Vascular anomalies

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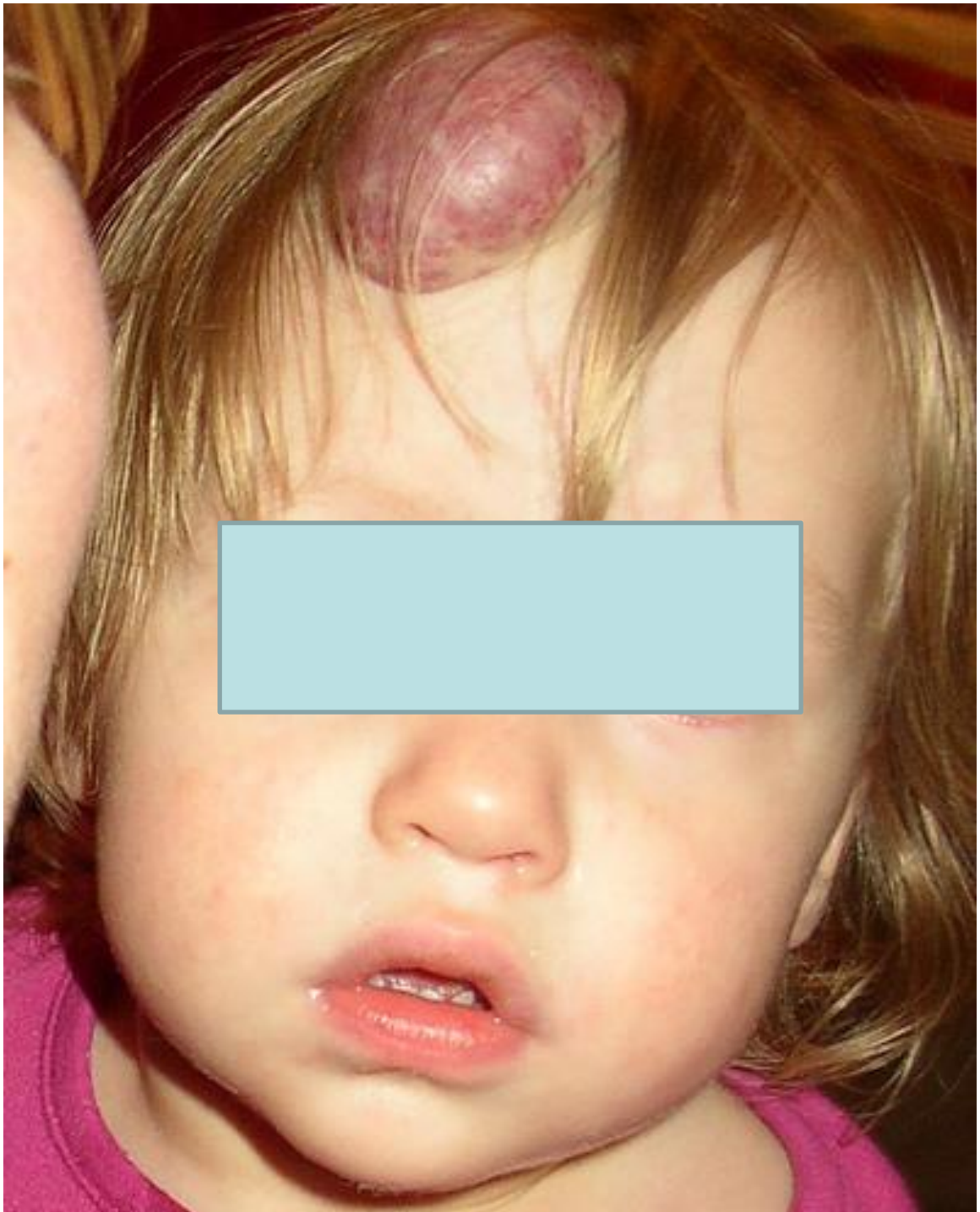
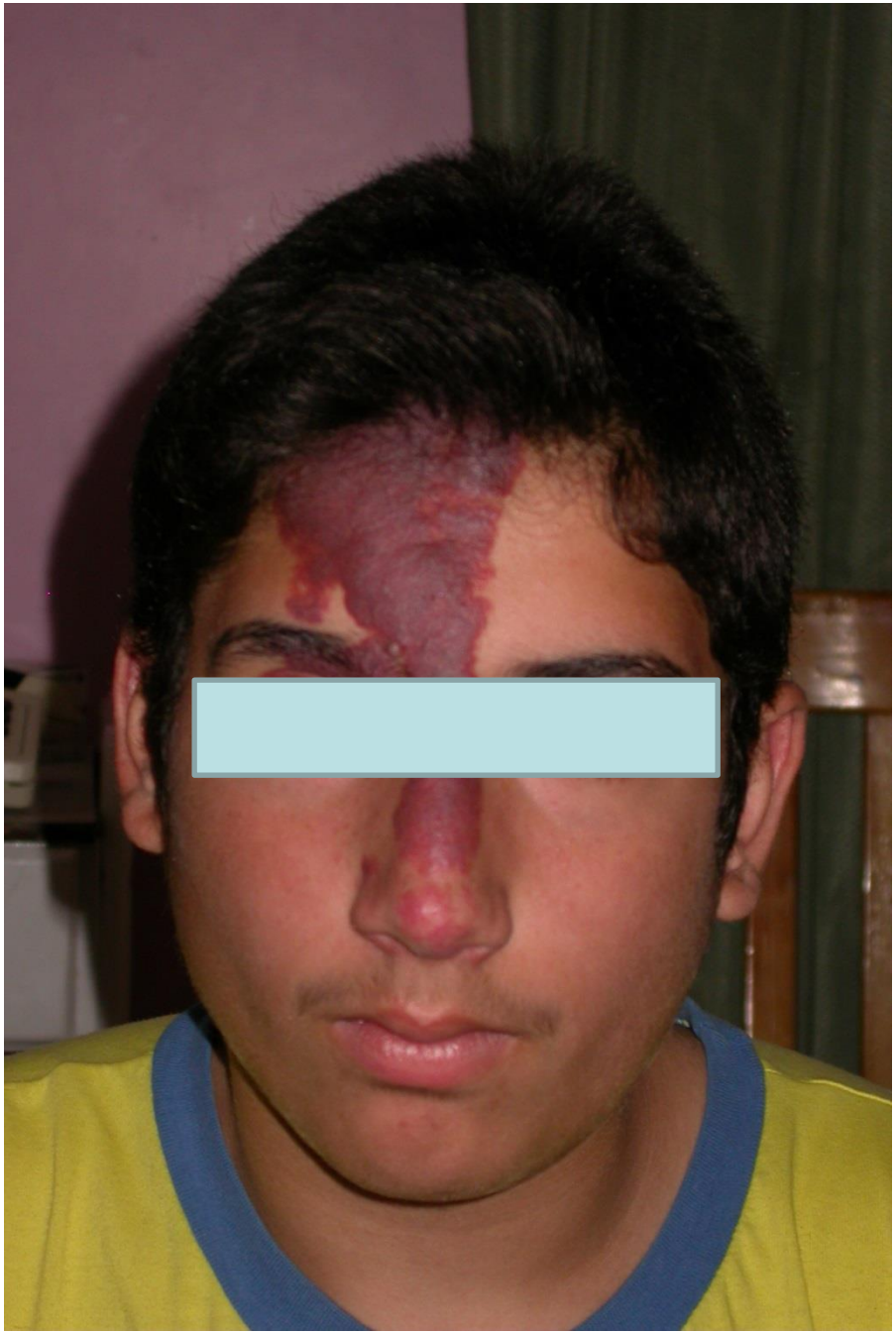
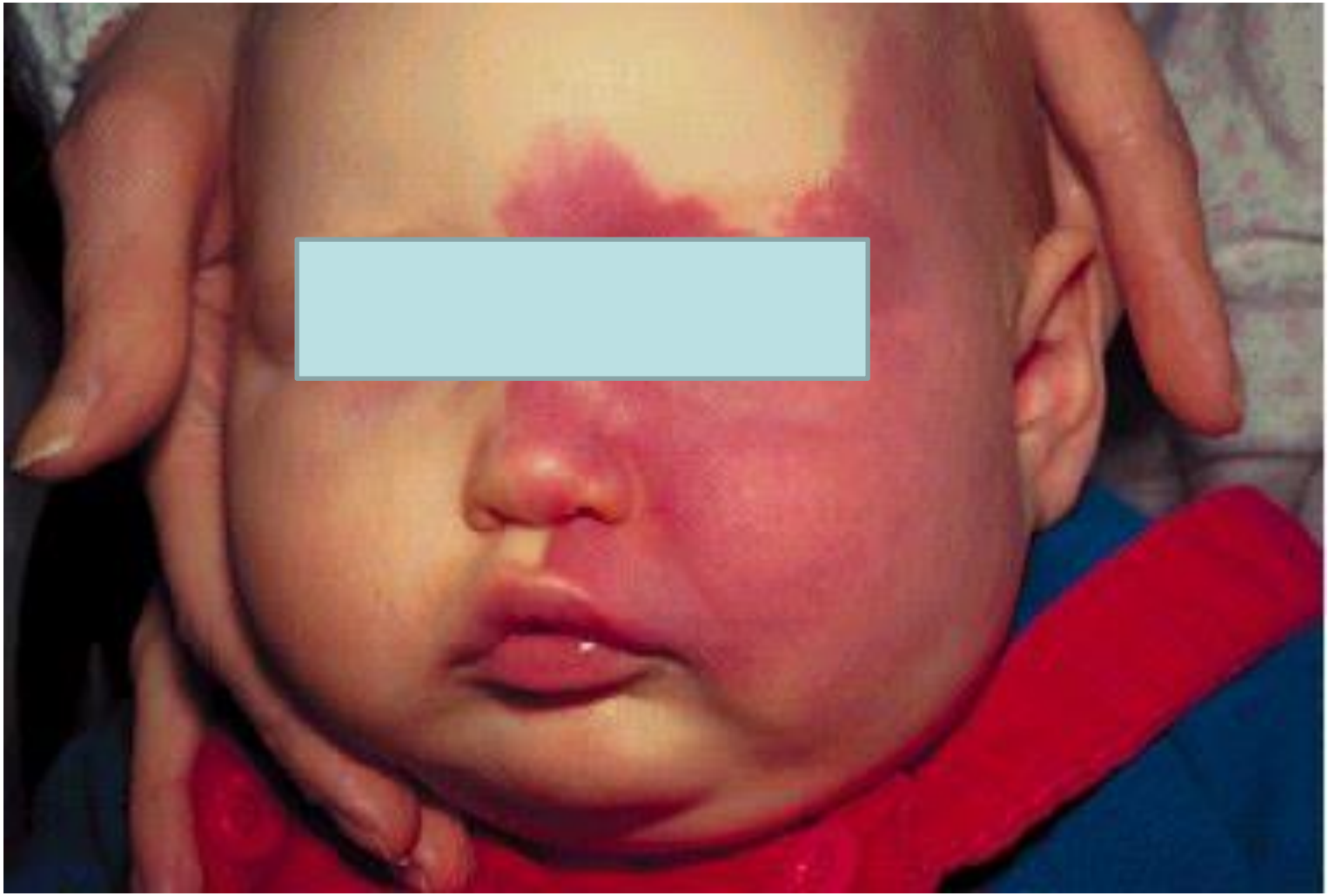
Vascular anomalies

