Pregnancy Dermatoses

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Physiologic changes
Atopic eruption of pregnancy
Pemphigoid (herpes) gestationis
Polymorphic eruption of pregnancy (PEP), (Pruritic Urticarial Papules and Plaques of Pregnancy)
Intrahepatic cholestasis
Impetigo herpetiformis
Dermatologic Changes during Pregnancy

- **Hyperpigmentation:** localized or generalized
  - Occurs in 90% of pregnant women
  - Increased $\alpha$- and $\beta$-melanocyte-stimulating hormone (MSH), $\beta$-endorphin, estrogen, progesterone

- **Common sites:**
  - Linea alba
  - Nipples, areolae, external genitalia, axillae, neck
  - **Voigt (Futcher) lines:** congenital demarcations along posterior extremities
Dermatologic Changes during Pregnancy

- Melasma occurs in 75% of women during 2nd trimester
  - Centrofacial
  - Malar
  - Mandibular
- Histology shows excessive melanin deposition in epidermis or within melanophages
- UV avoidance and sunscreen are during pregnancy
- Resolves by one year postpartum or after discontinuation of OCPs
  - Persists in 30% of patients
Dermatologic Changes during Pregnancy

- Striae distensae commonly appear during 2nd or 3rd trimester and develop at right angles to skin tension lines
- Eccrine/apocrine changes
  - **Eccrine activity increased**
    - Worsening hyperhidrosis and dyshidrotic eczema
  - **Apocrine activity decreased**
    - Improvement in Fox-Fordyce disease, hidradenitis suppurativa
  - **Sebaceous gland activity increased**
    - Worsening of acne – most notable in 3rd trimester
  - **Montgomery’s tubercles**
    - Brown to tan papules on the areolae
    - Hypertrophy of sebaceous glands
    - 30-50% of pregnant women
Dermatologic Changes during Pregnancy

- Vascular changes due to increase in maternal blood volume, vascular dilation, capillary permeability, and neovascularization
  - Varicosities
  - Pyogenic granulomas
  - Spider angiomas
  - Erythema palmare
Atopic Eruption of Pregnancy (AEP)

- Most common dermatosis in pregnancy, accounts for 50% of pruritic rashes in gravid women, or 1 in 5 to 1 in 20 pregnancies
  - Includes eczema, prurigo, and pruritic folliculitis of pregnancy
- ¾ present prior to the last trimester
- In 80%, it is the first recognized manifestation of eczema, though often have a personal or family history of atopy
- To prevent an allograft-like rejection of fetus, the immune system switches from T_{H1} (cell-mediated) to T_{H2} (antibody mediated), allowing it to survive despite its paternal MHCs
  - Decreased T_{H1}:T_{H2} incites AEP and worsens existing atopic dermatitis
Atopic Eruption of Pregnancy (AEP)

- Characteristic patterns
  - E-type: patchy, eczematous
  - P-type: papular or prurigo
- Recurrence in subsequent pregnancies
- Management for mild disease same as that for mild eczema
- Severe disease may require UVB or systemic steroids
- Fetal prognosis unchanged
Herpes (Pemphigoid) Gestationis

- Occurs in 1:40,000 to 1:60,000, 18% in 1st trimester, 34% in 2nd, and 34% in 3rd
  - Mean onset 21 to 28 weeks
- Associated with maternal MHC II antigens HLA-DR3 and DR4
  - 61-80% express DR3
  - 52-53% express DR4
- Begins as periumbilical, pruritic urticarial papules and plaques that can become targetoid, annular or polycyclic
- Clustered vesicles develop days to weeks later
Herpes (Pemphigoid) Gestationis

- Patients produce anti-hemidesmosome antibodies to the transmembrane NC16A region of BPAG2 antigen [180kDa]
- Biopsy imperative to distinguish from polymorphic eruption of pregnancy (PEP)
- Eosinophilic spongiosis, papillary dermal edema, and mixed perivascular infiltrate at the basement membrane
- Linear deposition of C3 in 100% cases ± IgG₁ (25%) on DIF
- BP180 antibody serum immunoassay available
Herpes (Pemphigoid) Gestationis

