

Skin Signs of Systemic Diseases, a Prospective Study from Benghazi, Libya

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Abstract

Introduction: Although most patients who present with skin disease have no associated systemic illness, many systemic diseases have skin manifestations at some stage. Our aim was to study skin signs of internal disease to determine the spectrum and frequency of skin conditions that associated with underlying systemic diseases among dermatology patients.

Materials & Methods: Seven thousands and two hundred patients with dermatologic complaints attending Ibn sina and Jumhoria hospital dermatology clinics as well as patients seen -on call- in medical wards at various Benghazi hospitals were enrolled in our study. A detailed history was recorded and skin examination carried out. Relevant investigations were performed.

Results: Out of 7200 patients with complaints of skin diseases, dermatologic complaints of 280 patients (4%) had an associated systemic illness; these skin findings were reflecting diseases of connective tissue (16%), endocrine (14%), malignancies (12%), nutrition (11%), neuropsychiatric (10%), renal (8%), liver (7%), GIT (4%) and miscellaneous diseases (18%).

Conclusion: Skin diseases may have important systemic associations and the recognition of cutaneous signs of internal diseases is important for early diagnosis and management.

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ric, renal, hepatic, GIT, and miscellaneous. The patients were grouped into three groups based on their age at first visit: children (less than 16 years), adults (17-64 years) and elderly (65 years and more). The data were statistically analyzed using software SPSS.

Results

A total of 7200 dermatology patients were seen, dermatologic complaints of 280 patients (4%) had an associated systemic illness with their skin findings were reflecting internal diseases. Female dominance (68%) was observed and adults constituted the largest group (58%) whereas elderly and children constitute 34% and 8% respectively.

The most frequent observed category was diseases of connective tissue (16%) followed by endocrine (14%), malignancy (12%), nutrition (11%), neuropsychiatric (10%), renal (8%), liver (7%), GIT (4%) and miscellaneous diseases (18%).

Among diseases of connective tissue, Systemic Lupus Erythematosus (SLE) constituted 71% with skin presentations included photosensitivity (89%), vasculitis (5%), discoid lupus and chilblain each (3%). Dermatomyositis (19%); heliotrope rash was seen in all cases. Shawl sign in 50% and guttren sign only in 1 case. Scleroderma (5%) skin finding included telangiectasia, sclerodactyly and calcinosis cutis. A case of Sjögren's syndrome presented with secondary ichthyosis, and a rheumatoid arthritis patient with disseminated herpes zoster secondary to immune suppression by Imuran and steroid.

Skin diseases related to diabetes mellitus constituted 65% of endocrine disease cases, they included generalized pruritus (30%), candidiasis (26%), diabetic ulcer (19%), perforating collagenosis (13%), acanthosis nigricans (10%), ecthyma gangrenosum, diabetic bullae and necrobiosis lipoidica diabetorum, each constitute 2%. Hypothyroidism patients (10%) complained of generalized pruritus, dry tight skin with scleroedema and hair fall. Hyperthyroidism and hyperparathyroidism, each (5%) were presented with generalized pruritus. Striae, hirsutism and acneiform eruption were the presentations in cushing

Introduction

The skin is the largest and the most visible and easily accessible organ of the body and in addition to its functions of protection and as a barrier, it may function as an important indicator of diseases affecting internal organs [1,2]. It may show the first signs of systemic diseases, which may be the only expressions of internal disorders so serious morbidity may be avoided by early recognition of these cutaneous signs [3].

Aim

Our aim was to study skin signs of internal disease to determine the spectrum and frequency of skin conditions that associated with underlying systemic diseases among dermatology patients.

Material and Methods

A prospective study was performed on the patients with dermatologic complaints attending Jumhoria hospital dermatology clinics as well as patients seen -on call- in medical wards at various Benghazi hospitals for a period of two year. Seven thousands and two hundred patients were studied. A detailed history was recorded and skin examination carried out, relevant investigations including variable hematological, biochemical and immunological tests were done. Skin biopsy were performed whenever it is indicated. Data were recorded according to the prepared Performa. The diseases were classified into connective tissue, malignancies, nutrition, endocrine, neuropsychiat-

syndrome (15%).