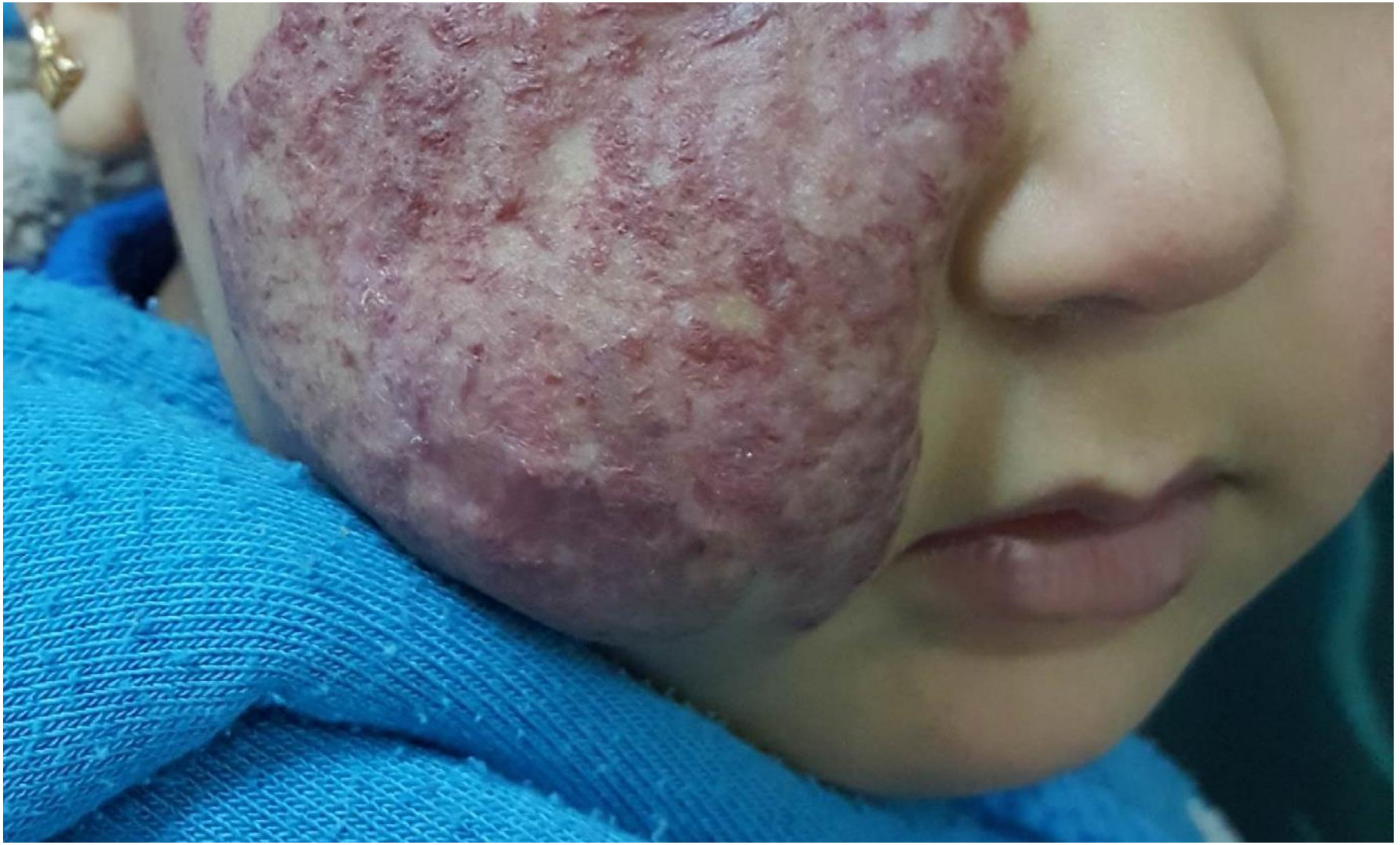
Vascular anomalies: Are congenital anomalies caused by abnormal growth of blood vessels, leading to masses originating and consisting of blood vessels with variable shapes.

