

HEMANGIOMA

Author Name: Mrs. Jovita Annie Alex

Assistant Lecturer

K. J. Somaiya College of Nursing

Introduction

A hemangioma (he-man-jee-O-muh) is a usually benign vascular tumor derived from blood vessel cell types. The most common form is infantile hemangioma, known colloquially as a "strawberry mark", most commonly seen on the skin at birth or in the first weeks of life.

Most hemangiomas occur on the surface of the skin or just beneath it. They often develop on the face and neck, and can vary greatly in color, shape, and size.

Because hemangiomas very rarely become cancerous, most do not require any medical treatment. However, some hemangiomas can be disfiguring, and many people seek a treatment for cosmetic reasons. In most cases of hemangioma, treatment does not involve surgery. Instances when surgery may be necessary include for tumors that are deep in muscle or bone, or for tumors on the skin that cause problems with vision, breathing, or eating.

Definition

A hemangioma is a benign (noncancerous) tumor made up of blood vessels. There are many types of hemangiomas, and they can occur throughout the body, including in skin, muscle, bone, and internal organs.

A hemangioma occurs when small blood vessels begin to multiply at an abnormal rate and form a mass or lump. It is possible to have more than one hemangioma.

Epidemiology

Hemangiomas are the most common tumors of infancy. The true incidence of infantile hemangiomas is unknown. Although they are classically said to occur in up to 10 percent of Caucasian infants, 4 to 5 percent is probably a better estimate. Infantile hemangiomas are generally noticed within the first few days to months of life.

Types

- **Capillary hemangioma:**

This is the most common type of hemangioma. It is made up of small capillaries that are normal in size and diameter, but high in number. These capillaries form a tightly packed group held together by thin, connective tissue. When it develops in the skin, a capillary hemangioma is often referred to as "superficial." Due to their close proximity to the surface of the skin



- **Cavernous hemangioma:**

In contrast with a capillary hemangioma, a cavernous hemangioma is made up of larger blood vessels that are dilated (widened). The blood vessels are not as closely packed as in a capillary hemangioma, and the spaces (or "caverns") between them are filled with blood. When they develop in the skin, cavernous hemangiomas are often referred to as "deep," and sometimes first appear as a bluish swelling underneath the skin.



- **Compound hemangioma:**

Some hemangiomas are a mix of the capillary and cavernous types. Lobular capillary hemangioma (pyogenic granuloma). These small, red bumps often appear on the hands, face, and arms. Because they contain so many blood vessels, they bleed easily often with just mild contact. This type of hemangioma is also sometimes referred to as a "pregnancy tumor" because they often appear during pregnancy, typically in the nose and mouth.

- **Infantile hemangiomas**

Infantile hemangiomas are the most common benign tumor found in children. They are made up of blood vessels, often called strawberry marks, and are more common in girls than in boys. They usually appear on the skin of infants who are 4-6 weeks old. They tend to either grow quickly for up to a few months, and then shrink or involute without further problem, however some can ulcerate and form scabs which can be painful.



- **Congenital hemangiomas**

Congenital hemangiomas are present on the skin at birth, unlike infantile hemangiomas, which appear later. They are fully formed at birth, meaning that they do not grow after a child is born, as infantile hemangiomas do. They are less common than infantile hemangiomas. Congenital hemangiomas can be coloured from pink to blue.



- **Intramuscular hemangioma:**

Hemangiomas in muscle tissue can develop at any age, but most often occur in young adults. Capillary hemangiomas are more common in muscle than cavernous and compound types. Any muscle can be involved.

Because they are located within the muscle, these hemangiomas often show no visible signs, although some may cause swelling in the area of the tumor that increases with activity.

- **Bone hemangioma:**

The hemangiomas that occur in bones typically occur in the skull or spine and are most common in people who are 50 to 70 years of age. Capillary and cavernous types are the most common hemangiomas found in bone. They can grow on the surface or deeper into the center canal of a bone.

- **Internal organ hemangioma:**

Although uncommon, hemangiomas can develop in internal organs, most often the liver and intestines. Like hemangiomas found in bone, hemangiomas in internal organs are often found by chance during tests for another purpose.

Etiology

- Different types of hemangiomas are associated with different causes, although exactly why hemangiomas develop is not well understood.
- Infantile hemangiomas are caused by errors in the development of the vascular system that occur during fetal development but, in many cases, the event that caused the error cannot be identified.
- Some hemangiomas develop after an injury
- Some hemangiomas develop with pregnancy and go away afterward

Clinical Manifestation

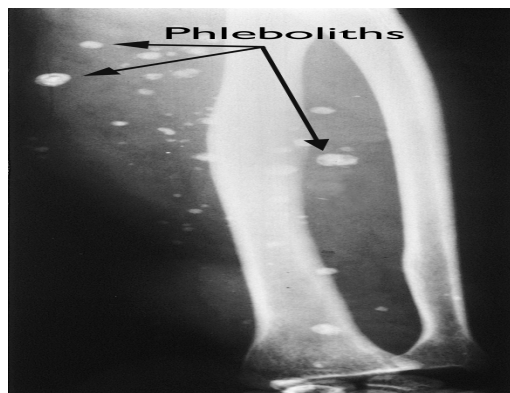
- Hemangiomas are usually painless, red to blue colored lesions on the skin, lips, or inside the mouth.
- They are often soft to the touch.
- Most often they are flush with the skin or slightly elevated, but sometimes they grow from a stalk.
- Superficial lesions may bleed or turn into sores, particularly if bumped or injured.
- Deep hemangiomas in muscle may cause pain, as well as swelling around the hemangioma that increases with activity.
- Hemangiomas in bones may cause pain and enlargement of the bone.

