Psoriasis Associated with Hypoparathyroidism in a 14-Year-Old Female

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Background

Hypoparathyroidism is a rare endocrine disorder characterized by hypocalcemia due to deficient parathyroid hormone (PTH) secretion. Its association with psoriasis is exceptionally uncommon, particularly in pediatric patients. This case highlights a unique presentation where both conditions coexist, suggesting potential pathophysiological links between calcium homeostasis and inflammatory skin disorders.

Case Presentation

A 14-year-old female from Giza, Egypt, presented with a two-month history of extensive psoriasis characterized by generalized diffuse erythematous, itchy, scaly skin plaques with oozing crusts.

Initial dermatological treatment with intramuscular betamethasone, Acitretin (25 mg BID), and topical agents proved ineffective despite biopsy confirmation of psoriasis. Subsequently, she developed recurrent carpopedal spasm, facial twitches, and generalized tonic-clonic seizures with post-ictal confusion.

Physical examination revealed a fully conscious but depressed patient with growth retardation (weight: 30 kg, height: 140 cm, BMI: 15 kg/m² - all <3rd percentile). Distinctive features included long facies, micrognathia, abnormal ear folding, and enamel hypoplasia.

Positive Trousseau and Chvostek's signs were noted. Laboratory investigations demonstrated severe hypocalcemia (serum Ca: 3.9 mg/ dL), hyperphosphatemia (8 mg/dL), low PTH (11.9 pg/mL), and vitamin D deficiency (12 ng/mL). Brain CT revealed bilateral basal ganglia calcifications.

Management and outcomes

Treatment focused on correcting electrolyte imbalances with IV calcium gluconate, magnesium sulfate, oral calcium carbonate, alfacalcidol (titrated to 3 mcg daily), and vitamin D supplementation. Seizures were managed with levetiracetam, which was discontinued after stabilization. For psoriasis, cyclosporine was initiated per dermatology consultation.

The patient showed significant improvement with normalization of serum calcium (from 3.9 to 9.5 mg/dL), magnesium (to 1.7 mg/dL), and phosphorus (from 8 to 4.5 mg/dL). Inflammatory markers decreased substantially, and her skin condition stabilized.

Discussion

This case illustrates the rare association between hypoparathyroidism and psoriasis, suggesting that hypocalcemia may exacerbate inflammatory skin conditions. Primary hypoparathyroidism was diagnosed based on low PTH levels, severe hypocalcemia, hyperphosphatemia, and basal ganglia calcifications. The absence of autoimmune

markers and cardiac anomalies made DiGeorge syndrome and autoimmune etiologies less likely.

Recent literature supports the relationship between calcium homeostasis and psoriasis severity. Sheth & Alsayed (2023) described a similar case where calcium supplementation improved cutaneous manifestations, indicating that correction of Hypocalcemia may be an important adjunctive therapy for refractory psoriasis.

Conclusion

This case highlights the importance of considering metabolic disorders, particularly hypocalcemia, in patients with treatment-resistant psoriasis. The coexistence of hypoparathyroidism and psoriasis may represent an underrecognized association with potential therapeutic implications. Clinicians should maintain a high index of suspicion for hypocalcemia in patients with severe or refractory psoriasis, especially when accompanied by neurological symptoms.

Keywords

Hypoparathyroidism, Psoriasis, Hypocalcemia, Basal ganglia calcification