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Genital Warts

Genital warts in children are rare and usually (>90%) the result of infestation of the keratinocytes with human papilloma virus (HPV) in the form of condyloma acuminatum (CA). This includes warts in the genital region of prepubertal infant or child such as perianal, vestibular, vulvar or periurethral. Main clinical manifestations of anal warts are cauliflower-like condylomata acuminata that usually involves moist surfaces, keratotic and smooth papular warts usually on dry surfaces, and subclinical flat warts that can be found on any mucosal or cutaneous surface. Mode of transmission can occur from an infected maternal birth canal (perinatally), by autoinoculation or heteroinoculation from common hand warts, through sexual abuse and possibly indirect transmission via fomites. Girls are twice as often affected as boys. Predisposing factors for genital warts include social problems, lack of hygiene, promiscuity, diabetes, HIV infected individuals and ammoniacal erythema. Presence of genital warts in children raises concern of possible sexual abuse. The probability of sexual abuse increases with the age of the child. CA in children is a diagnostic difficulty due to the possibility of sexual transmission, though non-sexual transmission is very frequent also in children. Nonsexual CA is present almost exclusively in the mucosal epithelium in children. There is a need for a multidisciplinary approach to management with potential social-medicolegal implications. Conventional management for genital warts in children relies on chemical (podophyllotoxin) and physical destruction methods that can be difficult, painful and variably effective with a high recurrent rate, frequently requiring general anesthesia. Intraurethral fluorouracil and lidocaine instillation is effective in CA. Other modality of management includes immunotherapy such as topical Imiquimod cream, cimetidine, and intralesional or systemic interferon. Surgical excision of genital warts is safe, effective and provides opportunity to assess the extent of the lesion and tissue for accurate diagnosis. Indications for surgical management include large, recurrent or refractory lesions, as well as the need for histological identification and acquiring tissue for immunotherapy if needed. The technique of ultrasonic surgical aspiration for the management of CA under general anesthesia results in minimal discomfort, rapid healing and no scarring. Electrocautery fulguration and cryosurgery have also been found successful therapy options. The primary prevention of HPV infection through vaccination is essential in decreasing the incidence of the disease.

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Postappendectomy Intraabdominal Abscess

Intraabdominal abscess (IA) formation is a common secondary complication after surgery for perforated appendicitis with an incidence as high as 20%. The technique in removing the perforated appendix whether laparoscopic or open does not have an impact in the development of an IA. The child with a postappendectomy fluid collection can develop prolonged fever, leukocytosis, elevated CPR, abdominal pain, diarrhea, and tachycardia. The initial imaging of choice when looking for a fluid collection is an ultrasound since carries no radiation injury risk to the child. Should the child not respond to further antibiotic therapy or signs of sepsis ensues the next imaging should be an abdominopelvic CT-Scan with oral/IV contrast looking for enhancement from the collection and anatomic window for drainage. Lymphopenia, due to suppression of immune function after sepsis, is a predictive indicator of an IA and can be considered to decide duration of antibiotic therapy. The same occurs with the use of the neutrophil to lymphocyte ratio above 8. They are complimentary. Management of postappendectomy IA includes intravenous antibiotics, percutaneous interventional radiology (IR) drainage or open/laparoscopic drainage. The size of the fluid collection is decisive since collections measuring less than 3 to 5 cm can be managed solely with antibiotics. Collections larger than 5 cm (or 100 cc volume) need percutaneous IR drainage, claimed as treatment of choice for these larger collections with a high success rate and low morbidity. Main contraindication to IR drainage includes lack of access such as interloop abscess or proximity to vascular or other solid organs. Complex or thick abscess drained can benefit from using fibrinolytic therapy with tissue plasma activator if drain is clogged. Complications of IR drainage include enterotomy with fistula formation, hemorrhage and sepsis. Should IR drainage not be amenable, surgical drainage using either an open or laparoscopic technique might be needed. Open laparotomy has inherent risks such as incisional pain, high wound infection rate, incisional hernias and poor cosmetic results. The final issue is how long to give IV antibiotics after drainage of a postappendectomy IA. Three to five days is sufficient antibiotic therapy should the child normalize GI tract function, has no abdominal symptom, normalize WBC count < 11000, normal lymphocyte count, normal CRP, no tachycardia, no tachypnea and afebrile. There is no need to repeat imaging studies in patients that have recovered physically and laboratory from a drained intraabdominal abscess postappendectomy. Prolonged use of antibiotics after surgery for perforated appendicitis does not reduce the incidence of postoperative abscess formation.

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Empyema: Fibrinolytics vs VATS

Empyema is an infection of the pleural cavity most commonly caused by an initial postpneumonic infected fluid collection. Less than 1% of childhood pneumonias are complicated by pleural empyemas. Empyema goes through three stages: Stage I (exudative) - effusion, pH > 7.2, LDH < 1000 IU/L, glucose < 60 mg%, negative culture, no loculation; Stage II (fibrinopurulent) - increase loculation, positive culture/gram stain, suppuration with fibrin deposit, > 10K WBC (empyema); Stage III (organized) - multiloculated parapneumonic effusion, trapped lung, lung restriction and pleural cortex formation. Stage I is simple, while Stage II and III is complicated empyema. Initial management of postpneumonic fluid collection is intravenous antibiotics. If there is no clinical response or fluid collection persists/enlarged after 48 hrs of therapy, imaged-guided chest tube drainage should be performed. Definitive management of empyema involves cleaning the pleural space of pus and solid material with video assisted thoracoscopic debridement (VATS) or chemical dissolution with fibrinolytic therapy. VATS has shown to produce earlier and more complete resolution of empyema than chest tube drainage. With VATS the majority of patients experience complete recovery with decreased chest tube duration, duration of antibiotics, need for repeat procedures, length of stay in hospital and mortality. Fibrinolytics (streptokinase, urokinase, recombinant tPA) break down fibrin, the dominant component of the extracellular matrix of septations and solid debris identified in empyemas. Fibrinolysis has been to be superior to chest tube drainage alone. Chest tube placement with fibrinolytic instillation done under conscious sedation results in similar success rate to VATS with marked reduction in costs. An algorithm that begins with fibrinolytics and progress to VATS as needed is superior in resource conservation without loss of efficacy. Best available evidence suggests that although primary VATS and fibrinolysis are clinically equivalent, fibrinolysis is less expensive, less invasive and can be performed under conscious sedation rather than using general anesthesia. Fibrinolysis has the added advantage of earlier pleural drainage and shorter length of stay postprocedure compared with VATS. Less than 4 to 20% of patients managed with primary fibrinolysis will

require operative intervention. A repeated course of fibrinolytic therapy after tube repositioning can lead to successful nonoperative management of empyema without increasing hospital stay. Secondary surgical procedures are not significantly less frequent after initial intrapleural fibrinolytic therapy than after initial pleural puncture or pleural draining catheter. VATS treatment at any time during the disease is not associated with shorter length of stay. VATS is associated with a significant reduction in the thoracotomy rate, historically. Primary VATS is associated with less chest radiation exposure, shorter duration of mechanical ventilation and fewer days admitted in intensive and hospital than chest tube fibrinolysis. We still need to identify risk factor for fibrinolytic therapy failure.

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