PEDIATRIC SURGERY *Update* ©
Vol. 45 No. 03 SEPTEMBER 2015

Subcutaneous Zygomycosis

Subcutaneous zygomycosis, also known as Entomophthoromycosis, is a rare, sporadic subcutaneous fungal infection largely restricted to tropical areas of Africa, Asia and South America. Two clinically distinct form can be found: subcutaneous zygomycosis, caused by Basidiobolus ranarum and rhinofacial zygomycosis caused by Conidiobolus coronatus. Neither of these two forms occurs preferentially in patients with underlying disease nor defective immunity. These fungi are used as bio-insecticides. Subcutaneous zygomycosis is characterized by the formation of firm and non-tender disciform nodule generally appearing on the extremity and trunk mostly in children. The nodule can enlarge spreading locally. Skin is usually tethered to the mass and it may be pigmented. Males are more much frequently affected than females. The mode of infection is by traumatic implantation through abrasion or pricks. The infection can also be transmitted by insect bites or by transepidermal inoculation with contaminated vegetable matter. Subcutaneous zygomycosis can mimic a soft tissue tumor such as synovial sarcoma or Burkitt's lymphoma. Histologically an eosinophilic granulation infiltration is found with broad thin walled infrequently septate hyphal fragments enveloped by eosinophilic "Splendore-Hoeppli" material. Diagnosis of subcutaneous zygomycosis is accepted if the fungus is demonstrated in either histology or culture. Role of surgery in subcutaneous zygomycosis is limited to diagnostic biopsy. Excision leads to recurrence. The standard treatment of choice for subcutaneous zygomycosis is oral potassium iodide or imidazoles in particular itraconazole, ketaconazole and posaconazole.

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Hypertrophic Scar

Hypertrophic scar (HTS) is a benign hyperproliferative growth of dermal fibroblasts. They occur most commonly after thermal injury to the skin caused by burns and trauma, but can also be seen after elective surgical procedures. Almost 15% of all wounds can develop into a hypertrophic scar. Children with hypertrophic scars experience marked physical (deformity, restricted range of motion, pain and pruritus) and psychological (cosmetic concern) problems. Fibroblasts from hypertrophic scars produce increase amounts of collagen when compared with normal fibroblasts. The undesirable physical properties of HTS tissue can be attributed to the presence of a large amount of extracellular matrix that is of altered composition and organization, compared to normal dermis or mature scar. This matrix is the product of a dense population of fibroblasts, maintained in a hyperactive state by inflammatory cytokines such as TGF-b and other factors, some of which may be physical in origin. Most HTS are accepted by the patient so long as they are asymptomatic. Management of HTS can range from conservative to excision to intralesional injection therapy or a combination of these. The most commonly used therapeutic method for HTS and keloids consist of the steroid triamcinolone acetonide (Kenalog) wound injection. The dosage varies from 10-40 mg/ml with a treatment interval administered every 4-6 weeks until the scar flattens. Kenalog can suppress vascular endothelial growth factor, inhibit fibroblast proliferation, inhibit transforming growth factor and induce scar regression. Varying the dosage can provide good results with less recurrence and complications. Results can be improved and scar recurrence reduced when triamcinolone is combined with other therapies such as 5-Fluorouracil (best results in terms of rapid response and fewer side-effects), surgery, pulsed-dye laser, and radiation therapy.

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Annular Pancreas: Late Presentation

Annular pancreas (AP) is a congenital anomaly occurring when a ring of pancreatic tissue encircles the duodenum partially or completely. Infants born with this anomaly can develop duodenal obstruction, stenosis, peptic ulcer, obstructive jaundice, pancreatitis or pancreatic malignancy. Others remain asymptomatic until later in life. Pathogenesis includes hypertrophy of both the ventral and dorsal anlage, adhesion of a portion of the ventral anlage to the duodenum before migration, or fusion of aberrant

pancreatic tissue from the duodenum. The annulus is usually comprised of a band of pancreatic tissue, which encircles the second portion of the duodenum. The annulus itself can be complete, partial, intramural, or extramural. AP can be classified according to where the annular duct communicates with Wirsung's (Type 1; most common), common bile duct, papilla or Santorini. Around 50% of all annular pancreas are diagnosed in infancy due to complete duodenal obstruction. Later in life the older child or adult develop chronic partial duodenal obstruction associated with abdominal pain, nausea and postprandial vomiting. Diagnosis relies on images. UGIS might depict an incomplete duodenal obstruction. CT-Scan shows that pancreatic tissue encircles the second portion of the duodenum. ERCP can show the classic features of a pancreatic duct system encircling the duodenum. MRCP is the best non invasive study showing the aberrant pancreatic duct circling and extending to the right of the duodenum. Intraoperative diagnosis remains the best diagnostic modality for annular pancreas in any age group. Annular pancreas with duodenal obstruction should be managed with a duodenal physiological bypass procedure such as duodenoduodenostomy or duodenojejunostomy depending on the individual case. Gastrojejunostomy is an alternative option in case of grossly fibrotic duodenal C-loop, but can lead to marginal ulcers. Local resection of the annular segment is avoided because of the fear of development of pancreatic fistula and pancreatitis.

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ISSN 1089-7739