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Pregnancy and Skin: A Review

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ABSTRACT

During Pregnancy, alterations in the appearance of the skin are not uncommon. The skin changes in pregnancy can be either physiological, changes in pre-existing skin diseases or development of new pregnancy specific dermatoses. Pregnancy specific skin dermatoses include an ill-defined heterogeneous group of pruritic skin eruptions which are seen only in pregnancy. These include Prurigo of pregnancy, Polymorphic eruption of pregnancy, Pemphigoid gestationis and Intrahepatic cholestasis of pregnancy. Prurigo of pregnancy is the most common of these disorders. Most skin eruptions resolve postpartum and require symptomatic treatment only. Antepartum surveillance is recommended for patients with pemphigoid gestationis and intrahepatic cholestasis of pregnancy as they carry risk to fetus. This Review article deals with the classification, clinical features and treatment of the specific dermatoses of pregnancy.

Keywords: Dermatoses; pregnancy; skin.

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INTRODUCTION

Pregnancy is characterized by many physiological skin changes like striae gravidarum, melasma along with hair changes which include hirsutism and thinning of scalp hair.[1] The nails become often brittle and distal onycholysis may occur in some women.[2] The vascular changes are due to persistent levels of estrogen. The pre-existing conditions of skin in pregnancy either improve or exacerbates due to changes in immunity. As cell mediated immunity is suppressed during normal pregnancy, this makes gravid uterus for increased severity and frequency of skin infections.[3]There are few inflammatory skin dermatoses which are specific to pregnancy and are seen only in pregnancy. Though most of these skin dermatoses are benign and resolve in post partum period, a few can risk fetal life and require antenatal surveillance.[4]

The Specific Dermatoses of Pregnancy

Numerous skin diseases have been described in association with pregnancy or puerpurium. Some of them have classical, distinct, clinical and pathological features. There is still some confusion regarding the terminology for various pregnancy dermatoses. These includes

1) Prurigo of pregnancy (Atopic eruptions of pregnancy)
2) Polymorphic eruption of pregnancy (Pruritic urticarial papules and plaques of pregnancy)
3) Pemphigoid gestationis (Herpes gestationis)
4) Intrahepatic cholestasis of pregnancy (Pruritus gravidarum)

Prurigo of pregnancy (Atopic eruptions of pregnancy)

Prurigo of pregnancy (Figure 1) occurs in about 1 in 300 pregnancies.[5] It is characterized by closely set pruritic, papules that becomes excoriated and crusted. They usually appear between 25 to 30 weeks of gestation and persists for 3 months postpartum. The lesions usually on the extensor surfaces of the legs and upper arms. The abdomen can also be involved. The etiology and pathogenesis is not known, although there is sometimes a history of atopy.[6] The mother and fetus are unaffected. Treatment is symptomatic but unsatisfactory.

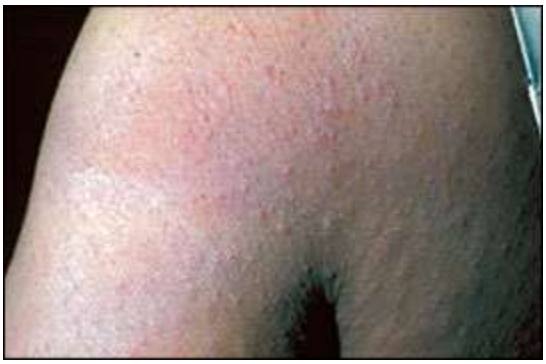

Figure 1: Prurigo of Pregnancy

Polymorphic eruption of pregnancy (Pruritic urticarial papules and plaques of pregnancy)

