

Hyperpigmentation: Initial Sign of Addison's Disease

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Case presentation

A 24-year-old woman presented with hyperpigmentation at frictional sites including hands (Fig. 1A), feet, gingiva, and tongue (Fig. 1B) for two years.

Key clinical findings

The patient complained of fatigue, irritability, and poor appetite, with no abdominal pain, nausea, or vomiting. She denied a history of tuberculosis contact or autoimmune diseases. Being unmarried, she had regular menstruation. Her blood pressure was 100/70 mmHg, and she had

a 2.5 kg weight loss in the past 6 months. Laboratory investigation revealed decreased morning cortisol level (1.71 $\mu\text{g/dL}$, normal from 4.20 $\mu\text{g/dL}$ to 22.30 $\mu\text{g/dL}$) and increased adrenocorticotropic hormone (ACTH) (1286.7 pg/mL , normal from 5.1 to 32.0 pg/mL). T-cell enzyme-linked immunospot assay for tuberculosis (T-SPOT.TB) test showed positive results. Computed tomography (CT) scan showed adrenal calcification (Fig. 1C).

Final diagnosis

Taken together, the patient was diagnosed with Addison's

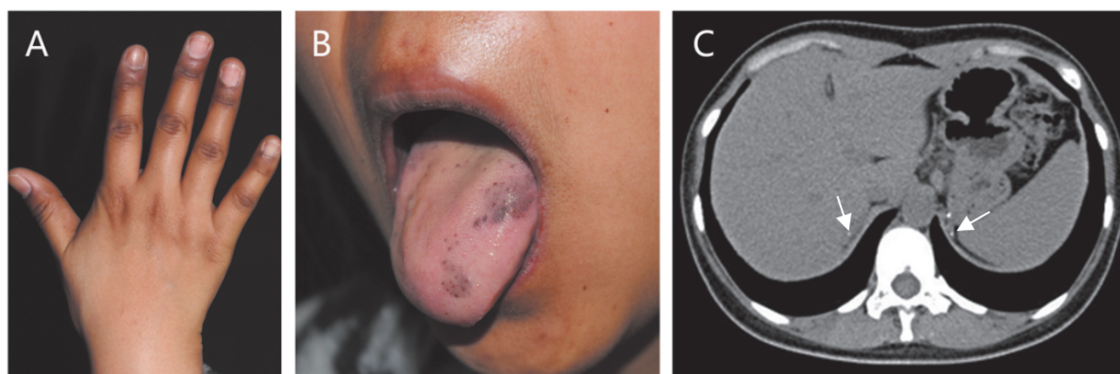


Figure 1: Addison's disease.

(A) Hyperpigmentation on overpressured areas of the hands. (B) Hyperpigmentation on the tongue. (C) Abdominal computed tomography (CT) showing adrenal calcification.

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disease and adrenal tuberculosis based on clinical symptoms, adrenocortical hormone assay, T-SPOT.*TB* test, and adrenal CT examination.

Teaching points

Addison's disease, also known as primary adrenal insufficiency, is a rare endocrinal disorder commonly caused by autoimmunity and tuberculosis. It is characterized by generalized hyperpigmentation (especially in overpressured areas) and symptoms of fatigue, weight loss, nausea, vomiting, etc. Some patients can develop adrenal crisis. The patient received prednisone acetate and quadruple anti-TB therapy (rifampicin, isoniazid, pyrazinamide, and ethambutol). After hospitalization, the patient's fatigue and irritability were markedly alleviated, and her appetite improved as well. Following 6 months of treatment, pigmentation on the hands, feet, gingiva, and tongue subsided significantly. Serum cortisol and ACTH levels returned to normal limits. No adrenal crisis was observed during the entire treatment period. The patient is currently under follow-up.

Addison's disease typically presents with hyperpigmentation on friction and pressure sites including the hands, feet, gingiva, and tongue, accompanied by fatigue, weight loss, poor appetite, irritability, etc. Adrenal crisis may occur without timely diagnosis and treatment.

Author contributions

Yu Liu drafted the manuscript and Chunying Li provided critical revision of the report. Both authors reviewed and approved the final version of the manuscript and agreed to its publication.

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Ethics statement

Ethical approval was not required for this single-case report per the institutional review board (IRB) guidelines of Xijing Hospital of Fourth Military Medical University, as no experimental interventions were performed and only de-identified patient data were used. This study was conducted in accordance with the Declaration of Helsinki.

Patient consent statement

Written informed consent was obtained from the patient for the publication of this case report and accompanying images.

Data availability statement

No datasets were generated or analyzed for this work.

AI statement

The authors used online version Doubao, as a language-editing tool to improve grammar, clarity, and readability. The AI tool was not used for data analysis, data generation, image processing, or scientific content creation. All outputs were carefully reviewed and verified by the authors, who take full responsibility for the final content.

Conflicts of interest

Chunying Li serves as a member of the editorial board of this journal. She was not involved in the editorial review or decision-making process for this manuscript. All editorial decisions were made independently by other members of the editorial board who have no conflicts of interest.