Review Article

Common Oral and dermatologic Lesions Associated with Pregnancy: A Narrative Review

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Abstract

Pregnancy is associated with major endocrine, vascular, metabolic, and immunologic shifts that influence the skin and oral mucosa in clinically important ways. These changes may manifest as benign physiological lesions, worsening or improvement of pre-existing disease, or pregnancy-specific disorders that require recognition because of maternal discomfort or possible fetal risk. The most frequent cutaneous findings include hyperpigmentation, melasma, striae gravidarum, vascular alterations, acne, and hair or nail changes, whereas the principal pregnancy-specific dermatoses include polymorphic eruption of pregnancy, pemphigoid gestationis, atopic eruption of pregnancy, and intrahepatic cholestasis of pregnancy. Oral lesions are also common and include pregnancy gingivitis, gingival enlargement, pyogenic granuloma, candidiasis, caries, and a range of oral mucosal lesions documented in systematic reviews and population-based studies. Most lesions are benign and self-limited, but some require prompt diagnosis and multidisciplinary management. This narrative review summarizes the classification, pathogenesis, clinical presentation, differential diagnosis, and management of common lesions associated with pregnancy.

Keywords : pregnancy, dermatoses, oral lesions, gingivitis, pyogenic granuloma, melasma, intrahepatic cholestasis of pregnancy

Introduction

Pregnancy is a dynamic physiologic state marked by progressive hormonal shifts, altered immune balance, hemodynamic adaptation, and connective tissue remodeling. These changes affect the skin and oral cavity so consistently that visible lesions are encountered across obstetrics, dermatology, family medicine, and dental practice. For clinicians, the central challenge is not simply recognizing that lesions are common in pregnancy, but distinguishing harmless gestational changes from disorders that require treatment, surveillance, or referral. Current literature generally groups pregnancy-associated cutaneous findings into three broad categories: physiological changes, pre-existing dermatoses modified by pregnancy, and pregnancy-specific dermatoses. This framework is useful because it reflects both pathobiology and clinical decision-making. Benign changes such as hyperpigmentation or striae often require reassurance alone, whereas cholestatic pruritus or autoimmune blistering disease warrants more urgent evaluation. A similar principle applies to oral disease, in which plaque-amplified inflammation may be benign and reversible, but large vascular lesions or persistent mucosal abnormalities demand more careful assessment[1-5].

Oral manifestations deserve special attention in any review of pregnancy-associated lesions. Systematic review evidence indicates that oral mucosal disorders are present in a substantial minority of pregnant women, while population-based studies suggest that the burden may be even higher when clinically subtle lesions are actively screened for. Gingival hyperplasia, pyogenic granuloma, candidiasis, and pigmented lesions are particularly relevant because they can be mistaken for infection, neoplasia, or poor hygiene alone. This review therefore integrates both cutaneous and oral lesions to provide a comprehensive manuscript-ready narrative relevant to multidisciplinary clinical practice[6-10].

Classification of lesions in pregnancy

A practical classification divides lesions associated with pregnancy into physiological changes, pregnancy-specific disorders, pre-existing diseases altered by gestation, and oral lesions influenced by hormonal and inflammatory shifts. Physiological changes are by far the most common and affect the majority of pregnant women, especially in the second and third trimesters. These include pigmentary, vascular, connective tissue, adnexal, and mucosal alterations that usually regress partially or fully after delivery[1-5].

Pregnancy-specific dermatoses form a smaller but clinically important subgroup because they often present with pruritus and may create concern for maternal or fetal risk. The current core entities are polymorphic eruption of pregnancy, pemphigoid gestationis, atopic eruption of pregnancy, and intrahepatic cholestasis of pregnancy, although older classifications additionally separated prurigo of pregnancy and pruritic folliculitis of pregnancy. Meanwhile, diseases such as acne, psoriasis, and superficial fungal infection may

worsen or improve unpredictably under pregnancy-related hormonal and immune influences[1-5,11].

Oral lesions do not always fit neatly within standard dermatologic classification, yet they are common enough to merit a parallel category in clinical reviews. Their development reflects the interaction of hormonal changes, vascular fragility, plaque biofilm, mechanical irritation, nausea-related oral hygiene disruption, and altered dietary patterns. From a manuscript perspective, this broader classification is useful because it frames pregnancy-associated lesions as a multisystem mucocutaneous spectrum rather than a purely dermatologic topic[6-10,12].