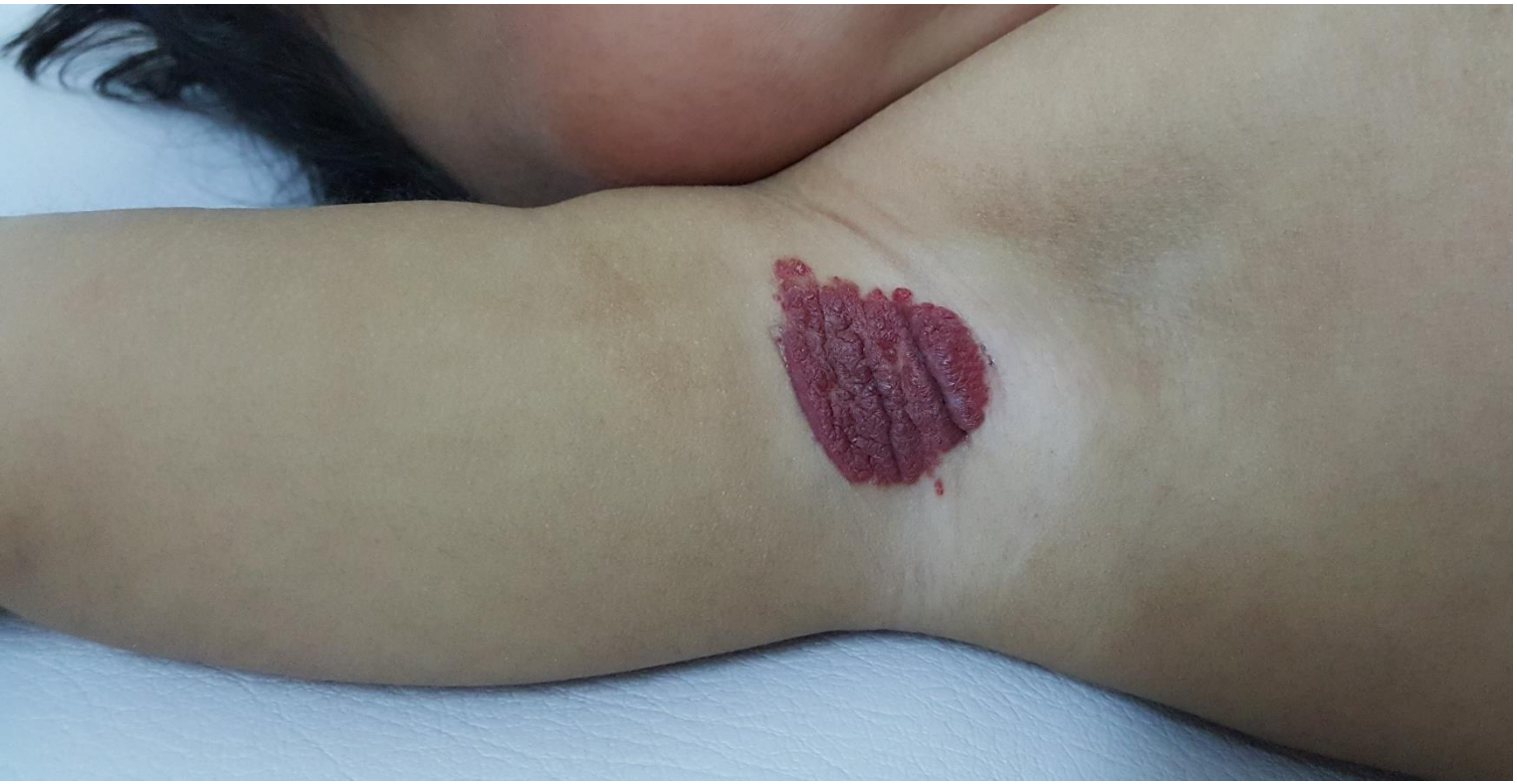
Vascular lesions in the head and neck region can result in significant cosmetic problems for the patient, and some may lead to even serious life threatening hemorrhage.