- Progesterone suppresses antibody production, most patients improve the few weeks before delivery when levels are high and flare in the postpartum and premenstrual periods.
- Increased risk for SGA infants and preterm delivery due to antibodies attacking placental tissue, neonatal PG occurs in 3-5% and is typically more mild.
- Recurs and more severe in subsequent pregnancies.
- Topical or systemic steroids, increasing dose after 3 days if vesicles continue to develop.
- Plasmapheresis in recalcitrant cases.
Polymorphic Eruption of Pregnancy (PEP)

- Pruritic urticarial papules and plaques of pregnancy (PUPP)
- Most common pregnancy dermatosis
  - 1 in 160 pregnancies
- 75% occur late in 3rd trimester (36-39 weeks)
- 57.6% cases occur in primagravidae, increased incidence in multibirths and high maternal weight gain
- Start as pruritic urticarial papules in abdominal stretch marks with periumbilical sparing
- 51% go on to develop polymorphous lesions—vesicles, targetoid or polycyclic wheals
- In 70% eruption becomes confluent and widespread, usually spares the face
- Koebnerization is common
Polymorphic Eruption of Pregnancy (PEP)

- Rapid abdominal wall distention leads to connective tissue damage, eliciting allergic-type reaction
- No specific HLAs and no circulating autoantibodies have been identified
- Superficial and mid-dermal lymphohistiocytic infiltrate with spongiosis and papillary dermal edema with eosinophils
  - DIF negative

Introduction

Physiologic changes

Atopic eruption

Herpes gestationis

PEP

Intrahepatic cholestasis

Impetigo herpetiformis

Conclusions
Polymorphic Eruption of Pregnancy (PEP)

- Mean duration of 4-6 weeks, usually not severe for more than 1 week
- Normal fetal prognosis, however, 1 study found increase incidence of cesarean section (40% of cases)
- 15% cases present postpartum, no impact on presentation, disease course, or obstetric findings
- Does not occur in subsequent pregnancies
- Menthol or urea-containing emollients and mid-potency topical steroids for mild cases. Oral prednisolone x7-14 days in severe cases.
- Biopsy for DIF to rule out Herpes gestationis
Intrahepatic Cholestasis of Pregnancy

- Multifactorial – genetic and hormonal factors play a role
  - More common in South American and Scandinavian patients (prevalence of 0.5-1.5%)
    - 50% have + family history
  - Mild malfunction of hepatic canalicular transport
  - Metabolites of progesterone and estrogen (17β-estradiol glucuronide) effect bile acid secretion

- Presents in latter half of pregnancy
  - Intense pruritus with no primary lesions
  - Begins as itching of palms and soles and is localized to the extremities
  - Pruritus worse at night
Intrahepatic Cholestasis of Pregnancy

- Skin findings range in severity from excoriations to prurigo nodules and secondary infection.
- Jaundice seen in only 10%.
- **Total serum bile acids > 11.0μmol/L**, more sensitive than liver function test or bilirubin.
Intrahepatic Cholestasis of Pregnancy

- Significant **fetal risk**, correlated to disease severity and causes placental anoxia and fetal cardiomyocyte dysfunction.
  - Premature birth (19-60%)
  - Intrapartum fetal distress (22-33%)
  - Stillbirth (1-2%)—majority of intrauterine deaths occur after 37 weeks
- Fetal monitoring especially after 34 weeks and elective delivery at 37 weeks
- Ursodeoxycholic acid (15mg/kg/d) corrects maternal bile acid by stimulating excretion of bile acids
Impetigo Herpetiformis

- Pustular psoriasis of pregnancy
- Rare, occurs in 3rd trimester in women ± history of psoriasis
- Has been associated with hypoparathyroidism/hypocalcemia, which may incite flare
- Acutely inflamed skin erupts with superficial sterile pustules in skin folds, spreading centrifugally on trunk and periumbilical skin
- May involve mucosa
- Constitutional symptoms
- Risk of cardiac and renal failure
Impetigo Herpetiformis

- Dermatologic emergency—prompt diagnosis key
  - Characteristic features of pustular psoriasis on H&E
- Placental insufficiency leads to fetal abnormalities, stillbirth, and neonatal death
- Treat with systemic corticosteroids with slow taper to avoid flare
  - Topical treatment alone is ineffective
  - Cyclosporine in refractory cases
- Typically, there is abrupt resolution after delivery
- Recurs with subsequent pregnancy with earlier onset and higher severity
Resources

- Calonje E, McKee’s Pathology of the Skin, With Clinical Correlations. Saunders; 2012.

Introduction

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Conclusions
Thanks!