Physiological cutaneous lesions

Pigmentary lesions

Hyperpigmentation is one of the most common cutaneous findings in pregnancy and affects a large proportion of women, especially those with darker baseline skin phototypes. Clinically, it presents as generalized accentuation of pigmentation or more localized changes such as linea nigra, darkening of the areolae, pigmentation of the genital region, and increased prominence of pre-existing scars or nevi. Melasma, characterized by symmetric brown facial patches over the cheeks, forehead, upper lip, and nose, is a particularly visible and psychologically relevant manifestation[1-5].

The pathogenesis of pigmentary change is linked to increased melanocyte stimulation driven by estrogen, progesterone, and melanocyte-stimulating pathways. Sun exposure often worsens melasma, which explains why photoprotection remains a core preventive recommendation. Although some pigmentary lesions fade postpartum, melasma may persist, and recurrence in future pregnancies or with hormonal exposure is common[1,2,5].

Connective tissue lesions

Striae gravidarum are among the most familiar lesions of pregnancy and usually appear on the abdomen, breasts, buttocks, hips, and thighs. Their development reflects a combination of mechanical stretching, genetic predisposition, connective tissue remodeling, and hormonal influence on dermal elastic fibers. Early striae are often erythematous or violaceous and later evolve into pale atrophic bands. Although medically benign, they are a common source of cosmetic concern and can affect quality of life[1-5].

Skin tags and soft fibromas may also increase during pregnancy, likely because of hormonal stimulation and friction in intertriginous areas. They are usually small, asymptomatic, and require no intervention unless irritated. These lesions are often underreported in formal studies because they are viewed as incidental, yet they represent another example of the heightened proliferative and vascular responsiveness of skin in pregnancy[2,4,5].

Vascular lesions

Pregnancy promotes marked vascular change, which may manifest as palmar erythema, spider angiomas, venous prominence, varicosities, hemorrhoids, and edema. These changes result from increased circulating blood volume, venous pressure, and estrogen-mediated vasodilation. Spider angiomas are most often seen on the face, neck, upper trunk, and arms, while varicosities are common in the lower limbs and vulvar region[2,4,5].

Although most vascular lesions are benign, they may produce discomfort or cosmetic distress. In practice, vascular changes should still be interpreted in clinical context because edema, purpura, or marked vascular fragility can occasionally prompt consideration of hypertensive disease or coagulopathy rather than simple gestational change[3,5]. Thus, the lesion itself may be physiological, but the overall maternal assessment remains important.

Hair and nail changes

Hair growth may appear fuller during pregnancy because of a prolonged anagen phase, followed by postpartum telogen effluvium when follicular cycling returns toward baseline. Nail changes include brittleness, ridging, distal onycholysis, and transverse grooves, though these are less systematically documented than pigmentary or vascular lesions. These adnexal findings are seldom dangerous, but they are relevant to patient counseling because many patients worry they represent nutritional deficiency or disease[1,2].

Pregnancy-specific dermatoses

Polymorphic eruption of pregnancy

Polymorphic eruption of pregnancy, historically termed pruritic urticarial papules and plaques of pregnancy, is widely described as the most common pregnancy-specific dermatosis. It usually arises in primigravid women late in the third trimester or immediately postpartum and classically begins within abdominal striae. Lesions are intensely pruritic and may appear as erythematous papules, urticarial plaques, targetoid lesions, or vesicular variants. The periumbilical region is often spared, a useful feature that helps distinguish it from pemphigoid gestationis[1,3,4,11].

The exact pathogenesis remains uncertain, but abdominal overdistension, connective tissue damage within striae, and inflammatory response to mechanical stress are plausible mechanisms. Maternal prognosis is excellent, and fetal risk is generally not increased. Treatment is symptomatic, usually with emollients, topical corticosteroids, and antihistamines when needed[1,3,4,11].

