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Case Report

Infantile Hemangioma of the Genital Region: A Case Report

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Abstract

Background: Infantile hemangiomas (IH) are the most common benign tumors in infancy, with a prevalence of 4.5%; less than 1% of these tumors are located in the genital region. This is a case of a 6 weeks old infant presenting with IH in the genital region.

Case presentation: Physical examination revealed a large genital cavernous hemangioma measuring 5 × 4 cm, which involved the labia majora, labia minora, and clitoris. Additionally, several hemangiomas were observed in the lower abdominal wall. A non-indurated ulcer measuring 1 × 1 cm with well-defined margins and a base covered with granulation tissue was observed on the right labia majora of the patient. Ultrasonography of the abdomen, brain, and heart and ECG were normal. We initiated therapy with propranolol (1 mg/kg) in an inpatient setting, with 24h monitoring of possible side effects. The therapy was well tolerated and no adverse effects were observed. After one week, the dose of propranolol was increased to 2 mg/kg in an outpatient setting. After two weeks, there was a great response to the therapy; the hemangioma started to decrease in volume, and the ulceration disappeared. At the age of 16 months, we stopped propranolol therapy when the hemangioma had almost completely disappeared.

Conclusion: Genital IH is rare but is associated with a high risk of ulceration and possible functional impairment. If therapy is indicated, propranolol is effective in the treatment of IH; however, it should be used cautiously, and patients must be closely monitored for adverse effects.

Keywords: *Infantile hemangioma, Genital hemangioma, Propranolol*

Introduction

Infantile hemangiomas (IH) are the most common tumors in children. Unlike other tumors, they have the unique ability to involute after proliferation, often leading primary care providers to assume that they will resolve without intervention or consequences. Unfortunately, a subset of IHs rapidly develop complications, resulting in pain, functional impairment, or permanent disfigurement [1]. The incidence of IHs has not yet been established. Some studies suggest 4%-5% [2], whereas others have indicated up to 10% in Caucasian infants[3]. Risk factors include female sex, white non-Hispanic infants, preterm infants with low birth weight, older maternal age, placenta previa, preeclampsia, and other placental anomalies [4].

However, the cause (pathogenesis) of IH remains unclear. The leading hypothesis for their occurrence is that during pregnancy, circulating endothelial progenitor cells responsible for creating blood vessels move to locations in the body where hypoxia (reduced oxygen supply) occurs and create new blood vessels in unusual places.

The natural cycle of IHs consists of three phases: rapid proliferation phase (with the fastest growth between 5.5 and 7.5 weeks), plateau phase, and slow involution phase. The maximum size is achieved at approximately 9 months on average, and regression is completed by the age of 4 years in 90% of the cases [5].

IH occurs most commonly on the head and neck and is seen in 60 % of cases. This is followed by lesions on the trunk in 25% of cases, and least commonly on the extremities, seen in 15% of cases[6]

They can also appear on the mucous membranes (oral mucosa and tongue) and internal organs (liver, lungs, brain, spleen, and other organs).

The genital area is rarely affected, accounting for only approximately 1% of cases, and represents a high-risk group [7,8]. Ulceration is the most common complication, occurring significantly more frequently in the lips, superior helix of the ear, perineum, perianal skin, inguinal regions, and other intertriginous areas [8]. These locations require aggressive and early treatment owing to the risk of infection, pain, and long-term functional impairment [8].

We present the case of a 6-week-old female infant with a rapidly growing infantile hemangioma of the clitoris and labia complicated by ulceration.

Case Presentation

A 6 weeks old female baby was referred to our hospital because of a large IH located in the urogenital region. The child was from the first twin pregnancy, born at 37 weeks of gestation with a birth weight of 1900 g and an orderly peri - and postnatal period. The IH was first noticed at the age of seven days, as it had been continuously growing.

Physical examination revealed an extensive violaceous lobulated infantile hemangioma involving the clitoral region and labia, measuring 5 × 4 cm. Two inferior ulcerations with fibrinous crusts and peripheral erythema were visible, with associated satellite hemangiomatous papules (Figure 1). Lesions pose a significant risk of secondary infection, pain, and functional compromise. Ultrasonography of the lesion suggested infantile hemangioma. Ultrasonography of the abdomen, brain, and heart was performed, but no significant findings were observed. An electrocardiogram was performed before starting therapy and was normal.

