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REVIEW ARTICLE

Infantile Hemangioma: An Overview

Prema Dhanraj

ABSTRACT

Infantile hemangiomas (IH) are benign vascular neoplasms that have a characteristic clinical course marked by early proliferation and followed by spontaneous involution. Hemangiomas are the most common tumors of infancy and usually are medically insignificant. The vast majority of infantile hemangiomas do not require any medical or surgical intervention. Treatment options for clinically significant hemangiomas include, laser surgery, surgical excision or Medication.

Keywords: Flashlamp-pumped pulsed-dye laser, Hemangioma, Laser thearapy.

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INTRODUCTION

Hemangioma is a birthmark that appears as a bright red spot during the first few weeks of life. It grows during the first year of life, and then recedes over time. The characteristic feature of hemangioma is early proliferation, followed by spontaneous involution.[1] Hemangioma can occur anywhere on the body, but most commonly appears on the face, scalp, chest, or back. About half of all hemangiomas resolve by age 5, and nearly all hemangiomas are resolved by age 10. Although, the color of the birthmark fades with time, discoloration of the skin or residual extra skin may remain. Occasionally, infantile hemangiomas may impinge on vital structures, ulcerate, and bleed. Treatment of a hemangioma usually is not needed, unless the nodule interferes with vision or breathing.

INCIDENCE

Hemangiomas occur in 10 to 12% of white infants, 1.4% of black infants, and 0.8% of Asian infants. As much as 80% of hemangiomas are noted in the first month of life. About 60% occur in the head and neck (Fig. 1). They are solitary in 80% of patients and multiple in 20%. Female-to-male ratio is 3:1.

Professor and Head

Department of Plastic Surgery, RajaRajeswari Medical College and Hospital, Bengaluru, Karnataka, India

Corresponding Author: Prema Dhanraj, Professor and Head Department of Plastic Surgery, RajaRajeswari Medical College and Hospital, Bengaluru, Karnataka, India, e-mail: premadhanaraj@gmail.com

SIGNS AND SYMPTOMS

Most hemangiomas of infancy appear within the first 2 to 3 weeks of life, and this is the hallmark of infantile hemangioma. They may begin as a flat, reddish patch and grow very rapidly for weeks or months.

The three stages in the life cycle of a hemangioma are:[2]

1. *The proliferating phase (0–1 year of age)*: Begins shortly after birth, continues for up to 1 year, reaches 85% of size by 5 months of age, and involves the skin and subcutaneous layers. During the early proliferative phase, plump endothelial cells divide rapidly and cause enlargement of these lesions. When present on the eyelids, intervention is required as it causes astigmatism and obstruction of the visual axis (Fig. 2).
2. *The involuting phase (1–5 years of age)*: Superficial lesions change from bright red to dull red, followed by flattening and softening of lesion. Spontaneous involution in 50% of infantile hemangiomas occur by age 5 years and 70% by age 7 years, and 90% by 9 years (Figs 3 and 4).
3. *The involuted phase (>5 years of age)*: Most complete involution by age 7 to 10 years. Usually it leaves behind redundant skin.

HISTOPATHOLOGY

Hemangioma is characterized by hypercellular and endothelial multiplication (plump, rapidly dividing