Skin findings associated with malignancy (12%) were either disease or treatment related. Infections were the most frequent diagnosis in patients with underlying malignancies (38%). Chemotherapy related conditions (9%) include acral erythema and scleroderma. Radiotherapy related panniculitis and surgery related lymphedema, both seen in 6%. Skin Metastasis was reported in 2 cases.

In nutritional group, hair fall and smooth sore tongue due to iron and vitamins deficiency constituted 68% and 15% respectively. The later were seen exclusively in elderly. Koilonychias was found in 5% and periorificial dermatitis due to zinc deficiency in 12%, with all of them were children.

Skin diseases with underlying psychological illness included trichotillomania (31%), neurotic excoriation (25%), delusional parasitosis (23%) and dermatitis artifacta (20%).

Regarding renal diseases, generalized pruritus were a complaint in all cases whereas perforating diseases was the diagnosis in 20%.

Hepatobiliary diseases presentations included pruritus (60%), vasculitis (25%), perforating collagenosis (12%), and 2 cases of lichen planus was associated with hepatitis c virus.

Regarding skin signs of GIT diseases, helicobacter pylori infection associated chronic urticaria (45%) and pruritus (27%) were seen. Presentation of inflammatory bowel disease (18%) included pyoderma gangrenosum and metastatic Crohn's. Dermatitis herpetiformis was the diagnosis in single case.

Miscellaneous group included drug eruptions, immune deficiency; primary and acquired (HIV), rare syndromes as leopard and other conditions like histiocytosis, mastocytosis and Behcet's disease. HIV cases presented with infections and Kaposi sarcoma. Figures (1-26) show various skin signs of systemic diseases.



Figure 1: SLE with photosensitivity.



Figure 2: Vasculitis in SLE.



Figure 3: Heliotrope rash in dermatomyositis.



Figure 4: Telangiectasia in scleroderma.



Figure 5: Diabetic dermopathy.



Figure 6: Diabetic ulcer.



Figure 7: Acanthosis nigricans.



Figure 11: Lichen planus in hepatitis C.



Figure 8: Striae distensae in cushing syndrome.



Figure 12: Pruritus with scratch marks in hepatitis patient.



Figure 9: Periorificial dermatitis in zinc deficiency.



Figure 13: Terry nails in chronic liver disease.

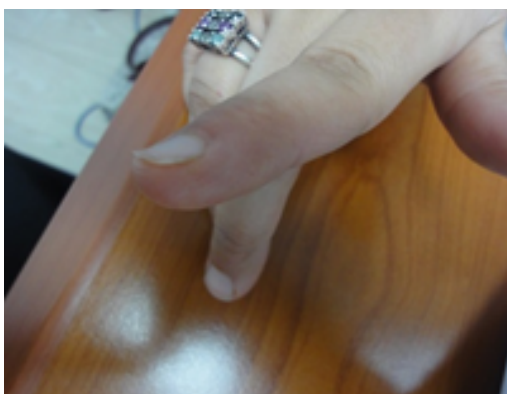


Figure 10: Koilonychia in iron deficiency anemia.



Figure 14: Perforating folliculitis in chronic renal failure.

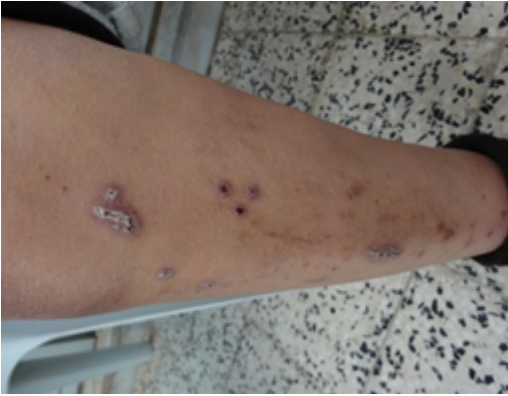


Figure 15: Perforating collagenosis in chronic renal failure.



