



PEDIATRIC SURGERY Update © **Vol. 29 No. 03 SEPTEMBER 2007**

Multinodular Goiter

Non-toxic multinodular goiter (MNG) refers to multinodular enlargement of the thyroid gland without overt hormone output. MNG is rare in children affecting primordially adolescent kids. The etiology of pediatric MNG appears multifactorial including autoimmune and familial factors (familial form has increased incidence of malignancy). Children presents with asymptomatic progressive nodular enlargement of both lobes of the thyroid gland. Work-up should include neck ultrasonography, thyroid scintigraphy, thyroid hormone levels, assessment of autoantibodies (antimicrosomal, antithyroid), aspiration cytology and histological examination. In populations with iodine deficiency, multinodular goiter is endemic. MNG follows an initial phase of hyperplastic goiter or results from the generation of several individual nodules. Alterations of the stromal and vascular tissues as well as the occurrence of somatic mutations are contributing factors. Histological examination of removed affected glands shows multiple adenomas with areas of epithelial hyperplasia, hemorrhage, and calcification. MNG has an 8% potential for malignant transformation in the form of papillary carcinoma, mostly increased in familial cases, those that have received cervical irradiation and presence of cervical adenopathies. Indications for surgery in non-toxic MNG includes compression symptoms such as painful or difficulty in swallowing, breathing discomfort, suspicion of carcinoma or cosmetic. Total thyroidectomy seems to be the most effective surgical procedure with lower morbidity than subtotal thyroidectomy.

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Neonatal Mastitis

Neonatal mastitis is a disorder specific to newborn breasts that usually occurs between the second and fourth week of life. All cases usually occur in full term infants with a sex ratio of 2:1 (females: males). Bilateralism is rare. Systemic spread or extra mammary foci even rarer. Clinically the baby presents with a swollen, tender, erythematous breast bud. The

etiology of the mastitis includes skin organism most commonly staphylococcus aureus (85%) followed by gram negative bacilli and mycobacterium. Management of neonatal mastitis consists of intravenous antibiotics and warm compresses. Beta-lactamase-resistant antibiotics are a reasonable empirical initial treatment pending culture results. If the child develops fluctuation, then needle aspiration or incision and drainage should be done through a circumareolar incision taking care not to excise normal breast tissue. Surgical drainage encouraged resolution of the inflammatory process, aids in the recovery of the organism, and assured appropriate drug therapy. The immediate prognosis of neonatal mastitis is excellent though abscess formation requiring incision may be detrimental for later breast development.

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Secondary Hyperparathyroidism

Secondary hyperparathyroidism refers to a condition seen almost exclusively in the context of chronic renal failure. Due to the low plasma concentration of ionized calcium in children with end stage renal disease there is compensatory hyperplasia of the parathyroid glands with subsequent chronic increase in parathyroid hormone levels. This leads to a severe osteopenia known as renal osteodystrophy leading to skeletal deformities. Most children are managed with medication and Vitamin D with efforts to maintain a normal calcium and phosphate concentration. The pathogenesis of this condition is completely or partially corrected after successful renal transplantation. With refractory medical management, symptomatic disease (bone pain, muscle weakness and pruritus) or biochemical signs (hypercalcemia, and high plasma alkaline phosphatase and parathyroid hormone concentrations) the need for parathyroidectomy arises. Management consists of surgical exploration of the neck with removal of four parathyroid glands and immediate autotransplantation into the forearm. Recurrence of symptoms and parathyroid hormone elevation occurs when the patient has a fifth parathyroid gland, with incomplete surgery or more commonly due to recurrent hyperplasia of the grafted gland.

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