



PEDIATRIC SURGERY Update © **Vol. 37 No. 06 DECEMBER 2011**

Single Site Laparoscopic Surgery

As technological surgical advances continue to occur in the field of laparoscopic surgery in search of the scarless operation, single site umbilical laparoscopic procedures have emerged. A single multi-port with several holes is introduced through the navel, instead of several small incisions. The working space in children is small and space is needed for instrument triangulation and retraction. Nevertheless, single site umbilical laparoscopic surgery is performed in children for such procedures as cholecystectomy, appendectomy, intussusception reduction, splenectomy, nephrectomy, inguinal hernia repair, fundoplication, gastrostomy, orchiopexy and pyloromyotomy. Due to lack of triangulation roticulating and curved instruments have been developed for single port procedures. Most roticulating instruments are disposable and need a learning curve for safe use. Alternatives to roticulating instruments are rigid bent instruments which can be reused and are low cost. The shaft of the telescope comes longer to avoid clashing with the surgeons hand. Retraction can be achieved with the used of magnets. This is achieved with magnetic intracorporeal graspers and an extracorporeal magnet that is manipulated over the abdominal wall to adjust and control the instruments. Laparoscopic surgery in children is moving toward achieving this goal of scarless surgery.

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Acquired Tracheoesophageal Fistula

Acquired tracheoesophageal fistula (TEF) is a rare clinical disease encountered in the pediatric age. Most cases are the result of a benign condition. Complications resulting from such conditions as prolonged mechanical ventilation, indwelling tracheal or esophageal stents, granulomatous mediastinal infection, trauma, iatrogenic injuries,

ingested foreign body and caustic ingestion are the common cause for development of an acquired TEF. The most common cause of acquired TEF in children is foreign body impaction. Onset of symptoms can be immediate with respiratory difficulty, subcutaneous air, pneumothorax or mediastinum. It can be chronic with coughing, choking, respiratory infections or dysphagia. Increased tracheal secretions, air leak around the tube cuff, suctioning of gastric contents through the tracheotomy, abdominal distention, and air leakage from a nasogastric or gastrostomy tube are among the signs that should suggest the potential diagnosis of TEF. Diagnostic evaluation should include chest film, water soluble esophagogram, bronchoscopy and esophagoscopy. Initial management should consist of stabilization and prevention of airway contamination by the fistula. This is followed by gastrostomy and jejunostomy to vent and feed the child respectively. Reducing inflammation, managing pulmonary infection and improving nutrition can hasten spontaneous closure in a 4-6 week period. Failure of conservative management requires surgical intervention. This includes cervical or thoracic closure of the TEF with interposition muscle if necessary. Other larger fistulas will require more complex procedures.

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Prevention CVC Infections

Central venous catheter (CVC) are an indispensable tool in the management of acute and chronic diseases in children. The most common complication of use of CVC is bloodstream infection. Recent evidence-based studies and metaanalysis have found: 1) chlorhexidine skin prep and impregnated dressing can reduce CVC colonization and bloodstream infection. Chlorhexidine in neonates and premature infants can cause skin irritation and systemic absorption. 2) use of heparin and antibiotic impregnated CVC can decrease CVC colonization and bloodstream infection. 3) Ethanol and Vancomycin lock therapy can reduce the incidence of CVC infection. Vancomycin-heparin lock is associated with asymptomatic hypoglycemia. 4) Benefit of systemic prophylactic antibiotic at the time of CVC insertion is unclear. 5) With regard to site of insertion, subclavian placement has a reduced incidence of CVC colonization. 6) CVC infection in the setting of short-term use should undergo catheter removal with systemic antibiotics for 7-14 days. 7) Patient in long-term CVC use who develop infection with *S. Aureus*, gram-negative bacilli, *Candida*, clinical deterioration or persistent relapsing bacteremia

should undergo immediate catheter removal and defined course of systemic antibiotics, except in rare circumstances when no alternate venous access is available.

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