Figure 18: Chemotherapy induced scleroderma of hands.



Figure 16: Skin metastasis in breast cancer.

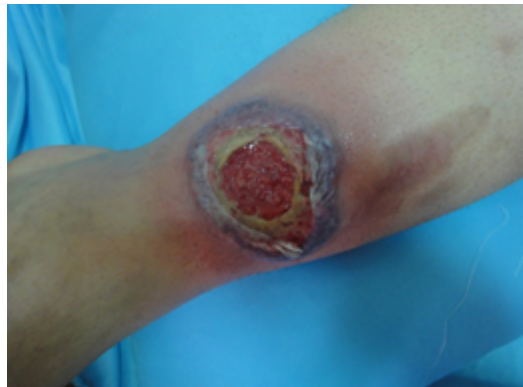


Figure 19: Pyoderma gangrenosum in ulcerative colitis.

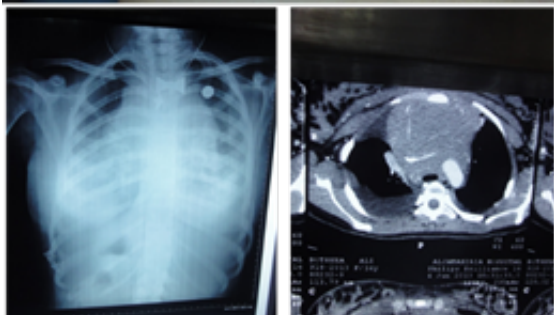


Figure 17: Skin metastasis: the first presentation of mediastinal lymphoma.

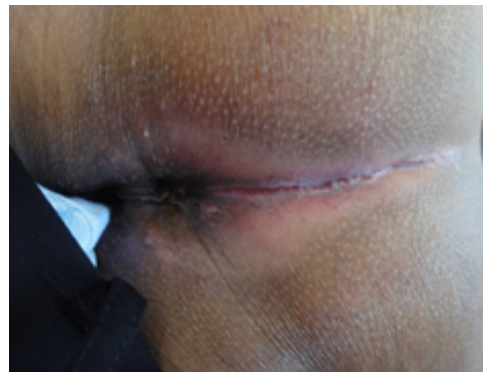


Figure 20: Metastatic chrons.



Figure 21: Dermatitis artifacta.



Figure 25: Aphthus ulcer in behcet's disease.



Figure 22: Trichotellomania.



Figure 26: Leopard syndrome.



Figure 23: Oral thrush in HIV.



Figure 24: Kaposi sarcoma in HIV.

Discussion

The skin communicates with the internal organs and it may reflect their illness. Skin changes due to systemic diseases occur frequently and they can affect the patient's quality of life, in this study 4% of the patients with dermatological complaints had a related associated systemic illness. Although the skin manifestations of systemic disease are usually nonspecific such as pruritus and vasculitis, sometimes they are specific and characteristic [1,2,4].

A number of dermatologic signs reflecting internal illness were reported in this study; they are wide, varied, specific and nonspecific.

Dermatoses associated with connective tissue, endocrine diseases and malignancies were the commonest.

Connective tissue diseases often have classic skin findings, the photosensitive malar rash, which was seen in majority of SLE cases, is indicative of systemic involvement whereas vasculitis indicate disease activity [5,6].

The heliotrope rash, the characteristic sign of dermatomyositis, was seen in all cases [2,4].

The cutaneous changes is characteristic in scleroderma, they are the earliest and the most frequent manifestation. In this study distinctive skin changes including mat like telangiectasia, skin tightness and sclerodactyly were reported [7].