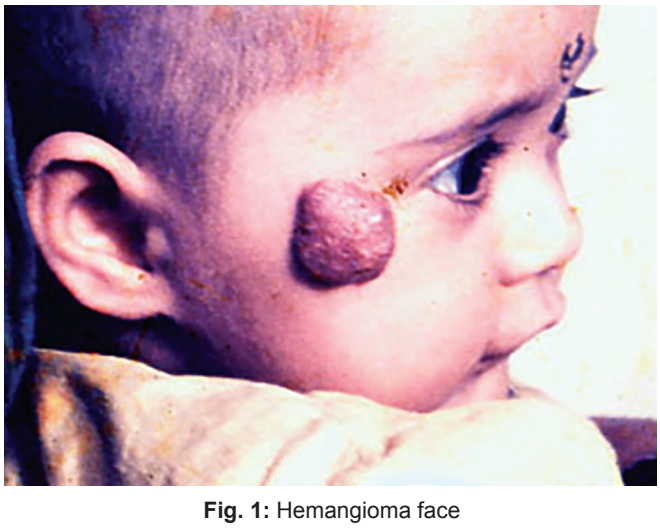

Fig. 1: Hemangioma face

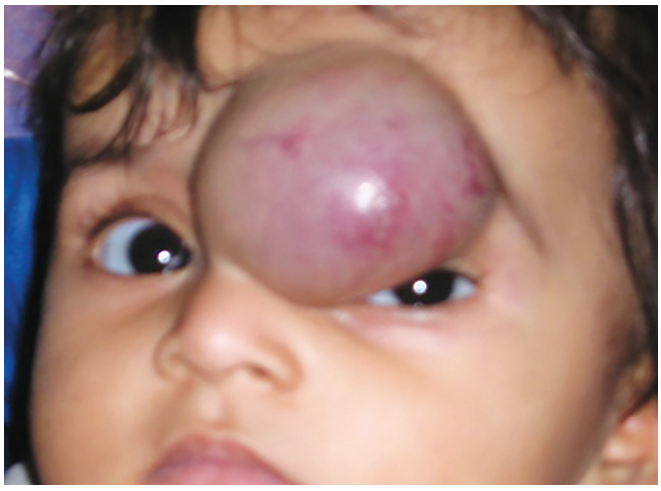

Fig. 2: Hemangioma eyelid (upper eye)

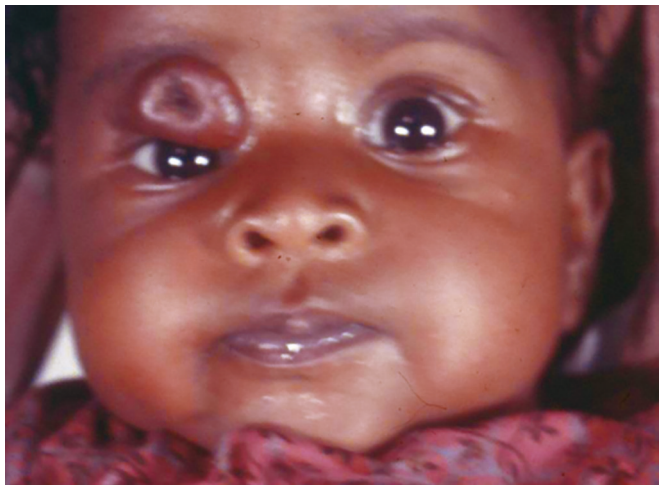

Fig. 3: Involuting hemangioma

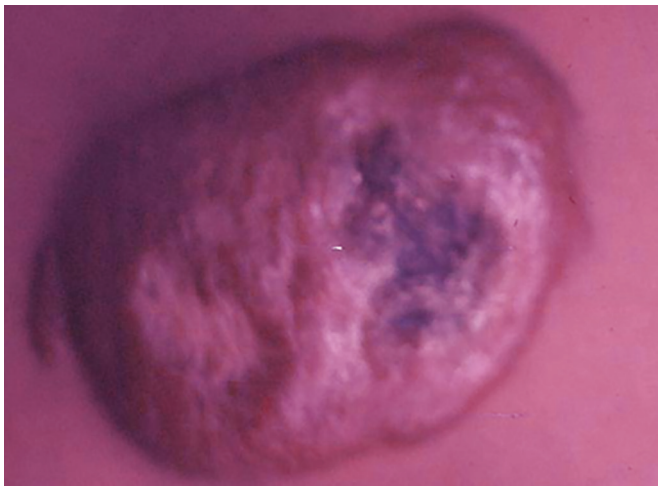

Fig. 4: Involuting hemangioma

Fig. 5: Hemangioma eyelid (lower eye)

endothelial cells). Gradually the cells flatten and mature. Mast cells appear with progressive deposition of fibrous tissue.

Diagnosis

Hemangiomas are best diagnosed with thorough history and physical examination. Diagnostic tests are not usually needed.

