesth. 14(8):689-92, 2004
- 4- Biesecker L: The challenges of Proteus syndrome: diagnosis and management. Eur J Hum Genet. 14(11):1151-7, 2006
- 5- Hoey SE, Eastwood D, Monsell F, Kangesu L, Harper JI, Sebire NJ: Histopathological features of Proteus syndrome. Clin Exp Dermatol. 33(3):234-8, 2008
- 6- Furquim I, Honjo R, Bae R, Andrade W, Santos M, Tannuri U, Kim C: Proteus syndrome: report of a case with recurrent abdominal lipomatosis. J Pediatr Surg. 44(4):E1-3, 2009

* 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>

8 PSU 1993-2009
ISSN 1089-7739