Pemphigoid gestationis

Pemphigoid gestationis is a rare autoimmune subepidermal blistering disorder associated with pregnancy. It often starts with severe pruritus and urticarial papules or plaques, typically involving the periumbilical area, before progressing in some patients to tense vesicles and bullae. Histopathology and direct immunofluorescence support diagnosis in atypical or blistering presentations[3,4,11].

This disorder is clinically important because maternal symptoms can be severe and fetal complications including prematurity and lower birth weight have been reported. Recurrence in future pregnancies is common, and flares can occur around delivery or with hormonal exposure. Treatment ranges from topical corticosteroids in mild disease to systemic corticosteroids in more severe cases, ideally coordinated between dermatology and obstetrics[3,4,11].

Atopic eruption of pregnancy

Atopic eruption of pregnancy is an umbrella term that encompasses eczematous and papular lesions occurring in women with a personal or family history of atopy or with de novo atopic-type disease during pregnancy. It often presents earlier than polymorphic eruption of pregnancy and may manifest as flexural eczema, diffuse dry itchy skin, excoriated papules, or prurigo-like lesions. This category was proposed to unify several historically separate pruritic conditions with overlapping features[4,11].

The main clinical significance of atopic eruption is maternal discomfort and sleep disturbance rather than fetal risk. Management emphasizes emollients, avoidance of irritants, and pregnancy-compatible anti-inflammatory therapy when needed. Because atopic dermatitis is common outside pregnancy, clinicians must distinguish worsening chronic eczema from pregnancy-triggered onset within the same immunologic spectrum[4,11,13].

Intrahepatic cholestasis of pregnancy

Intrahepatic cholestasis of pregnancy differs from the other specific dermatoses because its dominant symptom is pruritus without a primary inflammatory rash. It typically presents in the late second or third trimester with itching of the palms and soles that may become generalized and worse at night. Secondary excoriations are common because of scratching, but primary papules or plaques are absent[3,11].

This condition is especially important because of its association with adverse fetal outcomes, including preterm birth and stillbirth risk in severe disease. Diagnosis depends on clinical suspicion supported by serum bile acid measurement and liver-related investigations. For that reason, pruritus in pregnancy should never be dismissed as a benign complaint without considering cholestasis, especially when no primary rash is found[3,11].

Pre-existing dermatoses modified by pregnancy

Pregnancy may alter the course of many pre-existing skin disorders, and the direction of change is not always predictable. Acne may worsen because of hormonal stimulation of sebaceous glands, while chronic atopic dermatitis may flare in predisposed women. Psoriasis may improve in some patients and worsen in others, reflecting the complexity of pregnancy-related immune modulation[1,2,13].

Superficial fungal infections and other common dermatoses may become more clinically apparent during pregnancy because of changes in immunity, sweat, occlusion, and skin barrier behavior. These conditions are not unique to pregnancy, but they enter the differential diagnosis whenever a pregnant patient presents with an eruption. This distinction matters because treatment choice must account for fetal safety, and not every rash in pregnancy should be labeled a pregnancy-specific dermatosis[1,4,13].

Cutaneous tumors and vascular proliferations may also change during gestation. Pre-existing nevi can darken, and vascular lesions may appear more prominent because of circulatory and hormonal factors. Careful documentation is prudent when lesion morphology changes significantly, especially if asymmetry, irregular pigmentation, or rapid growth creates concern unrelated to pregnancy physiology[2,5].

Oral lesions associated with pregnancy

Pregnancy gingivitis and gingival enlargement

Pregnancy gingivitis is among the most frequently reported oral lesions in pregnant women. It is characterized by erythema, edema, tenderness, and bleeding on brushing, most often in the setting of plaque accumulation. Hormonal change does not directly create plaque, but it amplifies the gingival inflammatory response to existing plaque biofilm, making even modest deposits clinically significant[6,7,10,12].

Gingival enlargement or hyperplasia may accompany gingivitis and can range from mild marginal swelling to more diffuse overgrowth. The systematic review and meta-analysis of oral mucosal disorders during pregnancy identified gingival hyperplasia as the most prevalent lesion among the pooled studies. In clinical terms, this is important because patients and non-dental clinicians may mistake inflammatory enlargement for infection or tumor. Management depends primarily on oral hygiene reinforcement and professional periodontal care[7,12].