Treatment

The best policy is to wait and watch. Serial photographs and regular follow-up visits are advised. Systemic steroids, such as, prednisolone 2 to 3 mg/kg/day for 4 to 6 weeks can be given. In some cases, intralesional corticosteroids, such as, triamcinolone 10 mg or intralesional sodium tetradecyl sulfate 1 mL can be advised.

Surgical excision during the proliferative phase is indicated only when the lesion is causing either obstruction to vision or to airway. It is important to note that one should not intervene till spontaneous regression takes place as surgical intervention results in severe deformity (Figs 5 and 6).

Generally, hemangiomas do not require any treatment as most of them involute spontaneously. However, those that are located in the eyelid require treatment to reduce the growth.[3] Oral steroids are given to reduce the growth of the hemangioma.[4]

Laser surgery is beneficial in treating both proliferating and residual vessels from hemangiomas. Flashlamp-pumped pulsed-dye laser has become the most widely used laser for selective ablation of vascular tissue in childhood.[5,6]

Surgical excision of involuted hemangiomas is common because of the redundant cutaneous defects resulting from them (Figs 7 and 8). Surgical excision of proliferating hemangiomas is potentially hazardous because of the risk of hemorrhage and damage to vital structures associated with them.[7]

Complications

Occasionally, a hemangioma can break down and develop an ulcer. This can lead to pain, bleeding, scarring, and

