



PEDIATRIC SURGERY Update*

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Laparoscopic Bladder Injury

Laparoscopy is a standard technique utilized in many surgical procedures proving itself important in as much as convalescence, less postoperative pain, better cosmesis and less hospital stay refers. Inserting trocar cannulas into the abdominal cavity can cause iatrogenic injury to intraabdominal organs, namely, blood vessels, viscera and bladder. Bladder injury during laparoscopy is very rare occurring with an estimated incidence of 0.5% of all general surgery laparoscopic procedures. The risk is increased in children due to smaller operative field. Most cases of bladder injury occur during emergency procedures performed in and toward the pelvis. Laparoscopic appendectomy is the procedure most commonly associated with bladder injury in children. Hollow organs should be decompressed to minimize damage to these structures during laparoscopy. Placement of a bladder catheter (Foley) during pelvic procedures, including appendectomy, reduces but does not eliminate the possibility of causing injury to the bladder. Bladder injury occurs during suprapubic trocar placement (most commonly) or while dealing with an inflammatory procedure near the bladder. Bladder injury can also occur if a urachal remnant is injured during suprapubic trocar insertion. In the immediate postop period, a child with laparoscopic bladder injury will show suprapubic pain, hematuria, urinary retention, urinary leakage from wound sites, cystitis or even a subtle rise in creatinine. The systemic inflammatory response can include suprapubic cellulitis and crepitation from an underlying infection if the injury is delayed. Most trocar injuries produce a through and through perforation of the bladder tangentially or including two holes. The diagnosis of bladder injury is established with contrast cystogram. Findings could be of extraperitoneal or intraperitoneal bladder injury. Extraperitoneal injury can be managed conservatively with bladder drainage and antibiotics. Intraperitoneal bladder injury needs operative repair.

References:

- 1- Levy BF, De Guara J, Willson PD, Soon Y, Kent A, Rockall TA: Bladder injuries in emergency/expedited laparoscopic surgery in the absence of previous surgery: a case series. *Ann R Coll Surg Engl.* 94(3):e118-20, 2012
- 2- Lad M, Duncan S, Patten DK: Occult bladder injury after laparoscopic appendectomy. *BMJ Case Rep.* 2013 Nov 22;2013. pii: bcr2013200430. doi: 10.1136/bcr-2013-200430.
- 3- Hotonu SA, Gopal M: Bladder injury in a child during laparoscopic surgery. *J Surg Case Rep.* 2019 Feb 19;2019(2):rjz043. doi: 10.1093/jscr/rjz043. eCollection 2019 Feb.
- 4- Deshpande AV, Michail P, Gera P: Laparoscopic repair of intra-abdominal bladder perforation in preschool children. *J Minim Access Surg.* 13(1):63-65, 2017
- 5- Godfrey C, Wahle GR, Schilder JM, Rothenberg JM, Hurd WW: Occult bladder injury during laparoscopy: report of two cases. *J Laparoendosc Adv Surg Tech A.* 9(4):341-5, 1999

6- Ostrzenski A, Ostrzenska KM: Bladder injury during laparoscopic surgery. *Obstet Gynecol Surv.* 53(3):175-80, 1998

Thyroid Lymphoma

Lymphoma arising primarily from the thyroid gland is a very uncommon malignancy comprising less than 5% of all thyroid cancers and less than 2% of extranodal lymphomas. Non-Hodgkin lymphoma of the thyroid gland has a female predominance. Thyroid lymphoma can be confused with anaplastic thyroid cancer in as much as both have rapid growth associated with dyspnea, dysphagia, pain, stridor, coughing, choking and hoarseness of voice. Most cases are euthyroid. Many cases of thyroid lymphoma have a ten-year prior history of Hashimoto thyroiditis. Large cell lymphoma probably evolves from persistent low-grade mucosa-associated lymphoid tissue (MALT) malignant lymphoma. Fine needle aspiration cytology has a limited role in diagnosing thyroid lymphoma since the cytological differentiation from lymphocytic thyroiditis and anaplastic carcinoma is difficult. A core needle or open biopsy is usually required to diagnose thyroid lymphoma. Thyroid lymphoma can be confused with anaplastic carcinoma needing differentiation using immunohistochemical assays with antibodies to cytokeratin and leukocyte common antigens. Most thyroid lymphomas are of B-cell origin predominantly diffuse large cell type. This does not mean that Hodgkin's, Burkitt, plasmacytoma and T-cell lymphoma have also been reported in a lesser scale. Management of thyroid lymphoma is based in the histologic subtype, stage of disease and tumor bulk. In general treatment includes a combination of monoclonal antibodies, chemotherapy and radiotherapy. The presence of histopathological features of MALT constitutes a favorable prognostic factor for high grade lymphomas with five years survival of 90%. Lymphomas of non-MALT origin have a poorer prognosis with 5 year survival of less than 50%. Factors predicting worse prognosis include tumor size over 10 cm, advance stage, obstructive local symptoms, rapid tumor growth and mediastinal involvement. With this regimen of management, the need for debulking and thyroidectomy has been reduced in this condition unless the patient has airway compromise. Secondary thyroid lymphoma originates from a disseminated non-thyroidal neoplasia that metastasize to the thyroid gland with widespread disease and higher mortality rates.