Pyogenic granuloma of pregnancy

Pyogenic granuloma, also called pregnancy tumor or granuloma gravidarum, is a benign reactive vascular lesion that typically develops on the gingiva. The term is a misnomer because the lesion is neither pyogenic nor

granulomatous histologically. Clinically, it appears as a red to reddish-purple exophytic mass that bleeds easily and may ulcerate with minor trauma[8,14,15].

The lesion is thought to arise from local irritation, plaque, or trauma in a hormonally primed mucosal environment. Although many lesions regress postpartum, some persist or recur, particularly when local irritants remain. Excision is indicated when there is recurrent bleeding, interference with mastication, concern about diagnosis, or failure to regress after delivery[8,14,15].

Other oral mucosal lesions

Systematic review data indicate that oral candidiasis, benign migratory glossitis, and other oral mucosal lesions occur during pregnancy, although prevalence estimates vary across study designs and populations. In a population-based study, oral mucosal lesions were found in 16.5% of pregnant women, and common findings included exostosis, coated tongue, and benign oral brownish pigmentation. These observations broaden the concept of pregnancy-related oral lesions beyond gingivitis and pyogenic granuloma alone[6,7,9].

Dental caries and periodontitis are also frequently discussed in pregnancy-related oral health reviews. Contributing factors include altered eating habits, increased snacking, vomiting-related acid exposure, reduced oral hygiene during nausea, and delayed dental attendance. While caries and periodontitis are not unique pregnancy lesions, they form part of the broader oral disease burden associated with gestation and influence both symptoms and care needs[6,10,12].

Pathogenesis

The pathogenesis of lesions associated with pregnancy is multifactorial and best understood as the cumulative effect of hormonal, vascular, immunologic, mechanical, and behavioral change. Estrogen and progesterone alter melanogenesis, vasodilation, connective tissue turnover, sebaceous activity, and inflammatory thresholds. These mechanisms explain why pigmentation increases, striae form, and vascular lesions become more visible during pregnancy[2,5].

Immune modulation also contributes importantly. Pregnancy shifts inflammatory signaling in ways that may unmask, ameliorate, or worsen skin disease depending on the underlying disorder. Autoimmunity is central to pemphigoid gestationis, while atopic eruption appears to reflect a pregnancy-associated predisposition toward eczematous or pruritic inflammatory responses in susceptible individuals. Intrahepatic cholestasis of pregnancy, by contrast, arises from impaired bile acid handling rather than primary cutaneous inflammation[4,11,13].

For oral lesions, hormonal influences increase gingival vascularity and enhance tissue reactivity to plaque biofilm. This lowers the threshold for clinically apparent gingivitis and enlargement. Pyogenic granuloma represents a particularly vivid example of a reactive lesion amplified by a gestational hormonal milieu. The pathogenesis of pregnancy-associated oral pigmentation and coated tongue is less fully defined, but available observational data confirm that such lesions are encountered in antenatal populations[7-10,12].

Clinical evaluation and differential diagnosis

Evaluation begins with a focused history that includes gestational age, lesion onset, evolution, symptoms, prior history of similar lesions, medication exposure, atopic background, and associated systemic features such as jaundice or pruritus without rash. In skin disease, morphology and distribution remain central. Abdominal plaques arising within striae late in pregnancy suggest polymorphic eruption, whereas periumbilical involvement or blister formation raises concern for pemphigoid gestationis. Severe itch without primary lesions should immediately trigger consideration of cholestasis[3,4,11].

Differential diagnosis for gestational skin lesions includes urticaria, atopic dermatitis, scabies, drug eruptions, viral exanthems, contact dermatitis, pustular psoriasis, and autoimmune blistering disease unrelated to pregnancy. Appropriate laboratory testing or skin biopsy may be required when features are atypical or severe. For oral lesions, gingival enlargement must be distinguished from periodontal abscess, fibroma, peripheral giant cell granuloma, and other reactive or neoplastic growths. Persistent pigmented lesions or unexplained ulceration should not automatically be attributed to pregnancy[4,8,11,15].