Skin changes seen in endocrine diseases are one of the well-recognized cutaneous manifestations of systemic disease. Approximately half of diabetic patients develop skin disease [8]. Cutaneous signs of diabetes mellitus as necrobiosis lipoidica diabetorum and diabetic dermopathy are extremely important in considering the diagnosis.

In addition diabetic dermopathy could be a useful monitor of angiopathic changes in internal organs [9]. In this study, generalized pruritus and candida infection were the main presentations of diabetic patients.

Thyroid disease associated with changes in skin texture, hair, and nail and generalized pruritus. Hypothyroid patients have dry skin, myxedema and loss of outer third of eye brow, whereas in hyperthyroidism there is hyperhidrosis, pretibial myxedema, acropathy and diffuse thinning of hair [3]. Generalized pruritus was the main presentations in thyroid diseases. Striae distensae, skin atrophy and acneiform lesions are seen in Cushing's syndrome [8].

Internal malignancies may present with distinctive cutaneous findings including cutaneous metastases and cutaneous markers of different tumor syndromes.

Other changes are non-specific as cutaneous infections and pigmentary disturbances. Many findings are related to treatment; surgery, chemotherapy and radiotherapy like alopecia, hand-foot syndrome and mucositis [10]. Skin infections constitute 38% of cutaneous findings in our study whereas metastasis were seen in only 2 cases.

Pruritus occurs in 50%–90% of patients suffering from chronic kidney disease, in this study all the patients having renal disease presents with generalized pruritus. Cutaneous changes secondary to pruritus as excoriations, prurigo nodularis, pigmentary changes and lichen simplex chronicus were also seen. Acquired perforating dermatosis such as perforating folliculitis and reactive perforating collagenosis affects up to 10% of individuals on hemodialysis, it was seen in 20% of renal patients. Renal disease may cause uremic frost, porphyria cutanea tarda and calciphylaxis, these were not reported in this study [3,11].

Liver diseases are associated with a number of cutaneous changes, some of these are non-specific, while others are more specific to the cause of liver disease. Palmar erythema, vascular spiders, pruritus, terry's nails, hair loss and jaundice are common manifestations in chronic liver disease. Generalized pruritus, vasculitis, urticaria, lichen planus, Sjögren's syndrome and porphyria cutanea tarda are related to viral hepatitis [8,12]. In this study pruritus and vasculitis were the main associated skin problems.

Inflammatory bowel diseases are closely related to the skin, causing several conditions that contribute to increased morbidity. Non-specific finding include aphthous stomatitis, pyoderma gangrenosum and erythema nodosum. We reported one case of metastatic Crohn's disease which is a disease specific [11,13].

Some nutritional deficiencies have cutaneous signs, zinc deficiency is characterized by periorificial dermatitis, eczematous plaques, dystrophic nails and hair changes. It has higher prevalence in developing countries. All the reported cases were children who responded quickly to zinc supplementation [14].

Iron-deficiency can cause mucocutaneous changes including hair fall, koilonychia, smooth tongue and pruritus. B12 and folic acid deficiency can also cause glossitis [15].

Patients suffering from psychiatric diseases may present to the dermatologist. Primary psychiatric disorders causing skin problems like trichotillomania, factitial dermatitis, neurotic excoriations and delusions of parasitosis were reported in this study [16].

Cutaneous manifestations are common in patients with HIV infection and they include cutaneous infections, skin tumors, and other mixed skin diseases as seborrheic dermatitis and acneiform folliculitis. We reported one case of Kaposi sarcoma whereas other cases were presented with infections [17].

Leopard syndrome is an acronym for lentiginosities, ECG abnormalities, ocular hypertelorism, pulmonary stenosis, abnormal genitalia, retardation of growth, and deafness. Although Leopard syndrome is rare, clinical relevance of the reported case in this study lies in its early recognition since it can be associated with serious life-threatening cardiac disease [18].

Conclusion

Skin diseases may have important systemic associations, recognition of the clinical cutaneous signs for internal diseases is important for early diagnosis and management of several systemic disorders.

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