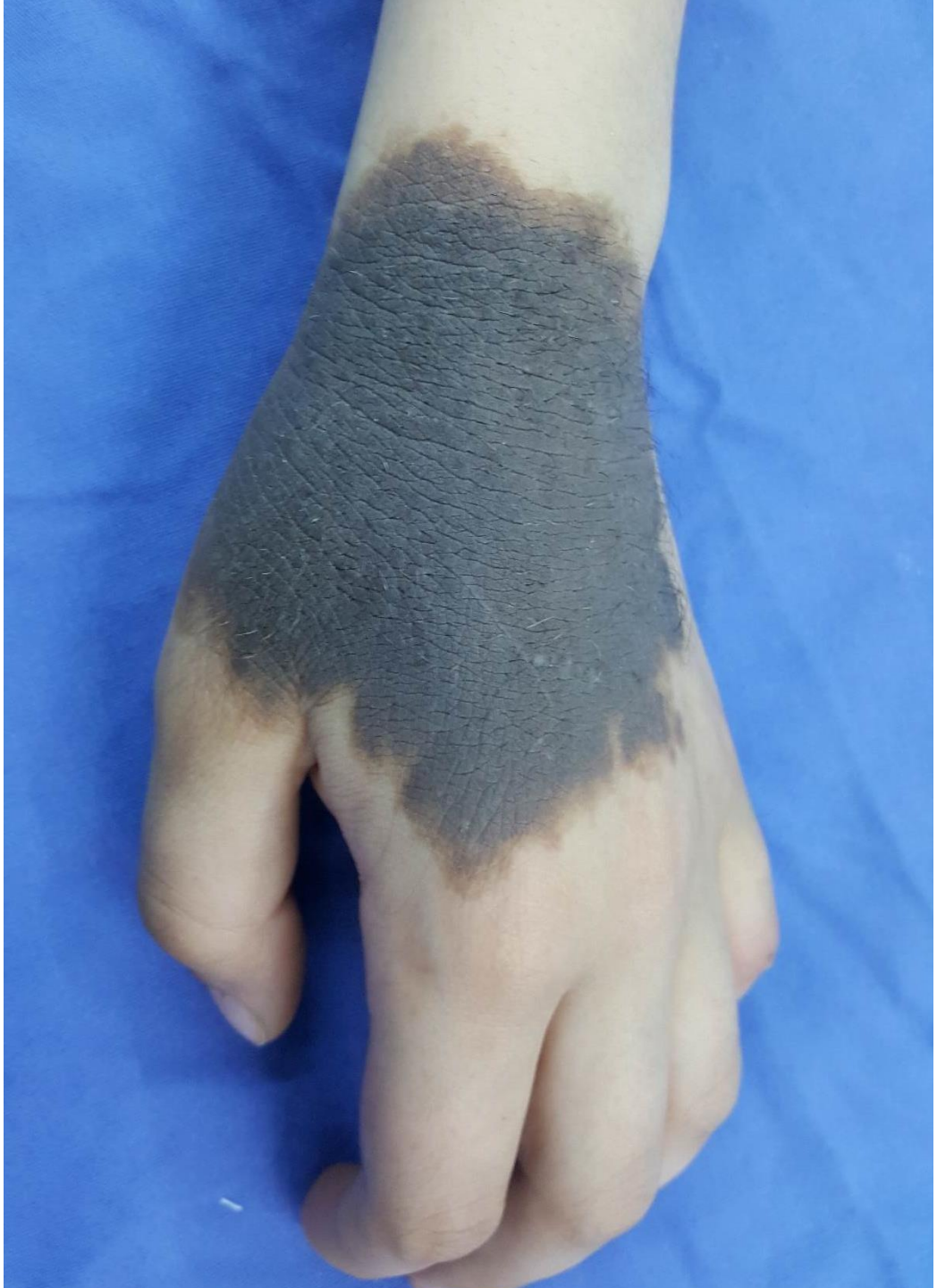


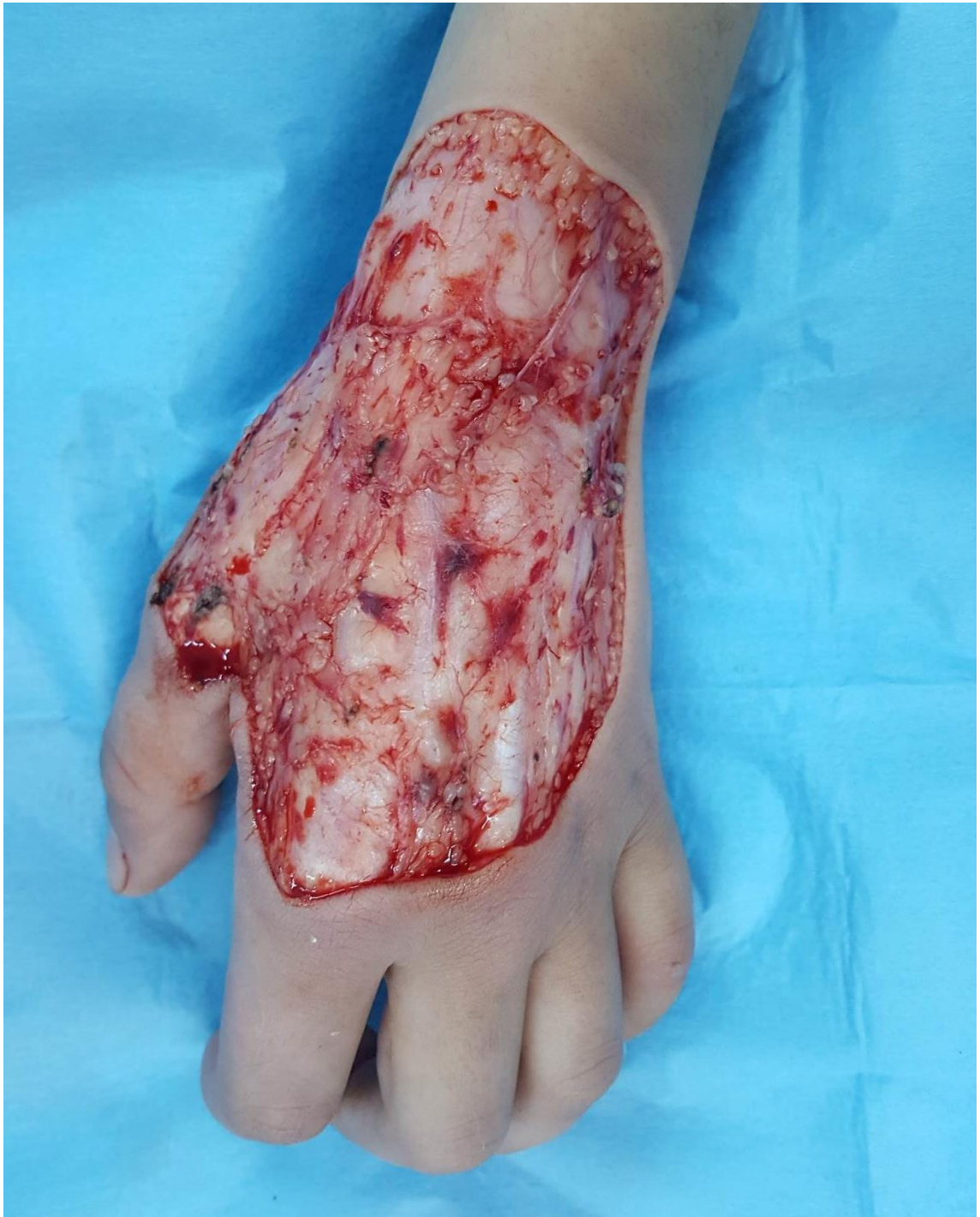


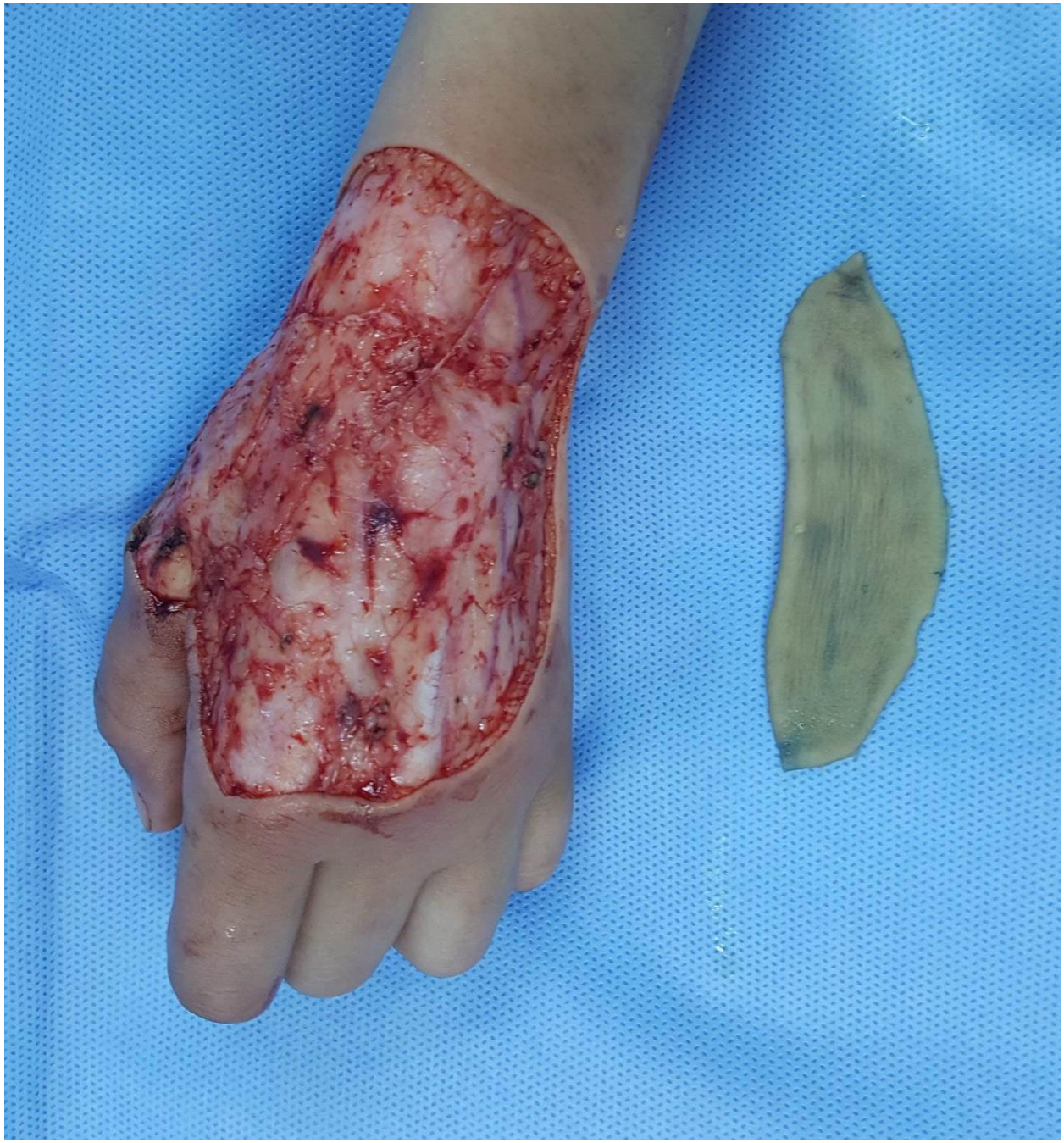


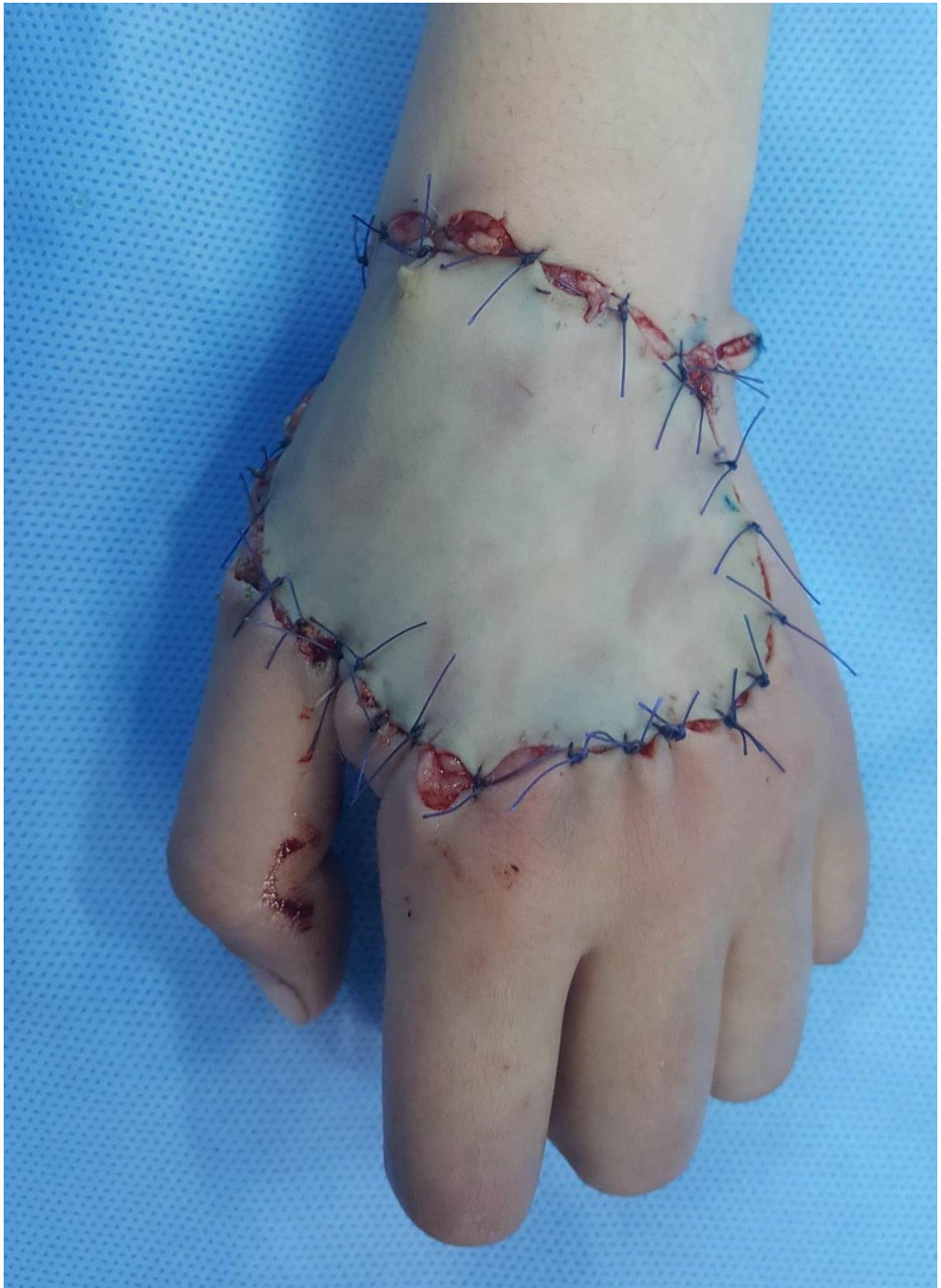


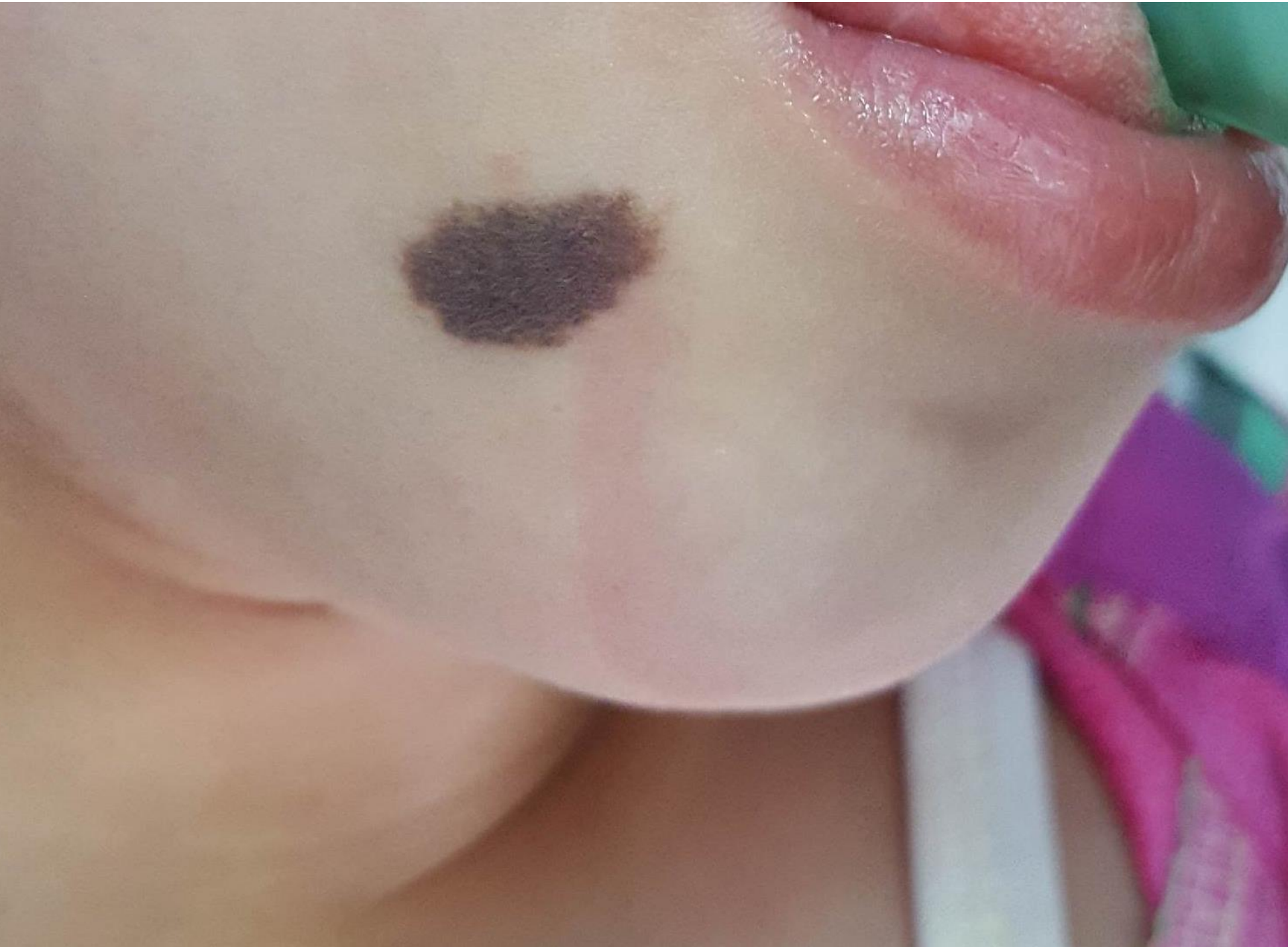


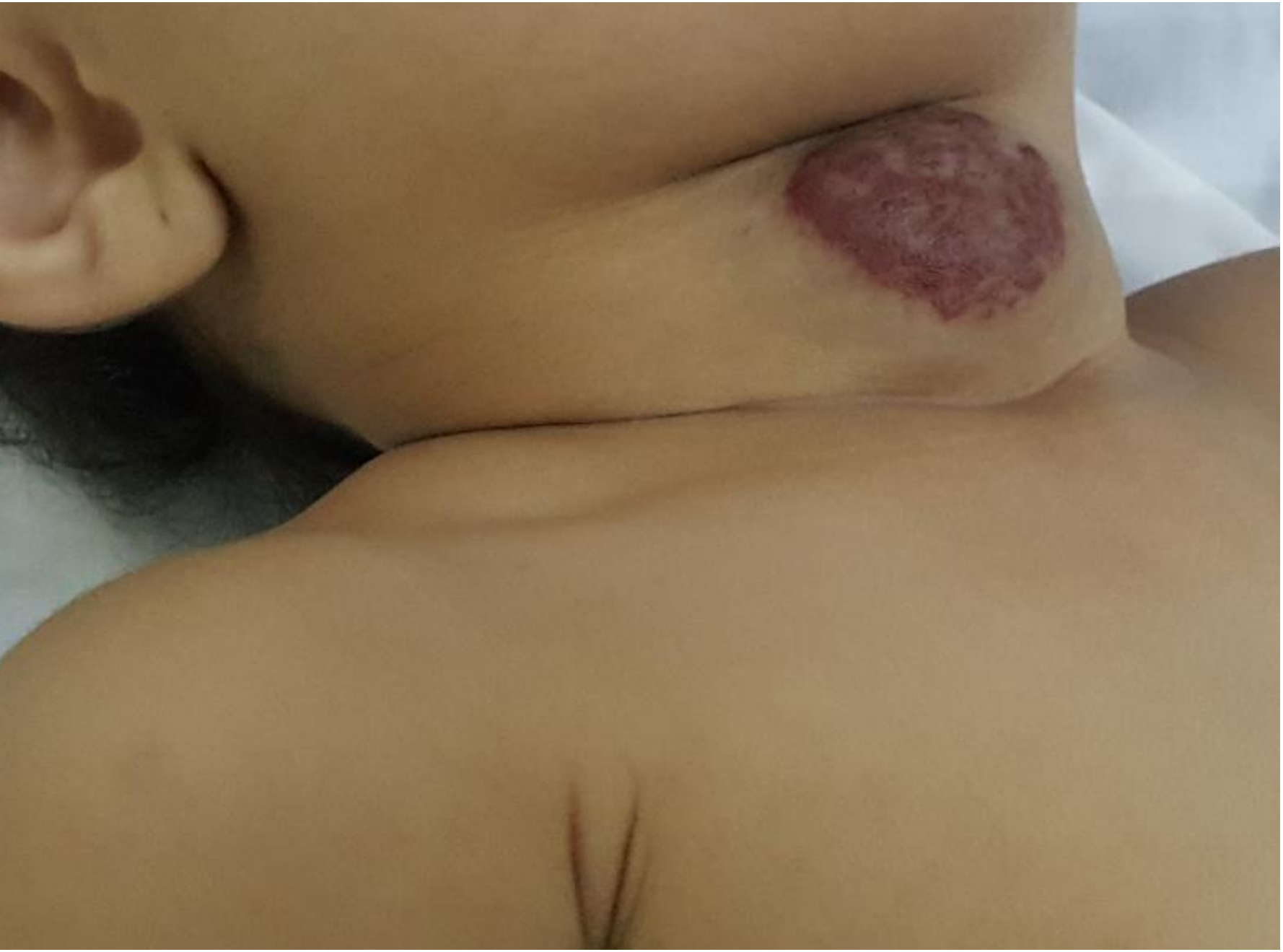












Classification:

In the past, there has been confusion regarding the proper nomenclature for vascular lesions.

1-According to morphology:
(Salmon patch, strawberry hemangioma, port wine stain)
2-According to the diameter of the blood vessel:

- **Capillaries. Thin small channel**
- **Cavernous wide channels**
- **Mixed: cavernous and capillaries**

3- In 1982, Mulliken and Glowacki "biologically classified" the vascular anomalies based on their clinical behavior and endothelial cell characteristics into two groups: hemangiomas and vascular malformations.

It is very important to differentiate between Hemangiomas and Vascular Malformations:

1. They differ in clinical course.
2. They differ in prognosis.
3. They differ in management

Group 1: Hemangioma:

• Tumor like behavior **(HAEM- ANGI- OMA**).

• The most common tumors of the head and neck in infancy and childhood.

