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Acute Scrotum

The term acute scrotum refers to signs and symptoms associated with local inflammation of the scrotum that appears suddenly and usually is not associated with trauma. Is a common urological emergency. Such signs and symptoms include scrotal pain, swelling, redness and heat. The most common causes of acute scrotum in children constitute testicular torsion, appendix testis torsion, epididymitis, orchitis and pyocele. Testicular torsion, a surgical emergency, occurs in 15% of all cases and is the most important condition to diagnose and manage early in order to avoid testicular loss, fertility problems and medico-legal issues. Testicular loss commences past the twelve hours of initiation of symptoms. Beyond twenty-four hours of symptoms testicular loss is the norm. This is the main reason why in the absence of ancillary studies surgeons immediately explore the acute scrotum. The two most commonly used preoperative studies are testicular scan and color Doppler ultrasound. Testicular scans reliable show whether the testes have vascular flow or not, but are difficult to be obtained in the middle of the night. Doppler ultrasounds are operator dependant and when done by experienced physician can help reduce the number of emergency operations and hospitalization days. Clinical judgement by the surgeon is probably the most important factor in assessing testicular salvage. In the face of doubt the next step in management is immediate surgical scrotal exploration.

References:

- 1- Dunne PJ, O'Loughlin BS: Testicular torsion: time is the enemy. *Aust N Z J Surg.* 70(6):441-2, 2000
- 2- Weber DM, Rosslein R, Fliegel C: Color Doppler sonography in the diagnosis of acute scrotum in boys. *Eur J Pediatr Surg.* 10(4):235-41, 2000
- 3- McAndrew HF, Pemberton R, Kikiros CS, Gollow I: The incidence and investigation of acute scrotal problems in children. *Pediatr Surg Int.* 18(5-6):435-7, 2002
- 4- Stehr M, Boehm R: Critical validation of colour Doppler ultrasound in diagnostics of acute scrotum in children. *Eur J Pediatr Surg.* 13(6):386-92, 2003
- 5- Ben-Meir D, Deshpande A, Hutson JM: Re-exploration of the acute scrotum. *BJU Int.* 97(2):364-6, 2006
- 6- Terai A, Yoshimura K, Ichioka K, Ueda N, Utsunomiya N, Kohei N, Arai Y, Watanabe Y: Dynamic contrast-enhanced subtraction magnetic resonance imaging in diagnostics of testicular torsion. *Urology.* 67(6):1278-82, 2006
- 7- Schalamon J, Ainoedhofer H, Schleef J, Singer G, Haxhija EQ, Hollwarth ME: Management of acute scrotum in children - the impact of Doppler ultrasound. *J Pediatr Surg.* 41(8): 1377-1380, 2006

Pinch Off Syndrome

Implantable central venous catheters constitute a necessity for the management of long term intravenous nutrition and chemotherapy. Implantable central venous access devices placed via the subclavian vein may become obstructed by thrombosis, impingement against a vein wall, or compressed between the clavicle and first rib. Compression of the

catheter between the clavicle and first rib is known as pinch-off syndrome (POS). Beside obstruction, pinch-off syndrome can cause fragmentation, fracture or rupture of the catheter causing embolization of the released fragment of tubing. Mechanical friction against the catheter has been well established as the mechanism for most fractures. POS is characterized by intermittent catheter malfunction in conjunction with radiologic evidence of catheter compression. Warning signs of POS include difficulty withdrawing blood samples and resistance to infusion of IV fluids. Catheter transection with migration of the catheter into the heart or pulmonary artery may be accompanied by the sudden onset of chest pain, palpitations, and arrhythmias. Electron microscopic scanning tends to prove that the catheter's rupture is caused by a fatigue process. Treatment of POS is removal of the catheter. If the tip of the catheter has embolized, it can usually be retrieved percutaneously with a transvenous snare. POS can be prevented by using the internal jugular vein for access rather than the subclavian vein.

References:

- 1- Hinke DH, Zandt-Stastny DA, Goodman LR, Quebbeman EJ, Krzywda EA, Andris DA: Pinch-off syndrome: a complication of implantable subclavian venous access devices. *Radiology*. 177(2):353-6, 1990
- 2- Nace CS, Ingle RJ: Central venous catheter "pinch-off" and fracture: a review of two under-recognized complications. *Oncol Nurs Forum*. 20(8):1227-36, 1993
- 3- Andris DA, Krzywda EA, Schulte W, Ausman R, Quebbeman EJ: Pinch-off syndrome: a rare etiology for central venous catheter occlusion. *JPEN J Parenter Enteral Nutr*. 18(6):531-3, 1994
- 4- Mercuri M, Distefano M, Crovaro M, Giri S, Sportelli G, Carrara A, Butti A, Marin AW: Central venous catheter disruption and embolization: percutaneous retrieval. A case report. *Eur Rev Med Pharmacol Sci*. 4(5-6):133-8, 2000
- 5- Fazeney-Dorner B, Wenzel C, Berzlanovich A, Sunder-Plassmann G, Greinix H, Marosi C, Muhm M: Central venous catheter pinch-off and fracture: recognition, prevention and management. *Bone Marrow Transplant*. 31(10):927-30, 2003
- 6- Mirza B, Vanek VW, Kupensky DT: Pinch-off syndrome: case report and collective review of the literature. *Am Surg*. 70(7):635-44, 2004
- 7- Sarzo G, Finco C, Zustovich F, Parise P, Savastano S, Degregori S, Vecchiato M, Merigliano S: Early rupture of subclavian vein catheter: a case report and literature review. *J Vasc Access*. 5(1):39-46, 2004

Falciform Ligament Abscess

The falciform ligament is a parasagittal structure which extends from the umbilicus to the diaphragm containing the ligamentum teres and remnants of umbilical veins. It has an intrahepatic course between the quadrate lobe and the left lobe of the liver communicating with the portal triad. It is very rare to develop a falciform ligament abscess in children. Falciform ligaments abscess present with fever, leukocytosis, postprandial fullness and a right upper quadrant mass. Computerized axial tomography (CAT scan) is the essential tool in arriving at a correct preoperative diagnosis demonstrating a cystic cylindrical mass in the anterior abdomen that courses the falciform ligament while helping define the relationship of the vascular structures at the porta hepatis. Most cases are associated with infection from the umbilicus, gallbladder or a concomitant infected ventriculo-peritoneal shunt. Portal pyemia is another complication associated with falciform ligament abscess. Management consists of intravenous antibiotics and percutaneous drainage.

References:

- 1- Lipinski JK, Vega JM, Cywes S, Cremin BJ: Falciform ligament abscess in the infant. *J Pediatr Surg*.

20(5):556-8, 1985

2- Laucks SS 2nd, Ballantine TV, Boal DK: Abscess of the falciform ligament in a child with a ventriculoperitoneal shunt. J Pediatr Surg. 21(11):979-80, 1986

3- Sones PJ Jr, Thomas BM, Masand PP: Falciform ligament abscess: appearance on computed tomography and sonography. AJR Am J Roentgenol. 137(1):161-2, 1981

4- Brock JS, Pachter HL, Schreiber J, Hofstetter SR: Surgical diseases of the falciform ligament. Am J Gastroenterol. 87(6):757-8, 1992

5- Pratap A, Tiwari A, Anchal N, Agrawal CS, Shreshta P, Shakya VC: Falciform ligament abscess with portal pyemia in a newborn. J Pediatr Surg. 41(8):1473-5, 2006

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