Polymorphic eruption of pregnancy also known as pruritic urticarial papules and plaques of pregnancy (PUPPP), toxemic rash of pregnancy, toxic erythema of pregnancy and late onset of prurigo of pregnancy. The exact etiology is unknown. It has been proposed that stretching of the skin damages the connective tissue causing subsequent conversion of nonantigenic molecules to antigenic ones, leading to skin eruption.[7-8] PUPPP usually occurs in primigravidas in the third trimester and recurrence in further pregnancies is unusual. The onset is usually in third trimester but occasionally seen in postpartum period. PUPPP has a marked pruritic component and the onset of pruritus coincides with the skin lesions which are seen as polymorphous, erythematous, nonfollicular papules, plaques, and sometimes vesicles. The eruption begins over the abdomen, commonly involving striae gravidarum with sparing of the periumbilical region(Fig.2). It may spread to the breasts, upper thighs, and arms. The face, palms, soles, and mucosal surfaces are usually spared. Histopathological findings are nonspecific and immunopathological studies are negative. It not associated with high materno-fetal morbidity or mortality.[9] Topical corticosteroids are effective and gives symptomatic relief. Lesions resolves near term or postpartum.

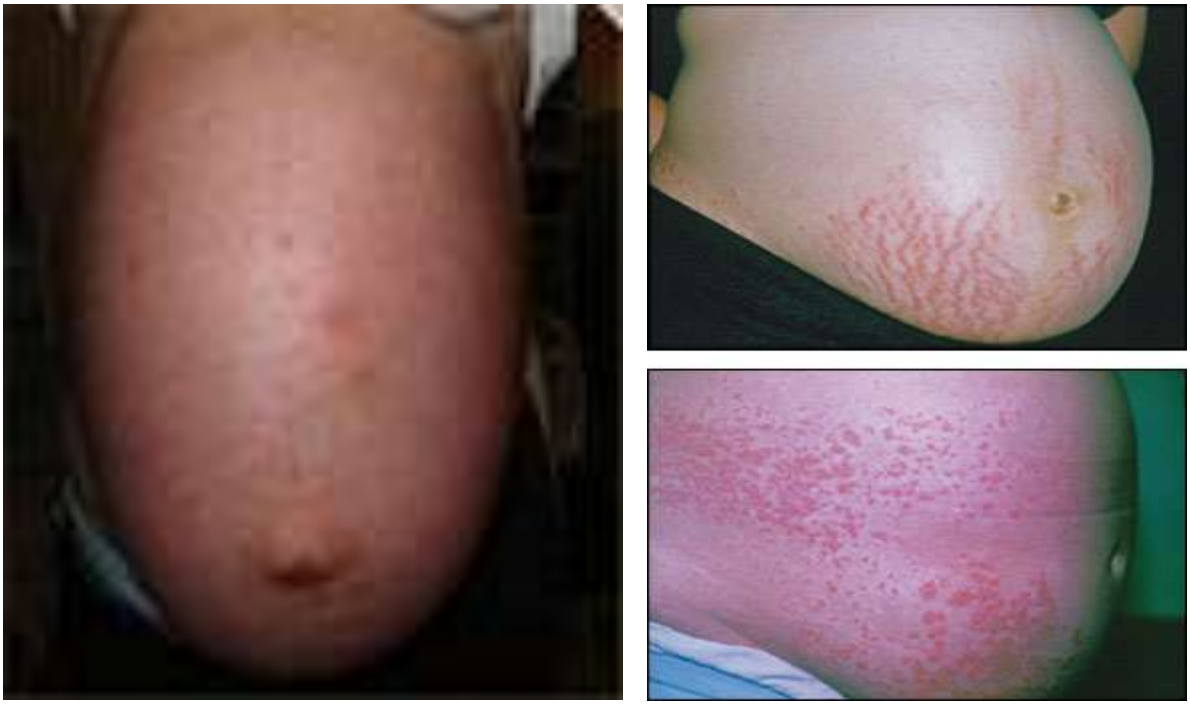

Figure 2: Pruritic Papules and Plaques of Pregnancy involving striae and spares periumbilical region

Pemphigoid gestationis (herpes gestationis)