Diagnostic Evaluation

- **Medical History and Physical Examination**
 - Good history of the lesion should be collected, particularly how long the mass has been there and whether it has changed at all over time.
 - Ask about symptoms such as pain associated with the lesion, and when the symptoms began.
 - Inspect and palpate any mass, noting exactly where it is located, what it feels like, and perhaps any surrounding changes in the skin

Diagnosis is usually clinical and tests are not necessary

- **X-rays and computerized tomography (CT) scans:** Although these tests create better pictures of dense structures like bone, plain x-rays and CT scans may show a cavernous hemangioma. These calcifications are called phleboliths.



- **Magnetic resonance imaging (MRI) scans:** These scans can create clear images of soft structures like a hemangioma. Hemangiomas in an MRI scan are often described as a "bag of worms" due to the way the blood vessels pack around one another.



- **Angiogram**
- **Biopsy:** At times, it may be difficult to distinguish hemangiomas from other tumors, and a biopsy is sometimes necessary to confirm a diagnosis of hemangioma.

Management

Hemangiomas usually fade gradually over time, and most do not require treatment. Therapeutic options can have side effects and are avoided if possible. However, hemangiomas that may be disfiguring or that are located at sites that can cause impairment (eyelids, airway) are often treated, typically with pharmacotherapy first.

- **Nonsurgical management**
 - **Beta-blockers**

Oral propranolol: Oral propranolol is the first line of defense for hemangiomas needing systemic treatments i.e. oral propranolol hydrochloride

Topical beta-blockers, such as timolol gel: These beta-blockers can be used for small, superficial hemangiomas. They may also have a role in treating smaller ulcerated hemangiomas. This medication is generally considered safe when used properly under the care of a healthcare provider.

- **Corticosteroid medication**

Corticosteroids may be injected into a hemangioma to reduce its growth and to stop inflammation.

Systemic steroids, such as prednisone and prednisolone, are not typically used anymore. Although, they may have a role for those who cannot use other medications such as beta-blockers that are more typically used.

- **Compression:**

Intermittent pneumatic compression is a treatment that uses inflatable sleeves or leggings to apply pressure to the tumor. It can help in decreasing the swelling associated with a hemangioma

- **Embolization:**

This is a minimally invasive procedure where small particles are injected into the blood vessels to block them off. Sclerotherapy is a similar procedure where chemical agents are used to close off the vessels.

- **Laser treatment**

Laser treatment can be used to remove hemangiomas on the top layers of the skin. In some cases, a surgeon may use laser treatment to reduce redness and improve the appearance.

- **Medicated gel**

A medicated gel called becaplermin (Regranex) is expensive and has been used off-label in some studies as a treatment for chronically ulcerated hemangiomas. It carries a risk of developing cancer in people who receive it repeatedly.

- **Surgical management**

Surgery may be recommended for a cavernous hemangioma if the lesion is destroying the healthy tissues surrounding it. In some cases, a hemangioma can cause painful symptoms severe enough to consider surgical treatment

- surgical excision of the hemangioma
- surgical removal of the damaged organ or damaged area
- In hemangiomas of the liver, ligation of the main blood supply to the hemangioma may be an option

Complications

- Haemorrhage
- Infection
- Scarring

Nursing Management

- Collect birth history, time of appearance of haemangioma , its location and treatment taken.
- Assess the site of haemangioma, its colour, if ulcerated.
- Health education should be given to the parents that hemangioma will disappear by it self with time, most of the time no treatment is required. Do not apply pressure or rub hemangioma as it can cause bleeding.
- If treatment required prepare the patient by providing adequate knowledge about medications and surgery.

Case study

Jasmeet Singh, Preeti Sharma et al (2017) reported a case of a 15-year-old female who presented to the outpatient dermatology department with chief complaints of brownish painful warty lesions over the dorsum of the left foot since birth.

Initially, the lesions were red, soft, and gradually increased in size and number up to the age of 5 years to become warty, brownish black, hard, and tender. History of bleeding usually following minor trauma was noted. General physical examination was within normal limits. Cutaneous examination revealed multiple hyperpigmented, hyperkeratotic plaques consisting of closely-set warty papules varying from 2 cm × 2.5 cm to 3 cm × 3.5 cm involving the dorsum of the left foot and lateral malleolus. Surface of the lesion was firm and verrucous with no ulceration, bleeding, or atrophy. The lesion was noncompressible and diascopy was negative. No other hair, nail, or mucosal abnormality was noted. There was no palpable regional lymphadenopathy.

Color Doppler revealed ill-defined heteroechoic soft tissue densities at the anterior, superior, and lateral aspect of the left foot showing few echogenic foci and slow venous flow. Magnetic resonance imaging (MRI) scan showed mild delayed enhancing lesion in the skin and subcutaneous plane of the left foot. A probable diagnosis of vascular malformation, capillary venous type, was given and skin biopsy was performed. skin biopsy showed hyperkeratosis, parakeratosis, acanthosis, and papillomatosis of the epidermis.

Based on the immunomorphological features a final diagnosis of verrucous hemangioma of the left foot was rendered. Patient was started on a combination of topical 0.05% halobetasol propionate with 3% salicylic acid ointment twice daily. The lesions reduced in size and became less warty over a period of 2 months. Patient was then referred to plastic surgery for excision. Postoperative period was uneventful with no recurrence after 1-year follow-up.

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