Management principles

Management depends on whether the lesion is benign and self-limited or associated with significant symptoms or fetal risk. Physiological changes such as melasma, linea nigra, and mild striae usually require explanation and reassurance rather than active treatment. Photoprotection is appropriate for melasma, while overly aggressive cosmetic intervention is generally avoided during pregnancy[1,5].

For pruritic dermatoses, emollients and topical corticosteroids are commonly used first-line options, with antihistamines considered in selected patients for symptomatic relief. Systemic therapy is reserved for more severe disease such as extensive pemphigoid gestationis or refractory inflammatory eruptions. Suspected cholestasis requires obstetric-directed evaluation and management rather than symptomatic treatment alone because maternal itch may be the earliest sign of a disorder with fetal implications[3,11,13].

Oral lesion management begins with plaque control, dietary counseling, brushing and flossing instruction, and timely dental review. Pregnancy gingivitis and inflammatory enlargement often improve with professional cleaning and better oral hygiene. Pyogenic granuloma can be observed when small and minimally symptomatic, but persistent bleeding, ulceration, discomfort, or diagnostic uncertainty justify excision. Importantly, needed dental care should not be postponed solely because the patient is pregnant[8,10,12,14].

Maternal and fetal implications

Most physiological lesions associated with pregnancy are benign and primarily affect comfort or appearance rather than obstetric outcome. Nevertheless, the psychosocial burden may be substantial, particularly in visible lesions such as melasma or rapidly enlarging oral masses. Persistent pruritus also has meaningful consequences for sleep, mood, and quality of life[1,3,5].

Among the pregnancy-specific dermatoses, intrahepatic cholestasis of pregnancy and pemphigoid gestationis are the entities with greatest concern for fetal implications in routine practice. This distinction underscores why broad reassurance is not enough when severe itching or blistering is present. Oral lesions are less often linked directly to fetal outcomes, but they can impair nutrition, oral intake, or quality of life and may coexist with poor oral hygiene and untreated dental disease that complicate antenatal care[3,6,10,11].

Summary

The literature supports a broad view of pregnancy-associated lesions as a mucocutaneous spectrum rather than a narrow dermatologic list. Benign skin changes affect most pregnant women, yet the same clinical setting may also reveal autoimmune, inflammatory, hepatic, or reactive vascular disease. This overlap explains why lesion-based classification remains useful: it links visual diagnosis to prognosis and management. In practical terms, the clinician's task is to identify which lesions require only counseling, which warrant treatment for symptom control, and which demand urgent obstetric or specialist involvement[1,4,6,11].

The oral literature is especially valuable because it shows that pregnancy-related lesions are not confined to the skin. Systematic reviews now document measurable prevalence of oral mucosal disorders in pregnant populations, with gingival hyperplasia, pyogenic granuloma, candidiasis, and benign pigmentary changes recurring across datasets. These data strengthen the case for integrating oral examination into routine pregnancy care, particularly in multidisciplinary settings. For manuscript authors and reviewers, this integrated perspective is also important because it prevents underrepresentation of oral disease in reviews of pregnancy-associated lesions[6,7,9].

The evidence base has limitations. Many prevalence data derive from observational studies with heterogeneous definitions, while classification systems for pregnancy-specific dermatoses have evolved over time. Even so, the major clinical messages are consistent across reviews: physiological changes are common, pruritic pregnancy-specific dermatoses must be differentiated carefully, and oral inflammatory lesions are frequent enough to deserve routine attention[4,7,11].

Conclusion

Lesions associated with pregnancy encompass a wide range of cutaneous and oral findings produced by the physiologic and pathologic effects of gestation. The commonest lesions are benign physiological changes such as hyperpigmentation, striae gravidarum, vascular lesions, and adnexal alterations, but clinicians must also recognize pregnancy-specific dermatoses including polymorphic eruption of pregnancy, pemphigoid gestationis, atopic eruption of pregnancy, and intrahepatic cholestasis of pregnancy. In the oral cavity, pregnancy gingivitis, gingival enlargement, pyogenic granuloma, candidiasis, and other mucosal lesions are well documented and clinically relevant. Accurate diagnosis depends on integrating lesion morphology, timing, symptoms, and risk context. A multidisciplinary approach involving obstetrics, dermatology, and dentistry improves reassurance, symptom control, and detection of lesions that carry maternal or fetal significance.

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