



Pediatric Psoriasis Associated with Van Wyk Grumbach Syndrome: A case report

Psoriasis pédiatrique et syndrome de Van Wyk Grumbach: A propos d'un cas

Asma Marzouk¹, Rania Mezzi¹, Saad Ayeb¹, Nour Jelaila¹, Saida Zelfani², Asma Bouaziz¹

1. Pediatrics and Neonatology departement, Yasminette Ben Arous , Tunisia . University El Manar, Faculty of Medecine of Tunis
2. University El Manar , Faculty of Medecine of Tunis

ABSTRACT

Introduction: Psoriasis is a common chronic inflammatory condition, often beginning in childhood in approximately one-third of cases. It can be associated with various other autoimmune diseases such as rheumatoid arthritis, celiac disease, and thyroid disorders. However, its co-occurrence with Van Wyk Grumbach syndrome has not been described in the pediatric population. This syndrome, resulting from untreated hypothyroidism, is characterized by early puberty and ovarian cysts.

Observation: A 15-year-old adolescent with a diagnosis of psoriasis since the age of 9 presented with chronic constipation and headaches. She exhibited early puberty (menarche at 9 years) and academic regression. Clinical examination revealed growth retardation and arterial hypertension. Hormonal analyses revealed primary hypothyroidism : Free Thyroxine (FT4)=7pmol/mL(9- 20 pmol/l), Thyroid Stimulating Hormone (TSH)=200 mIU/mL (0,4 - 5 mUI/ml.). The ultrasound and scintigraphic appearance were suggestive of thyroiditis. Additionally, she experienced menstrual irregularities and pelvic pain. Radiological exploration revealed a left ovarian cyst. The diagnosis of Van Wyk Grumbach syndrome was established due to early puberty, hypothyroidism, and polycystic ovary. Treatment with l-thyroxine led to stabilization of blood pressure and hormonal levels. Her height remained below the target adult height.

Conclusion: Assessment of thyroid function appears necessary in pediatric patients with psoriasis. Early hormonal replacement therapy for hypothyroidism may alleviate the symptoms of Van Wyk Grumbach syndrome and mitigate its impact on stature.

Key words: psoriasis, child, early puberty, hypothyroidism, polycystic ovary.

RÉSUMÉ

Introduction: Le psoriasis est une affection chronique inflammatoire fréquente, débutant dans l'enfance dans près d'un tiers des cas. Il peut s'associer à de nombreuses autres maladies auto-immunes telles que la polyarthrite rhumatoïde, la maladie cœliaque et les maladies de la thyroïde. Son association au syndrome de Van Wyk Grumbach n'a pas été décrite dans la population pédiatrique. Ce syndrome résultant d'une hypothyroïdie non traitée, se caractérise par une puberté précoce associée à des kystes ovariens.

Observation: Une adolescente de 15 ans, souffrant de psoriasis diagnostiqué depuis l'âge de 9 ans, a consulté pour constipation et céphalées chroniques. Elle a présenté une puberté précoce (ménarches à 9 ans) et une régression scolaire. A l'examen clinique, elle avait un retard de croissance et une hypertension artérielle. Les analyses hormonales ont révélé une hypothyroïdie primaire : thyroxine libre (T4L)=7pmol/l (9- 20 pmol/l) et thyroxine stimulante de la thyroïde (TSH)=200mUI/ml (0,4 - 5 mUI/ml.). L'échographie ainsi que la scintigraphie thyroïdienne a objectivé une thyroïdite. Par ailleurs elle avait des troubles menstruels et des douleurs pelviennes. L'exploration radiologique a révélé la présence d'un kyste ovarien gauche. Le diagnostic du syndrome de Van Wyk Grumbach a été posé en raison de la puberté précoce, de l'hypothyroïdie, et de l'ovaire polykystique. Un traitement à base de l-thyroxine a entraîné une stabilisation des chiffres tensionnels et hormonaux. Sa taille est restée inférieure à sa taille cible adulte.

Conclusion: L'évaluation de la fonction thyroïdienne semble être nécessaire chez l'enfant psoriasique. Une thérapie hormonale substitutive précoce de l'hypothyroïdie pourrait atténuer les symptômes du syndrome de Van Wyk Grumbach et réduire ses retentissements staturaux.

Mots clés: Psoriasis, enfant, puberté précoce, hypothyroïdie, kyste ovarien.

Correspondance

Asma Marzouk

Pediatrics and Neonatology departement, Yasminette Ben Arous , Tunisia . University El Manar, Faculty of Medecine of Tunis.

Email: asma.marzouk@fmt.utm.tn

INTRODUCTION

Pediatric psoriasis is a chronic inflammatory skin condition that can significantly impact the well-being of children and their families (1). It is characterized by erythematous and scaly skin lesions often accompanied by pain and itching (2). While psoriasis is primarily known for its dermatological effects, recent evidence suggests intricate connections between this skin disorder and various systemic conditions, including autoimmune diseases (3). One intriguing association is that between pediatric psoriasis and hypothyroidism (4). Van Wyk Grumbach syndrome is a rare condition caused by untreated hypothyroidism (5). Clinically, it presents as a cluster of symptoms including isosexual precocious puberty, statural retardation, and polycystic ovaries (6). This case report highlights the significance of hypothyroidism screening in pediatric psoriasis patients and illustrates the consequences of its oversight.

