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Beyond Size: Navigating the Complexities of Micropenis in a Newborn - A Case Report

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ABSTRACT:

Micropenis is a rare congenital condition characterized by a stretched penile length more than 2.5 standard deviations below the mean for age and sex. This report discusses a rare case of micropenis in a newborn male, detailing the clinical evaluation, diagnosis, and comprehensive management strategies. The patient presented with an abnormally small penis at birth, confirmed through clinical measurements, hormonal assessments, and genetic testing. The management involved initiating endocrine therapy and careful monitoring to address potential underlying causes and associated conditions. This case underscores the importance of early diagnosis and a multidisciplinary approach for optimal outcomes in patients with micropenis.

1. Case Presentation

A newborn male, born at 38 weeks of gestation via vaginal delivery, presented with an abnormally small penis. The birth weight was 3.0 kg, and Apgar scores were 8 and 9 at 1 and 5 minutes, respectively. The newborn was the first child of non-consanguineous parents, with no significant family history of endocrine disorders or genital anomalies. The pregnancy was uneventful, and prenatal ultrasounds were normal.

On physical examination, the infant appeared well and had no dysmorphic features. Genital examination revealed a penile length of 1.0 cm stretched, significantly below the 2.5th percentile for his age. The testes were descended and of normal size, and there were no other apparent anomalies.

Initial laboratory investigations, including complete blood count and electrolytes, were normal. Serum glucose and thyroid function tests were within normal ranges. Further hormonal assessments revealed low levels of luteinizing hormone (LH) and follicle-stimulating hormone (FSH), and testosterone levels were low for the patient's age. Cortisol and adrenocorticotropic hormone (ACTH) levels were normal. A pelvic ultrasound was performed to assess internal genitalia, revealing normal male internal structures with no evidence of Mullerian structures. Genetic testing, including karyotype analysis, confirmed a 46,XY karyotype, ruling out chromosomal abnormalities.

Diagnosis

The diagnosis of micropenis was confirmed based on clinical measurements, hormonal profile, and genetic testing. The condition was attributed to isolated congenital hypogonadotropic hypogonadism, given the low levels of LH and FSH. The absence of other dysmorphic features and normal karyotype helped exclude syndromic causes and other structural abnormalities.

Management

The newborn was referred to a pediatric endocrinologist for further management. Endocrine therapy was initiated with low-dose testosterone enanthate injections, administered intramuscularly every four weeks. The initial dose was 25 mg, which was adjusted based on clinical response and hormone levels. The parents were educated about the condition, the importance of treatment adherence, and the need for regular follow-ups to monitor growth and development. Psychological support was also offered to the family to address concerns and provide guidance on potential psychosocial implications.

Over the following weeks, the boy showed significant improvement in penile length. Hormonal levels were monitored regularly, and the dosage of testosterone was adjusted accordingly. Follow-up visits were scheduled every three months to assess growth, pubertal development, and overall health. During these visits, the patient was also evaluated for potential complications, such as growth suppression and other side effects of corticosteroid therapy.

After three months of testosterone therapy, the penile length increased to 2.5 cm stretched, indicating a positive response to treatment. At the one-year follow-up, the penile length was within the normal range for age, and the child showed normal growth and developmental milestones. Continued monitoring and periodic reassessment of hormonal levels were planned to ensure sustained improvement and to address any emerging issues promptly.

2. Discussion

Micropenis can result from various underlying causes, including endocrine disorders such as hypogonadotropic hypogonadism, genetic syndromes, or structural abnormalities. A thorough evaluation, including hormonal assessments and genetic testing, is essential to determine the etiology and guide appropriate management. Early intervention with testosterone therapy can significantly improve penile length and support normal male gender identity development. Regular monitoring and follow-up are crucial to adjust treatment and ensure optimal outcomes. Multidisciplinary care involving pediatric endocrinologists, geneticists, and psychologists is essential for comprehensive management and support.

3. Conclusion

This case highlights the importance of early recognition and comprehensive management of micropenis in newborns. A multidisciplinary approach and timely intervention with endocrine therapy can lead to significant improvements in penile growth and overall development. Continued research and awareness are necessary to enhance understanding and treatment of this rare congenital condition.

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