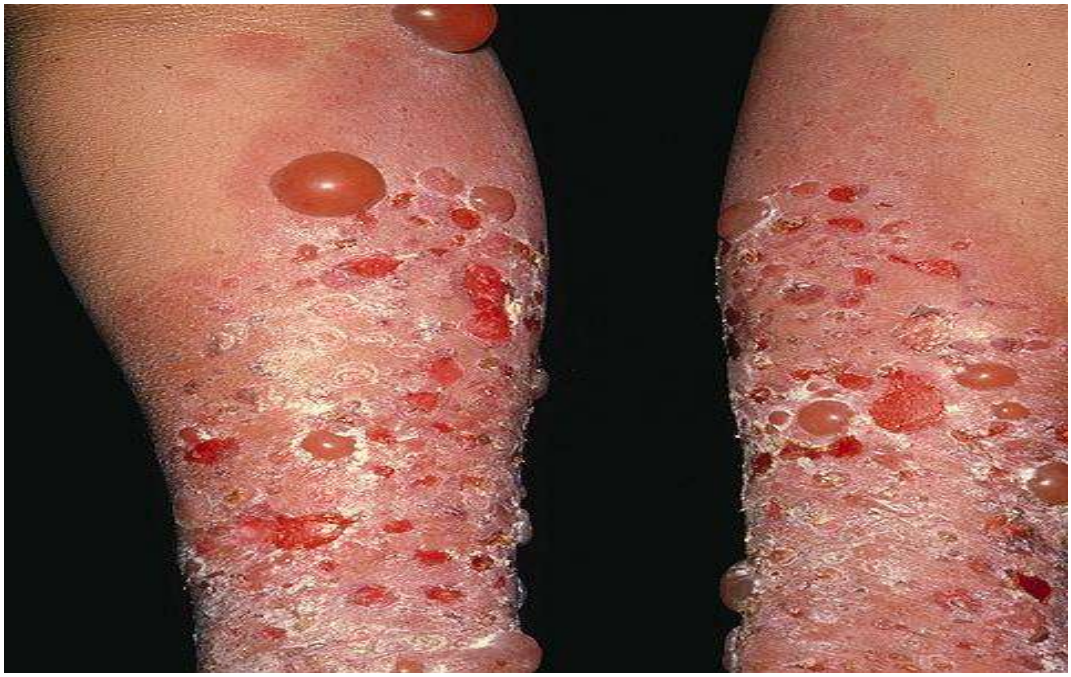

Figure 3: Subepidermal bullae and vesiculation in Pemphigoid gestationis

Pemphigoid gestationis is a rare autoimmune disorder which occurs in about one in 50,000 pregnancies, and begins in the second or third trimester. The condition has been linked to the presence of HLA-DR3 and HLA-DR4 and has a rare association with molar pregnancies and choriocarcinoma.[10] It has been suggested that the disease could be triggered by a placental antigen that causes cross-reaction with skin antigens. This explains the onset of the disease in the periumbilical region. The skin lesions are pruritic, urticarial and vesiculobullous. Histologically, it is characterized by subepidermal vesicle formation,(Figure 3) and immunopathologically by deposition of complement 3(C3) along the basement membrane zone. These features are shared by another skin disease bullous pemphigoid which suggests that herpes gestationis maybe a related entity.[11]The condition may resolve late in pregnancy, but classically flares up again at delivery. Fetal risk has not been substantiated, although immunoglobulinG autoantibodies cross the placenta, and 5 to 10 percent of newborns have urticarial, vesicular or bullous lesions.[12] Mild placental failure has been associated with premature deliveries and newborns that are small for gestational age. Therefore, antenatal surveillance is advised. Affected patients may have nongestational recurrences triggered by oral contraceptives and menstrual cycles.[5] Systemic corticosteroids and intravenous immunoglobulins are effective in the treatment.[13]

Pruritus gravidarum (Intrahepatic cholestasis of pregnancy)

