Study of Skin lesions of surgical importance in different endocrinal surgical diseases

Essay

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Wael Hamza

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ACTH:Adrenocortico tropic hormone.

ANA: Antineutrophilic antibody.

ANCA: antineutrophil cytoplasmic antibodies.

anti-Tg AB: antithyroglobulin Antibodies

Anti-**TPO AB**: Anti-thyroid peroxidase Antibodies.

CRH: corticotrophin -releasing hormone .

IGF-1: insulin-like growth factor 1.

NLD: Necrobiosis lipoidica.

NME: Necrolytic migratory erythema.

PTH:Parathroid hormone.

PTM: pretibial myxedema.

RAIU: Radioactive iodine uptake.

T3: triiodothyronine

T4: thyroxine

TFTs: thyroid function tests.

TSH:Thyroid stimulating hormone.

Introduction

Introduction

The skin often signals systemic changes. Some neoplastic diseases that affect internal organs may trigger several cutaneous manifestations. Endocrine pathology associated with skin diseases include: thyrotoxicosis; hypothyroidism; Cushing syndrome; Addison disease; acromegaly; hyperandrogenism; hypopituitarism; primary hyperparathyroidism; hypoparathyroidism; and manifestations of diabetes mellitus. The striking features of Cushing syndrome are centripetal obesity, moon facies, buffalo hump, supraclavicular fat pads, and abdominal striae. In Addison disease, the skin is hyperpigmented, mostly on the face, neck and back of the hands. Virtually all patients with acromegaly have acral and soft tissue overgrowth, with characteristic findings, like macrognathia and enlarged hands and feet and facial features are coarser. Conditions leading to hyperandrogenism in females present as acne, hirsutism and signs of virilization. Some of the cutaneous manifestations of diabetes mellitus include necrobiosis, diabetic dermopathy, and acanthosis nigricans ***(Jabbour, 2003).***

Symptoms associated with hypercortisolemia include weight gain, lethargy, weakness, menstrual irregularities, loss of libido, depression, hirsutism, acne, purplish skin striae, and

hyperpigmentation. Associated problems such as diabetes mellitus or hypertension may also bring the patient to medical attention. Signs that differentiate Cushing's syndrome from pseudo - Cushingoid states most reliably include the presence of proximal myopathy, easy bruising, and thinness and fragility of the skin ***(John et al., 2008).***

Addison disease is a disorder that occurs when the adrenal glands do not produce enough hormones. The symptoms of Addison's disease develop gradually and may become established before they are recognized such as Chronic diarrhea, vomiting, and Extreme weakness, fatigue, dehydration. Another common initial symptom of Addison's disease is the development of patches of skin that are darker than the surrounding skin (hyperpigmentation). This discoloration most commonly occurs near scars, skin creases such as the knuckles, and on the mucous membranes. Skin changes are due to overproduction of corticotropin, which the pituitary makes to try to stimulate the adrenal glands. Corticotropin also stimulate the production of melanin, which causes darkening of the skin ***(Chaker and Vaidya, 2010).***

Diabetes can affect every part of the body, including the skin. Many people with diabetes will have a skin disorder caused or affected by diabetes at some time in their lives. In

some cases, skin problems can be the first sign that a person has diabetes. In some cases, people with diabetes develop skin conditions that can affect anyone. Examples of these conditions include bacterial infections, fungal infections, and itching. However, people with diabetes also are more prone to getting certain conditions. These include diabetic dermopathy, necrobiosis lipoidica diabeticorum, and eruptive xanthomatosis ***(Grandinetti and Tomecki, 2010).***

Thyroid disease is associated with changes in the skin, which may sometimes be the first clinical sign. A variety of cutaneous findings may present in the setting of either a hyperthyroid or hypothyroid state. There may be evidence of the effect of altered concentrations of thyroxine on skin, with changes in texture and hair growth. Associated increases in thyroid stimulating hormone concentration may lead to pretibial myxedema. Cutaneous manifestations generally appear subsequent to the development of thyroid disease, but may be the first presenting sign or even precede the diagnosis by many years. Skin manifestations of thyroid dysfunction may be divided into two main categories: (I) direct action of thyroid hormone on skin tissues, and (II) autoimmune skin disease associated with thyroid dysfunction of autoimmune etiology. ***(Paus, 2010)***