We initiated therapy with syrup propranolol (1 mg/kg), orally, divided into two doses, in an 24 hours inpatient setting, for monitoring of the possible side effects (monitoring heart rate, blood pressure, and glycemia, before the medicine application and one hour after the application). The medicine was administered immediately after meal. The therapy was well tolerated and no adverse effects were observed. After one week, the dose of propranolol was increased to 2 mg/kg, divided into two doses, in an outpatient setting. After two weeks, there was a great response to the therapy, and the hemangioma started to decrease in volume, measuring 3 × 2 cm, and the ulceration disappeared. At 16 months, propranolol therapy was stopped when IHs had almost completely disappeared (Figure 2).

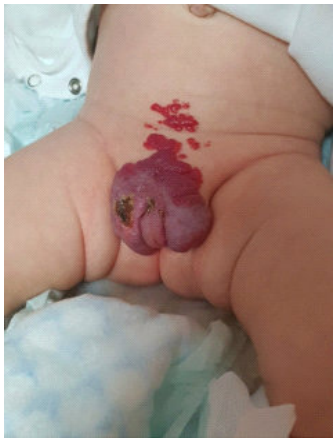

Figure 1. Extensive ulcerated infantile hemangioma involving the clitoral complex, labia majora, and labia minora in a 6-week-old female infant. The lesion exhibited a violaceous lobulated morphology with ulceration covered by a fibrinous crust and surrounding erythema prior to the initiation of propranolol therapy.

Figure 2. Significant regression of the genital infantile hemangioma after systemic propranolol therapy, with marked reduction in lesion volume and complete healing of ulceration without residual functional deformity.

Discussion

Infantile hemangiomas are a complex mixture of clonal endothelial cells associated with pericytes, dendritic cells and mast cells. During the growth phase, two major proangiogenic factors are involved: basic fibroblast growth factor (bFGF) and vascular endothelial growth factor (VEGF). Histological studies have shown that both endothelial and interstitial cells actively divide during this phase, and apoptosis is observed during the involution phase [9].

There are five major indications for considering early treatment with systemic therapy or the need for further evaluation of infantile hemangiomas: life-threatening complications, functional impairment or risk thereof, ulceration or risk thereof, evaluation to identify important associated structural anomalies, and risk of leaving permanent scarring or distortion of anatomical landmarks.

When systemic treatment is indicated, propranolol is the drug of choice at a dose of 2 - 3 mg/kg/day [8]. Potential explanations for the therapeutic effect of propranolol, a non-selective beta-blocker, on infantile capillary hemangiomas include vasoconstriction, which is immediately visible as a change in color and is associated with palpable softening of the hemangioma [1].

Genital infantile hemangiomas present a clinical challenge owing to their high complication rate [6]. Vulvar hemangiomas may present as painful vulvar masses or multiple purple-blue swellings in the labia majora. Clitoral hemangiomas are particularly rare and have only been described in a few cases [10]. Ulceration, the most common complication, occurs in up to 80% of perineal locations due to moisture, friction, and contamination [8].

Therefore, the symptoms, localization of the lesion, and the institution's level of experience in handling such cases influence the management of this condition. The main treatment options are propranolol, topical corticosteroids, surgical excision, laser therapy, embolization, radiotherapy, and intermittent pneumatic compression. Since its approval in 2014, propranolol has become the first-line therapy and has shown rapid efficacy in reducing cell proliferation [8,11]. Before the initiation of therapy, the potential risks of adverse effects are carefully considered and weighed against the benefits of intervention. Early initiation of propranolol for infantile hemangioma is critical for better outcomes. However, close monitoring is important, with focus on cardiovascular stability, respiratory health and blood glucose levels, particularly when starting or increasing doses. Clitoris and vulva are especially sensitive anatomical regions, which has the potential risk for long-term functional consequences [6,7]. This case confirms the need for a multidisciplinary approach and early initiation of therapy.

Conclusion

Hemangiomas are the most common benign tumors in childhood, with infantile hemangiomas (IH) being the most frequent subtype. Genital localization is a rare but high-risk vascular tumor. Early diagnosis, timely initiation of propranolol treatment, and optimal local care are crucial to prevent ulceration, infection, and long-term functional consequences.

Ethics Statement

Written informed consent was obtained from the patient's parents for the publication of this case report and accompanying clinical images. This study was conducted in accordance with the principles of the Declaration of Helsinki. According to institutional regulations, formal ethical committee approval was not required for a single anonymized case report.

Conflict of Interest

The authors declare no conflict of interest.

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Author Contributions

Conceptualization: B. C. J.Data collection: B.C.J., A.D., N.N.; Clinical management: B.C.J., and S.P.K. Literature review: M.D.I., A.J.Writing – original draft: B.C.J.Writing – review & editing: All authors. All the authors approved the final manuscript.

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