The two terms term pruritus gravidarum and intrahepaticcholestasis of pregnancy (ICP) have been used synonamously.[14] While pruritus gravidarum is classically associated with itching, without any skin lesions and occurs in the first trimester, ICP also called obstetric cholestasis is seen in third trimester and is characterized by pruritus with or without jaundice, absence of primary skin lesions, and with laboratory markers of cholestasis.[15] The skin lesions are usually secondary linear excoriations and excoriated papules, which are caused by scratching and are localized on the extensor surfaces of the limbs, abdomen and back. The severity of skin lesions correlates with the duration of pruritus.[16] The etiology of ICP remains questionable, with positive family history associated with the presence of human leukocy teantigen-A31 (HLA-A31) and HLA-B8. This condition tends to recur in subsequent pregnancies.[15]Those Patients who have a family history of cholelithiasis carry higher risk ofgallstones.[17,18] This condition carries risk to fetus in the form of premature delivery, meconium-stained amniotic fluid, and intrauterine demise.[19] The condition is also leads to vitamin K deficiency and coagulopathy. Henceforth early diagnosis, prompt treatment, and close obstetric surveillance are mandatory in cases of ICP. Ursodeoxycholic acid remains the drug of choice as it is effective to decrease fetal mortality and maternal pruritus.[20]

The Nonspecific Dermatoses of Pregnancy

Pruritus during Pregnancy

Pruritus is a most common symptom of dermatoses suffered by pregnant women which is found in 3% - 14% of cases.[21,22] The dermatoses responsible for it are scabies, urticaria, atopic dermatitis, drug eruptions, and neurodermatitis. Diabetes mellitus, chronic renal failure, iron deficiency anaemia and parasitic infestations may be the causes of pruritus during pregnancy.[23] It can be a manifestation of various dermatoses associated with gravid uterus like herpes gestationis, pruritic urticarial papules and plaques of pregnancy, prurigo gestationis, and impetigo herpetiformis. [24]

Pruritic Folliculitis

It is rare dermatosisoccurs in second and third trimester of pregnancy which can affect one in 3,000 pregnancies.[25] It is characterized by an acneiform eruption consisting of multiple, pruritic, 2 to 4mm, follicular papules or pustules typically seen on the shoulders, upper back, arms, chest, and abdomen. These skin lesions usually resolve spontaneously one to two months following delivery. On histopathology, there is an evidence of acute sterile folliculitis and direct immunofluorescence stains are negative. This condition is not associated with any maternal or fetal morbidity.

Impetigo Herpetiformis

It is very rare disorder, with little more than 100 patients reported in the literature.[26] Whether impetigo herpetiformis (IH) is a form of pustular psoriasis or distinct entity is still unknown during pregnancy. It usually affects pregnant women who often have no personal or family history of psoriasis. It can starts in the last trimester of pregnancy associated with systemic features likes malaise, fever, delirium, diarrhea, vomiting along with skin lesions. Skin lesions begin in intertriginous areas as irregular erythematous patches with superficial pustules and gradually involve the whole body except for the face, hands, and feet. Sometimes features of hypocalcemia may accompany the lesions, the central areas may show crusting while peripheral lesions keeps on extending. Rarely oral and esophageal lesions can be seen.[26]

Papular Dermatitis

It may starts at any time during pregnancy as a pruritic erythematous papules of size 3-5 mm in diameter, topped with central crust, lesions are usually generalized. This entity tends to recur in subsequent pregnancy with fetal loss. Systemic corticosteroids may be effective.

Linear IgM Dermatosis of Pregnancy

It occurs in the last trimester of pregnancy and mimic pruritic folliculitis of pregnancy or polymorphic eruption of pregnancy.[27,28] The condition spontaneously resolves at the end of puerperium. Direct immunofluorescence shows dense linear deposits of IgM in the dermoepidermal junction. Indirect immunofluorescence is negative. An early papule shows a moderate irregular acanthosis of the epidermis, perifollicular fibrosis, and a moderate perivascular infiltrate of lymphocytes and neutrophils. Symptomatic treatment with antihistamines and topical antipruitics is recommended.

CONCLUSION

The dermatoses of pregnancy represent a unique group of disease processes caused or exacerbated by the gravid state. This includes gestational pemphigoid (GP), pruritic urticarial papules and plaques of pregnancy (PUPPP), prurigo of pregnancy (PP), intrahepatic cholestasis of pregnancy (ICP), and impetigo herpetiformis (IH). GP, ICP, and IH may result in serious complications, whereas PUPPP and PP are generally benign processes. Early recognition of these disorders will possibly reduce maternal and fetal morbidity and mortality.

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