



# **PEDIATRIC SURGERY Update** ©

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### **Bladder Diverticulum**

A bladder diverticulum (BD) is a rare pseudodiverticulum formed by mucosal herniation through an area of weakness in the muscular wall of the bladder typically in a paraureteral location. They are classified as congenital, acquired, iatrogenic or part of a syndrome. They result from congenital disarrangement of the detrusor muscle fibers at the ureterovesical junction or associated with increased intravesical pressure due to bladder-outlet obstruction. Bladder diverticulum can cause chronic urinary infection, urinary retention, pelvic mass or acute urethral obstruction by impinging upon the posterior urethra when they enlarged. BD in childhood almost exclusively occurs in the male. The most common clinical presentation of BD is acute pyelonephritis due to urine stasis within the diverticulum. A high prevalence of neurogenic bladder is present in patients with urinary BD. Long-term presence of a bladder diverticulum can lead to malignancy. VCUG is the most accurate imaging tool in the diagnosis of large bladder diverticula offering information regarding concomitant vesicoureteral reflux and bladder-neck and urethral morphology. Additional imaging methods of diagnosis include intravenous urography, urodynamics studies, nuclear renal scans, CT-Scan and MRI. Diverticulectomy is the recommended treatment of choice for bladder diverticulum either symptomatic or not. Transvesical diverticulectomy is the recommended technique as it allows complete correction of any accompanying pathology by ureteral reimplantation or bladder-neck incision with minimal complications and no morbidity regarding long-term bladder function. Recurrence of the diverticula after appropriate surgery is usually associated with Ehlers-Danlos, Menkes or William syndrome or other collagen vascular disorders. Most patients recover and progress well after surgical management.

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## Upper Lip Frenulum

Oral frenulum is a bandlike formation of congenital origin located in the midline composed of fibrous, muscular or fibromuscular tissue covered with a mucous membrane. Under normal conditions most oral frenulum do not have pathological consequences, otherwise they can present clinical problems of orthodontic, prosthetic, phonetic or periodontal nature. The upper lip frenulum is an oral mucosal membrane extending from the internal surface of the upper lip to its insertion on the midline of the attached interincisal gingival tissue of the upper maxilla. In children this type of frenulum can cause breastfeeding problems, interincisal diastema, denture related problems, periodontal disease secondary to retained or impacted food, oral hygiene difficulties and impairment of lip mobility and short lip which in turn require orthodontic treatment. The diagnosis is clinical. Management of upper lip frenulum causing this different problems is surgical. Frenulectomy should be performed in children under general anesthesia. Techniques of frenulectomy include simple or rhomboidal excision, V-Y plasty procedure and/or Z-plasty. Simple removal consists of sectioning or transverse sectioning the frenulum with simple suturing. They can leave a scar in the same direction of the frenulum bringing problems with upper lip lengthening and are contraindicated in cases with short lips exhibits an impaired lip seal. In this cases the best technique is Z-plasty. The procedure can be performed using laser being more precise and clean, shorter operative time, eliminating bleeding and not needing suturing since the wound is left opened to heal by secondary intention.

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## Ceftriaxone Biliary Pseudolithiasis

Ceftriaxone is a semisynthetic third generation cephalosporin with a wide spectrum of powerful antimicrobial activity administered in one daily dose. If administered in high doses ceftriaxone can induce reversible gallbladder sludge, which can mimic true cholelithiasis clinically and sonographically. The term pseudolithiasis is coined to denote the reversible, benign character of this complication upon discontinuation of ceftriaxone therapy. Ceftriaxone associated pseudolithiasis is related to the high concentration and precipitation of this drug in the gallbladder as an insoluble calcium-ceftriaxone complex

salt. Approximately 40% of ceftriaxone is excreted unmetabolized into the bile exceeding its solubility potential. The other 60% is excreted in the urine. Pseudolithiasis develops in 25 to 50% of children receiving ceftriaxone. The time for pseudolithiasis to develop and resolve completely is unrelated to age, sex or type of infection. Fasting is unrelated to development of pseudolithiasis. A few cases might also develop nephrolithiasis as well. Pseudolithiasis is usually asymptomatic and diagnosed using ultrasound. Cholecystectomy, even if symptomatic, in cases of ceftriaxone induced pseudolithiasis is unnecessary. Observation and ultrasound follow-ups will help recognize the dissolution of the biliary lithiasis. When gallstone and/or sludge are detected in the gallbladder in children by ultrasonographic examination, the administration of ceftriaxone must be sought beyond other causative factors.

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