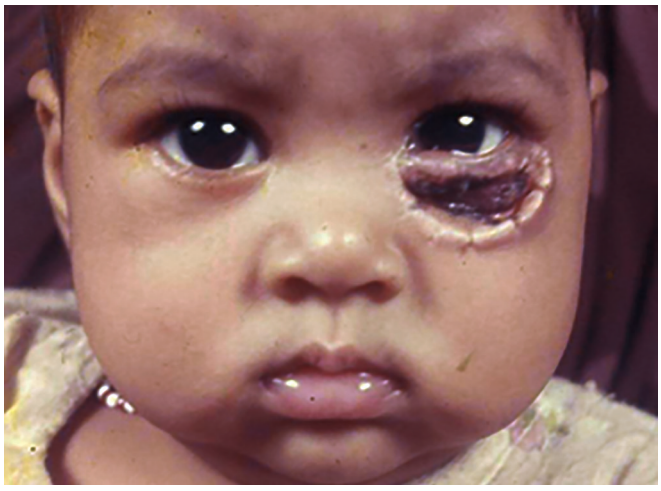

Fig. 6: Post excision deformity

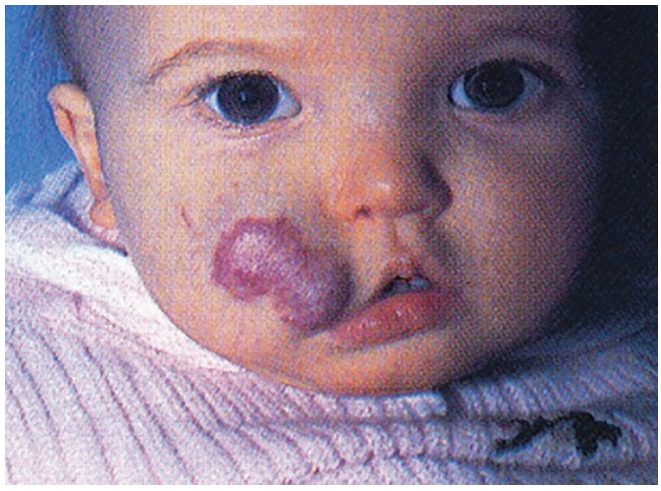

Fig. 7: Proliferating hemangioma

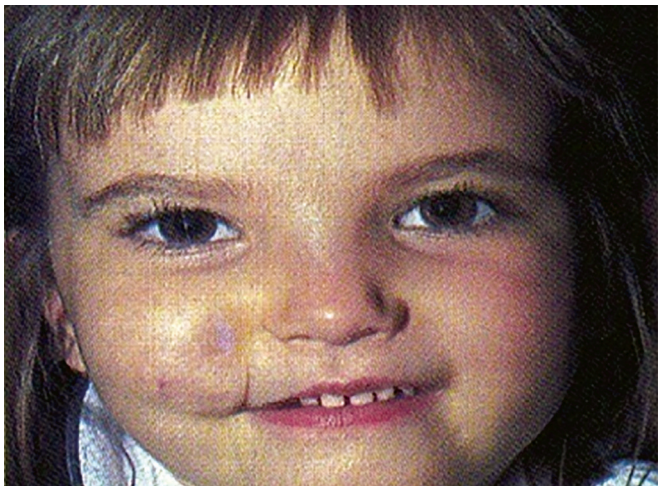

Fig. 8: Redundant skin after spontaneous involution

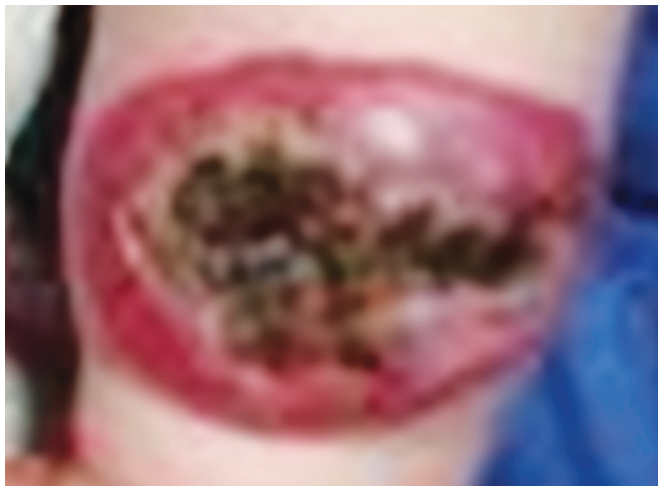

Fig. 9: Ulcerating hemangioma

infection. Depending on where the hemangioma is situated, it may interfere with child's vision, breathing, or hearing.

- Ulceration occurs in 10% of hemangiomas, secondary infection can occur. Treatment includes topical and oral antibiotics (Fig. 9).
- Airway obstruction is a rare complication of hemangiomas.
- Visual obstruction should be considered whenever a hemangioma involves the eyelids or periorbital tissues.
- Kasabach–Merrit syndrome – is characterized by thrombocytopenia and bleeding disorder.[8]

PROGNOSIS

The prognosis of hemangioma is very good, with complete involution of 50% by age 5 years, 70% by age 7 years, and 90% by age 9 years. Despite resolution of the vascular component, residual skin changes are observed in roughly 50% of cases.

REFERENCES

1. Bowers RE, Graham EA, Tomlinson KM. The natural history of the strawberry nevus. Arch Dermatol 1960 Nov;82(5):667-680.
2. Mulliken JB, Glowacki J. Hemangiomas and vascular malformations in infants and children: a classification based on endothelial characteristics. Plast Reconstr Surg 1982 Mar;69(3):412-422.
3. Achauer BM, Chang CJ, Vander Kam VM. Management of hemangioma of infancy: review of 245 patients. Plast Reconstr Surg 1997 Apr;99(5):1301-1308.
4. Sadan N, Wolach B. Treatment of hemangiomas of infants with high doses of prednisone. J Pediatr 1996 Jan;128(1):141-146.
5. Garden JM, Bakus AD, Paller AS. Treatment of cutaneous hemangiomas by the flashlamp-pumped pulsed dye laser: prospective analysis. J Pediatr 1992 Apr;120(4 Pt 1):555-560.
6. David LR, Malek MM, Argenta LC. Efficacy of pulse dye laser therapy for the treatment of ulcerated haemangiomas: a review of 78 patients. Br J Plast Surg 2003 Jun;56(4):317-327.
7. Ceisler EJ, Santos L, Blei F. Periocular hemangiomas: what every physician should know. Pediatr Dermatol 2004 Jan-Feb;21(1):1-9.
8. Sarkar M, Mulliken JB, Kozakewich HP, Robertson RL, Burrows PE. Thrombocytopenic coagulopathy (Kasabach-Merritt phenomenon) is associated with Kaposiform hemangioendothelioma and not with common infantile hemangioma. Plast Reconstr Surg 1997 Nov;100(6):1377-1386.