



PEDIATRIC SURGERY Update 8

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Seprafilm

Adhesion formation after abdominal surgery is an expected sequelae which can cause future development of chronic abdominal pain, acute or chronic bowel obstruction or infertility in a minority of patients. Seprafilm is a sodium hyaluronate and carboxymethylcellulose antiadhesion bio adsorbable membrane that is available for use during abdominal surgery. Preclinical studies in animals have shown that Seprafilm is safe and effective in reducing postsurgical adhesions. In adults, seprafilm has shown to be safe and significantly reduces the incidence, extent, and severity of postoperative adhesions to the midline incision compared with no treatment. Has also been found to reduce the formation of postsurgical adhesions in patients with ulcerative colitis or familial polyposis who has undergone restorative proctocolectomy and J-pouch along with gynecologic patients undergoing myomectomy. Seprafilm had no adverse effect on wound healing. Seprafilm adhesion barrier has resulted in a significant reduction of adhesion formation to polypropylene mesh during repair of abdominal wall hernias. The anti-adhesive effects of seprafilm might be caused by increasing the level of peritoneal hydroxyproline levels though experimental evidence suggests the physical properties (barrier, hydroflotation and siliconizing effect) of the membrane are primarily responsible for adhesion prevention. Wrapping the suture or staple line of a fresh bowel anastomosis with seprafilm should be avoided, because the data suggest that this practice may increase the risk of anastomotic leaks.

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Chronic Granulomatous Disease

Chronic Granulomatous Disease (CGD) is a very rare inherited primary immunodeficiency disease of childhood. Due to defective respiratory burst, phagocytic cells of children with CGD are not able to kill certain bacteria and fungi despite normal chemotaxis and phagocytosis. The proper functioning of the NADPH oxidase of the phagocytic cell is impaired. Children with CGD are rendered susceptible to infection by a group of catalase positive microorganisms due to the inability of phagocytic cells to reduce molecular oxygen and create reactive oxygen metabolites necessary for normal intracellular killing. Catalase positive organisms affecting children with CGD include staph aureus, Escherichia Coli, Serratia, Salmonella, Candida and Aspergillus. Children with CGD present clinically with recurrent abscess involving skin, soft tissue (most common site), lymph nodes, lung, bone and liver that respond poorly to antibiotics needing surgical drainage. Palisading granulomas with central necrosis can be seen in histologic samples. Though four different types of CGD have been described, most cases are X-linked defects. Diagnosis of CGD is made by showing the inability of neutrophils from the patient to undergo respiratory burst after phagocytosis (NBT Test). Fungal infections account for most deaths. Children with CGD should receive long-term Trimethoprim-Sulfamethoxazole prophylaxis. Gamma interferon reduces the number of infection requiring hospitalizations.

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Primary Peritonitis

Primary peritonitis or spontaneous bacterial peritonitis refers to a diffuse infection of the peritoneum with no obvious focus of infection. Includes peritoneal infection in children with indwelling catheters such as peritoneal cannulas and ventriculo-peritoneal shunts. During the past 20 years the incidence of primary peritonitis has decreased due to the widespread use of systemic antibiotics. The bloodstream is the most common pathway of infection toward the peritoneum. Clinically the child develops high fever, vomiting and generalized peritoneal signs sometimes indistinguishable from acute appendicitis needing urgent surgery. Paracentesis smear or intraoperative gram stain culture when no secondary cause for the peritonitis can be established usually obtains the causative organism of the peritonitis. During exploratory laparotomy no secondary cause is identified and the peritoneal fluid is usually cloudy. Antibiotics should be continued until peritoneal cultures arrive. Most children with primary peritonitis have a smooth recovery.

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