



# **PEDIATRIC SURGERY Update** ©

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### **Toxoplasma Lymphadenitis**

Enlarged lymph nodes are a common problem seen in children of all ages. Lymphadenitis commonly represents a transient response to a benign local or generalized infection. The most common causes of subacute or chronic lymphadenitis in children include cat scratch disease, mycobacterial infection and toxoplasmosis. The diagnostic approach to a child with an adenopathy longer than six weeks includes serological assays, radiological studies (ultrasound), fine needle aspiration and most helpful complete excisional lymph node biopsy to establish a histologic diagnosis of malignancy or infection. Infestation with *Toxoplasma gondii* occurs frequently in children around the world. In immunocompetent host, toxoplasma primary infection produces little symptoms, is self-limiting and has a favorable prognosis without treatment. Less than 10% of infected children are symptomatic, with lymphadenopathy as the most frequent clinical manifestation. Symptoms associated with toxoplasmosis include asthenia, fever and nonspecific such as headache, myalgia or arthralgia. Acute lymphadenopathy usually occurs in the head and neck region, followed by supraclavicular, and inguinal sites. The lymph node is painless, solitary, not matted, with mild inflammation and do not suppurate. Toxoplasma lymphadenitis is most often diagnosed by lymph node biopsy and/or serological assays. Fine needle aspiration is rarely useful for the diagnosis since it does not permit evaluation of lymph node architecture. A negative Sabin-Feldman dye test in a lymphadenopathy with more than three weeks evolution excludes toxoplasma as an etiologic agent. The Sabin-Feldman dye and IgM-ISAGA tests is positive in most patients with toxoplasmosis within the first three months after infestation. Observation is all needed for single toxoplasma lymphadenitis. Co-trimoxazole (TSM) is a good therapeutic agent for cerebral or ocular toxoplasmosis.

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### **Electrocautery Injury**

Bovie designed the first surgical diathermy machine in 1928 to facilitate tumor removal and hemostasis in neurosurgery. The electrocautery involves the passage of electrical current through the body to burn the tissue at the active electrode tip. The current (or flow of electrons) excites tissue molecules producing heat. For cutting intracellular water boils, cells explode and tissue divides. At lower temperatures the heat causes cell dying and blood protein is coagulated causing hemostasis. There are two diathermy modes: monopolar and bipolar. In monopolar the current enters the patient through the small area active electrode and exits safely through the large area neutral grounding pad electrode. This circuit can cause unintended high frequency current burn injury to the patient if not used properly. Bipolar diathermy is safer than monopolar as the current passes between the two prongs of the electrode without significant flow through the patient. A neutral electrode is not required. Advantage of bipolar diathermy is reduction of tissue damage. Electrocautery injury can occur in the form of burn, electrocution, operating room fire, smoke inhalation and gene mutation. Iatrogenic cautery burns can occur from direct contact to the active electrode resting on the patient skin, burns at the site of the grounding electrode, burns from electrode heating of pooled solutions such as spirits, and burns outside the operative field due to an alternate grounding source. Most burns occur due to faulty application of the grounding pad failing to have good contact with the patient skin. An electrocautery injury is a medical error that has medicolegal and ethical implications. The improper use of energy devices may increase patient morbidity and mortality.

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## **Splenic Cysts Sclerosis**

Splenic cysts are rare in children. Most cases (75%) are labeled secondary or 'pseudocysts', the result of blunt trauma representing a late manifestation of posttraumatic intrasplenic or subcapsular hematoma formation. True primary nonparasitic splenic cysts are extremely rare. Splenic cysts can attain large sizes before they cause symptoms. Clinically splenic cysts present with left upper quadrant abdominal pain or gastric fullness depending on their size. Diagnosis is made with abdominal US or CT-Scan. They should be managed because of chronic symptoms and the risk of rupture. Symptomatic cysts were originally managed with splenectomy.

With the advent of spleen-preserving procedures and the use of laparoscopy the standard care has changed to total cystectomy with partial splenectomy or partial decapsulation of the cyst preserving a significant mass of the spleen. Another alternative management of splenic cysts consists of US or CT-guided percutaneous drainage followed by sclerotherapy through an inlaying catheter. Several sclerosing agents such as alcohol, formalin, phenol, Pantopaque, doxycycline or tetracycline have been utilized as sclerosing agent during these percutaneous procedures. Results have varied with the used of the sclerotic agent. The most common used sclerotic agent is alcohol since is wide available, high efficient and ease to use. Image-guided sclerotherapy works on the principle of protein denaturation, cell death and fibrosis in the wall of the cyst. The main reason for failure using sclerotic agents occurs when they fail to cover completely the surface of the cyst leaving cells along the cyst wall which cause continuation of fluid secretion and cyst recurrence. Retreatment of splenic cysts managed with sclerotherapy is more often necessary than after using this technique with renal or liver cysts. Only in 20% will the cyst disappear completely. Complications associated with sclerosis consist of vasovagal reactions, shoulder pain, free intraabdominal bleeding, bleeding into the cyst cavity, chemical peritonitis and cyst infection. Randomized control trial is needed to compare surgery with sclerosis.

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