CASE REPORT

We present the case of a 15-year-old adolescent, followed for psoriasis since the age of 9. Her psoriasis was considered mild according to the Psoriasis Area and Severity Index (PASI) score (7). During the summer of 2021 the patient sought care at the Pediatrics Department of Ben Arous in Tunisia, for chronic constipation unresponsive to symptomatic treatment, along with holocranial headache without neurosensory deficits. Starting from her menarche at the age of 9, she experienced irregular, painful, and variable menstrual cycles, including episodes of menorrhagia. During the physical examination, growth retardation was observed, with measurements at -2 standard deviations from the norm. Hormonal analyses revealed Free Thyroxine (FT4) levels of 7 pmol/l (9- 20 pmol/l) and Thyroid Stimulating Hormone (TSH) levels of 200 mIU/ml. (0,4 - 5 mIU/ml.). Etiological tests indicated the presence of positive antithyroperoxidase antibodies, and imaging studies, including ultrasound and thyroid scintigraphy (Figure 1), demonstrated features consistent with inflammatory thyroiditis.

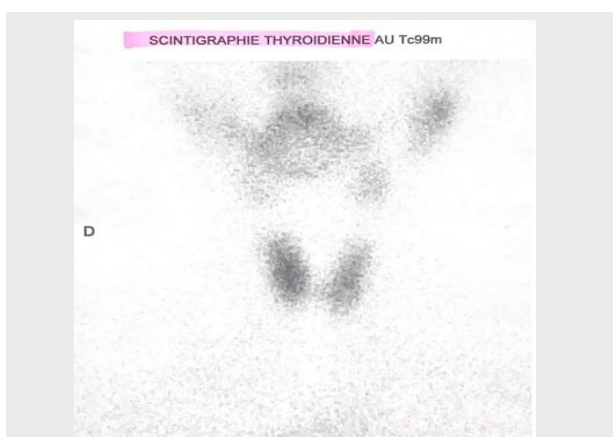


Figure 1. Thyroid appearance on scintigraphy : normally functioning thyroid with slight asymmetry on the right lobe, consistent with thyroiditis lesions.

Disease progression was marked by persistent menstrual cycle disturbances accompanied by pelvic pain. Investigation using pelvic magnetic resonance imaging revealed a cyst on the left ovary, consistent with polycystic ovary (Figure 2).

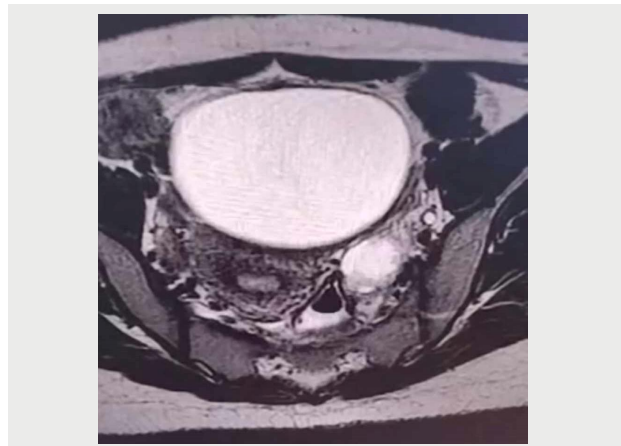


Figure 2. Axial imaging by magnetic resonance of the pelvic region revealing an ovarian cyst (Yellow arrow).

Thus, the diagnosis of Van Wyk Grumbach syndrome was established, considering the coexistence of early puberty, hypothyroidism, growth and weight retardation, and ovarian cyst.

The patient's treatment involved the administration of L-thyroxine at a dosage of 2 µg/kg/day. Over a monitoring period of 16 months, the patient exhibited stabilized blood pressure, hormonal balance, and normalized menstrual cycles. However, despite these improvements, her stature remained below the target and anticipated adult height.

DISCUSSION

A 15-year-old with psoriasis presented growth retardation, hypothyroidism, and ovarian cyst, diagnosed as Van Wyk Grumbach syndrome. L-thyroxine treatment improved hormonal balance but didn't significantly impact her stature.

Pediatric psoriasis is a chronic skin condition often associated with various comorbidities (3). Recent studies have unveiled links between pediatric psoriasis and other autoimmune diseases, such as rheumatoid arthritis, celiac disease, and thyroid disorders (2).

This clinical case underscores the relevance of this association. Van Wyk Grumbach syndrome, resulting from untreated hypothyroidism, is a striking example of the potential consequences of neglecting hypothyroidism screening in pediatric psoriasis patients (4,8). Although rare, this association can have significant repercussions on the growth, puberty, and quality of life of affected children (9).

The association between hypothyroidism and pediatric psoriasis can be elucidated through complex immunological mechanisms (4). Studies suggest that dysregulated immune processes in psoriasis may also impact thyroid gland function (3). Excessive pro-inflammatory cytokines in psoriasis could disrupt thyroid hormone balance, contributing to hypothyroidism development (10). Conversely, hypothyroidism might exacerbate the observed skin inflammation in psoriasis (11). Thyroid hormones play a pivotal role in immune and inflammatory regulation (12). Thyroid hormone deficiency could promote the expression of inflammatory cytokines involved in psoriasis, amplifying the skin's inflammatory response (13).

To prevent complications such as Van Wyk Grumbach syndrome, systematic hypothyroidism screening in pediatric psoriasis patients is essential. By integrating this step into clinical follow-up, early detection of hypothyroidism cases and prompt initiation of appropriate

treatment can be achieved (14). This approach could not only prevent severe hypothyroidism-related symptoms but also enhance overall management of pediatric psoriasis patients by mitigating comorbidity impacts (3).

CONCLUSIONS

Regular thyroid function assessments during the follow-up of pediatric psoriasis patients could swiftly identify potential anomalies and establish appropriate treatment. Adopting a proactive approach in managing these medical associations could contribute to improving the well-being of affected young patients and preventing long-term complications.

Declaration of parent consent:

The authors certify that they have obtained all the parent consent for image and clinical information to be reported in the journal. Parent understands that the name of his child will not be published.

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