In hyperthyroidism, the skin is warm, soft, and smooth. Hyperhydrosis, especially on palms and soles, may be observed. Scalp hair may be fine and soft, and may be accompanied by a diffuse non scarring alopecia. Patients with hyperthyroidism commonly demonstrate nail changes. Nails may be soft and friable ***(Jabbour, 2003).*** Pretibial myxedema (thyroid dermopathy) is a term used to describe localized lesions of the skin resulting from the deposition of hyaluronic acid, usually as a component of thyroid disease ***(Subramanyam et al., 2013).*** In hypothyroidism, the skin is cold, xerotic and pale. The coldness is due to reduced core temperature and cutaneous vasoconstriction ***(Leonhardt and Heymann, 2002).*** The classic skin findings of hypoparathyroidism also include a dry, rough, keratotic, and puffy skin. Nails may be ridged, lusterless, and distally split; hair is course and brittle ***(Jabbour, 2003).***

Dermatologic manifestations of parathyroid-related disorders, although rare in sporadic cases, are not uncommon in familial syndromes. Patients with familial hyperparathyroidism have several types of skin lesions. In multiple endocrine neoplasia 1, patients commonly have angiofibromas (85%) and collagenomas (70%). They can also present with lipomas or café-au-lait spots. Cutaneous

amyloidosis. Metastatic calcification is an entity commonly encountered in patients with hyperparathyroidism and renal failure. It can be complicated by infections and necrosis. Hypoparathyroidism presenting in the context of polyglandular failure type 1 is characterized by mucocutaneous candidiasis ***(Fuleihan and Rubeiz, 2006).***

Multiple endocrine neoplasia type 1 (MEN1) is a rare hereditary endocrine cancer syndrome characterised primarily by tumours of the parathyroid glands (95% of cases), endocrine gastroenteropancreatic tract, eg gastrinomas, insulinomas and carcinoid tumours (30-80% of cases) and anterior pituitary, eg prolactinomas (15-90% of cases). MEN1 has autosomal dominant inheritance with a high degree of penetrance. Cutaneous tumours are common in MEN1 and include multiple angiofibromas, collagenomas, and lipomas. Recognising these benign tumours is important because they can serve as markers for this tumour syndrome ***(Darling et al., 1997).***

Pancreatic neuroendocrine tumors (PNETs) are rare tumors representing <5 % of all pancreatic malignancies. PNETs are classified by the hormonal products that they produce. A glucagonoma is an extremely rare variant in which glucagon is the primary hormonal product.

Hyperglucagonemia may result in the "glucagonoma syndrome" characterized by a rash known as necrolytic migratory erythema (NME), diabetes mellitus, and other features ***(Batcher et al., 2011).*** NME is characterized by erythematous, well-demarcated plaques that are pruritic and painful, and often involve the intertriginous areas, perineum, and buttocks ***(Eldor et al., 2011).***

Carney complex was originally described in 1985 by J. Aidan Carney as "the complex of myxomas, spotty skin pigmentation and endocrine over activity". The most common type of endocrine tumors in Carney complex is the primary pigmented nodular adrenocortical disease (present in two-thirds of the patients), a form of bilateral adrenal hyperplasia that leads to adrenocorticotropic hormone (ACTH)-independent Cushing syndrome. Carney complex patients also display growth hormone or growth hormone and prolactin (GH-PRL)-secreting (mammosomatroph) pituitary adenomas. Other endocrine glands that can be affected in the Carney complex include (1) the thyroid with thyroid nodules present in up to 75% of the patients and cancer developing rarely; and (2) the gonads: large-cell calcifying Sertoli cell tumors, adrenal crest tumors. Two different breast tumors, which can coexist, have been reported in Carney complex

patients: myxoid fibroadenomas, which are abnormalities of the mesenchyma, and ductal adenomas, which are abnormalities of the epithelium. Female Carney complex patients often develop ovarian cystadenomas and rarely cancer ***(Salpea and Stratakis, 2014).***