References:

- 1- Sarinah B, Hisham AN: Primary lymphoma of the thyroid: diagnostic and therapeutic considerations. *Asian J Surg.* 33(1):20-4, 2010
- 2- Peixoto R, Correia Pinto J Soares V, Koch P Taveira Gomes A: Primary thyroid lymphoma: A case report and review of the literature. *Ann Med Surg (Lond).* 13:29-33, 2016
- 3- Gonzalves M, Gaspar E, Santos L, Carvalho A: When a Goitre is a Thyroid Lymphoma. *Eur J Case Rep Intern Med.* 2018 Dec 27;5(12):000999. doi: 10.12890/2018_000999. eCollection 2018.
- 4- Walsh S, Lowery AJ, Evoy D, McDermott EW, Prichard RS: Thyroid lymphoma: recent advances in diagnosis and optimal management strategies. *Oncologist.* 18(9):994-1003, 2013
- 5- Stein SA, Wartofsky L: Primary thyroid lymphoma: a clinical review. *J Clin Endocrinol Metab.* 98(8):3131-8, 2013
- 6- Sharma A, Jasim S, Reading CC, et al: Clinical Presentation and Diagnostic Challenges of Thyroid Lymphoma: A Cohort Study. *Thyroid.* 26(8):1061-7, 2016

Malfunctioning Peritoneal Dialysis

Dialysis using the peritoneal surface is an effective temporary therapy used widely in children and adults affected with end stage renal disease. A viable catheter allowing adequate inflow and outflow of dialysate fluid is essential for continuous peritoneal dialysis therapy to be successful. Malfunctioning of the peritoneal catheter is a common complication encountered during peritoneal Dialysis. Malfunctioning might occur due to kinking, catheter migration out of the pelvis, mispositioning of the tip, and obstruction of the catheter due to debris or fibrin deposition, blood clots, omental wrapping or intraperitoneal adhesions. The incidence of malfunctioning peritoneal catheters used for dialysis can occur in more than 50% of patients. Catheter related problems are blamed for up to 20% of patient transfers to hemodialysis. When there is obstruction to flow of dialysate fluid through the catheter some non-surgical maneuvers that can be accomplished to salvage the situation include infusion of urokinase to lyse the fibrin clot, forced flushing the catheter, the use of metal guidewire or Fogarty catheters to manipulate and clear the way to flow. Should this simple maneuver failed to restore the catheter flow then surgical intervention is warranted. This usually requires open surgical removal and replacement of the catheter. Laparoscopy is a minimal invasive technique alternative to rescue malfunctioning catheters under direct vision. Using laparoscopy for reestablishment of flow through the catheter we can identify the real cause of malfunctioning whether is migration or obstruction and perform the necessary steps to correct the problem. Migration of the catheter tip from the pelvis is the most common laparoscopic finding found in malfunctioning peritoneal cannulas. This is managed with repositioning of the tip in the pelvis. This is followed by omental wrapping or dense adhesions as a cause of obstruction. Partial omentectomy and adhesiolysis is necessary in such situations to reestablish flow. Laparoscopy can also determine if the peritoneal absorptive capacity is overturned and the child needs removal of the catheter and commencement of hemodialysis. Catheter survival rate of 60-90% at one year can be achieved after laparoscopic salvage.

References:

- 1- Alabi A, Dholakia S, Ablorsu E: The role of laparoscopic surgery in the management of a malfunctioning peritoneal catheter. *Ann R Coll Surg Engl.* 96(8):593-6, 2014
- 2- Beig AA, Marashi SM, Asadabadi HR, Sharifi A, Zarch ZN: A novel method for salvage of malfunctioning peritoneal dialysis catheter. *Urol Ann.* 6(2):147-51, 2014
- 3- Salgaonkar HP, Behera RR, Sharma PC, Katara A, Bhandarkar DS: Minimally invasive surgery for salvage of malfunctioning peritoneal dialysis catheters. *J Minim Access Surg.* 15(1):19-24, 2019
- 4- Maheshwari PN: Laparoscopy for continuous ambulatory peritoneal dialysis catheter placement and management of malfunctioning peritoneal dialysis catheter. *J Minim Access Surg.* 15(1):88-89, 2019
- 5- Kouri AM, Wilson AC, Nailescu C: A malfunctioning peritoneal dialysis catheter: Answers. *Pediatr Nephrol.* 32(3):441-442, 2017
- 6- Kouri AM, Wilson AC, Nailescu C: A malfunctioning peritoneal dialysis catheter: Questions. *Pediatr Nephrol.* 32(3):439-440, 2017

***Edited by: Humberto Lugo-Vicente, MD, FACS, FAAP**

**Professor of Pediatric Surgery, University of Puerto Rico - School of Medicine,
Rio Piedras, Puerto Rico. Director - Pediatric Surgery, San Jorge Children's & Woman**

Hospital.

Address: P.O. Box 10426, Caparra Heights Station, San Juan, Puerto Rico USA 00922-0426.

Tel (787) 340-1868 and 999-9450 E-mail: *titolugo@coqui.net*

Internet: <http://home.coqui.net/titolugo>

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