

LEUKOPLAKIA: SYMPTOMS, DIAGNOSIS AND PREVENTION

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Abstract: Leukoplakia is a chronic pathological condition characterized by abnormal keratinization of epithelial tissues, primarily affecting mucous membranes. It is considered a potentially premalignant disorder with variable clinical presentation and risk of malignant transformation. This article reviews the current understanding of leukoplakia with a focus on its clinical symptoms, diagnostic approaches, and preventive strategies. Emphasis is placed on early detection and risk factor modification to reduce progression and recurrence.

Keywords: leukoplakia, keratinization, precancerous lesions, diagnosis, prevention, oral mucosa

Introduction

Leukoplakia is defined as a white plaque or patch on mucous membranes that cannot be clinically or histologically characterized as any other disease. Despite extensive research, its exact etiology remains unclear. The condition is associated with a combination of endogenous and exogenous factors, including immune dysfunction, hormonal imbalance, chronic irritation, and harmful habits such as tobacco and alcohol use. Due to its potential for malignant transformation, leukoplakia remains a significant concern in clinical practice.

Clinical Symptoms of Leukoplakia

The clinical manifestations of leukoplakia vary depending on its form, localization, and stage of progression.

1. General Features

In early stages, leukoplakia is often asymptomatic and may be detected incidentally during routine examination. As the disease progresses, patients may experience:

- Sensation of dryness and tightness in affected areas
- Rough or thickened mucosal surfaces
- White or grayish plaques resistant to mechanical removal

2. Oral Leukoplakia

This is the most common form, frequently affecting the tongue, buccal mucosa, and lips. Symptoms include:

- White plaques with clear borders
- Mild discomfort or burning sensation
- Occasional swelling and epithelial thickening
- In advanced cases: cracks, erosions, and ulcerations

3. Verrucous and Erosive Forms

- **Verrucous leukoplakia:** characterized by raised, wart-like lesions and pronounced hyperkeratosis, often accompanied by pain during chewing or swallowing.
- **Erosive leukoplakia:** presents with ulcers and erosions, associated with significant pain and a higher risk of malignant transformation (up to 20% or more).

4. Leukoplakia of the Respiratory and Digestive Tracts

Common symptoms include:

- Chronic irritation of mucosa
- Pain during swallowing
- Increased risk of late detection due to subtle early signs

5. Urogenital Leukoplakia

Symptoms may include:

- Itching and burning sensations
- Pain during urination or sexual activity
- Formation of white patches on genital mucosa
- In advanced stages: erosions and ulcerative lesions

Diagnosis of Leukoplakia

Accurate diagnosis of leukoplakia requires a комплексный (comprehensive) approach combining clinical, лабораторные (laboratory), and instrumental methods.

1. Clinical Examination

Initial evaluation includes visual inspection and assessment of lesion characteristics such as size, shape, color, and surface texture.

2. Cytological Analysis

Used to detect cellular atypia and identify early признаки (signs) of malignant transformation.

3. Biopsy and Histological Examination

Targeted biopsy remains the gold standard for diagnosis. It allows:

- Assessment of epithelial dysplasia
- Differentiation from malignant lesions
- Evaluation of keratinization patterns

4. Special Diagnostic Tests

- **Schiller test:** iodine staining to delineate affected areas
- **Colposcopy:** for genital localization
- **Laryngoscopy:** for laryngeal involvement
- **Immunological studies:** assessment of immune status

- **Ultrasound imaging:** evaluation of associated organ pathology

5. Differential Diagnosis

Leukoplakia must be differentiated from:

- Squamous cell carcinoma
- Oral candidiasis
- Lichen planus
- Secondary syphilis
- Bowen's disease

Prevention of Leukoplakia

Preventive strategies are essential due to the chronic nature and recurrence risk of leukoplakia.

1. Elimination of Risk Factors

- Smoking cessation
- Avoidance of alcohol consumption
- Reduction of exposure to chemical and thermal irritants
- Correction of mechanical trauma (e.g., dental issues)

2. Lifestyle and Nutritional Modifications

- Balanced diet rich in vitamins, especially vitamin A
- Maintenance of adequate hydration
- Avoidance of excessively hot or irritating foods

3. Strengthening Immune Function

- Regular physical activity
- Timely treatment of infectious and systemic diseases
- Monitoring of hormonal balance

4. Regular Medical Screening

Annual examinations by specialists such as:

- Dentists
- Gynecologists
- Urologists

Early detection significantly reduces the risk of malignant transformation.

5. Monitoring and Follow-up

Patients diagnosed with leukoplakia require long-term observation to:

- Track lesion progression

- Detect early signs of malignancy
- Prevent recurrence after treatment

Conclusion

Leukoplakia is a multifactorial disease with significant clinical importance due to its potential for malignant transformation. Early recognition of symptoms, accurate diagnosis through histopathological evaluation, and effective preventive strategies are essential for successful management. A multidisciplinary approach and patient adherence to lifestyle modifications play a crucial role in reducing disease burden and improving prognosis.

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