•2 phases:

1. Proliferative phase: Starts at 3-4 weeks of age, mast cells will increase in number, playing a role in neoangiogenesis, the lesion expands with rapid growth till the age of one year, then the lesion will stabilize.

2. Involution phase (regression phase): characterized by a decrease in size and fading of color (mottling). Lasts 5-9 years, with time lesions usually disappear completely or remain as small fibro-fatty tissue that can be easily excised.

Hemangiomas consist of young endothelial cells:

- **Plump, active cells with high mitotic activity, high number of mitotic figures indicating division of endothelial cells.**
- **They have receptors to mediate cellular proliferation.**
- **Have mast cells between the endothelial cells.**
- **These cells are considered as embryonic cells with short doubling time.**

Clinical picture of hemangioma

- **Female to male is 3:1.**
- **More common in pre-mature babies.**
- **80% are solitary, 20% are multiple.**
  Most of them (60%) are in the head and neck
- **They are the most common tumors of infancy and childhood, comprising approximately 7% of all benign soft tissue tumors.**

- **Natural history:**
- **Appear or start as small lesions at the age of 3-4 weeks.**
- **Grow rapidly to reach their maximum size at the age of one year.**
- **With time, they usually involutes and disappear completely or become as small fibro fatty skin.**

Anais Brasileiros de Dermatologia

Success in the use of oral propranolol in the treatment of infantile hemangioma in nasal tip – Report of two cases. CarvalhoCosta[ab]Odil Garrido Campos deAndrade[b]Lethícia de CastroPereira[b]Izelda Maria CarvalhoCosta[c]

Treatment of hemangiomas

As they resolves spontaneously, they are usually managed conservatively by expectant observation.

Treatment is indicated when they are complicated.

- **First line of treatment is by systemic steroids or beta blockers (propranolol).**
- **Other methods include LASER or surgery.**

Complications of hemangiomas:

1- Obstruction: hemangioma can grow in the eyelid obstructing the vision leading to amblyopia (lazy eye). They may also obstruct airway or auditory canal.
2-Bleeding.
3- Large vascular anomalies may entrap platelets leading to thrombocytopenia; Kassbach-Merit syndrome.
4-Skeletal distortion.
5-High output heart failure due to multiple hemangiomas.
6-Ulceration
7- Infection.

Group 2: Vascular malformations

- They are structural abnormalities resulting from errors in the morphogenesis of embryonic vessels between 4-10 weeks of gestation.
- Almost always sporadic.
- They appear at birth.
- Incidence in males= females.
- Grow parallel to the child's growth.
- The endothelial cells are normal mature cells with normal turnover rate throughout their natural history.

- Have no receptors for cortisone, no mast cells.
- Do not respond to medical treatment as steroids.
- Can be one of tow types: either high flow or low flow (capillary, venous, lymph or combined).
- Never goes spontaneously.
- It may need treatment if complicated or for cosmesis.

Complications:

1-Erosion of bones leading to fractures.

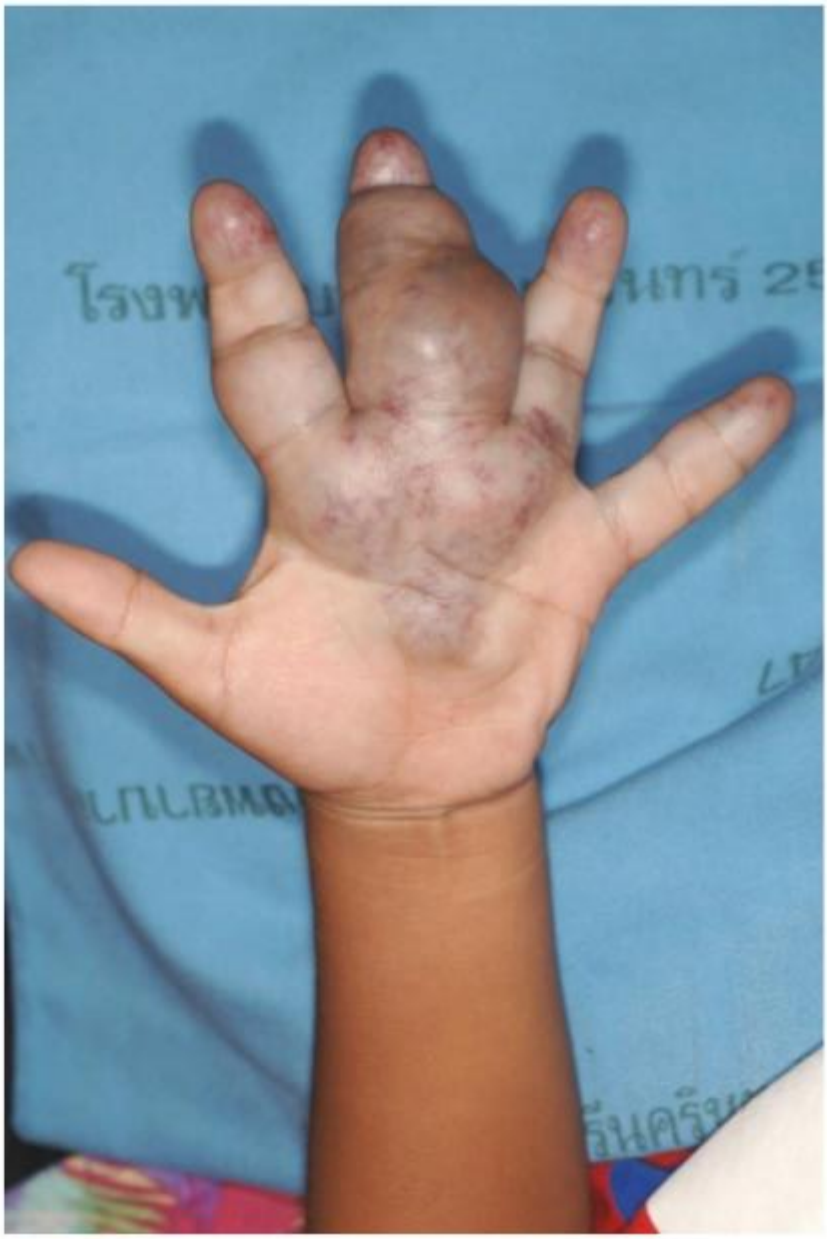
2-Stealing blood from a limb leading to atrophy of distal parts.

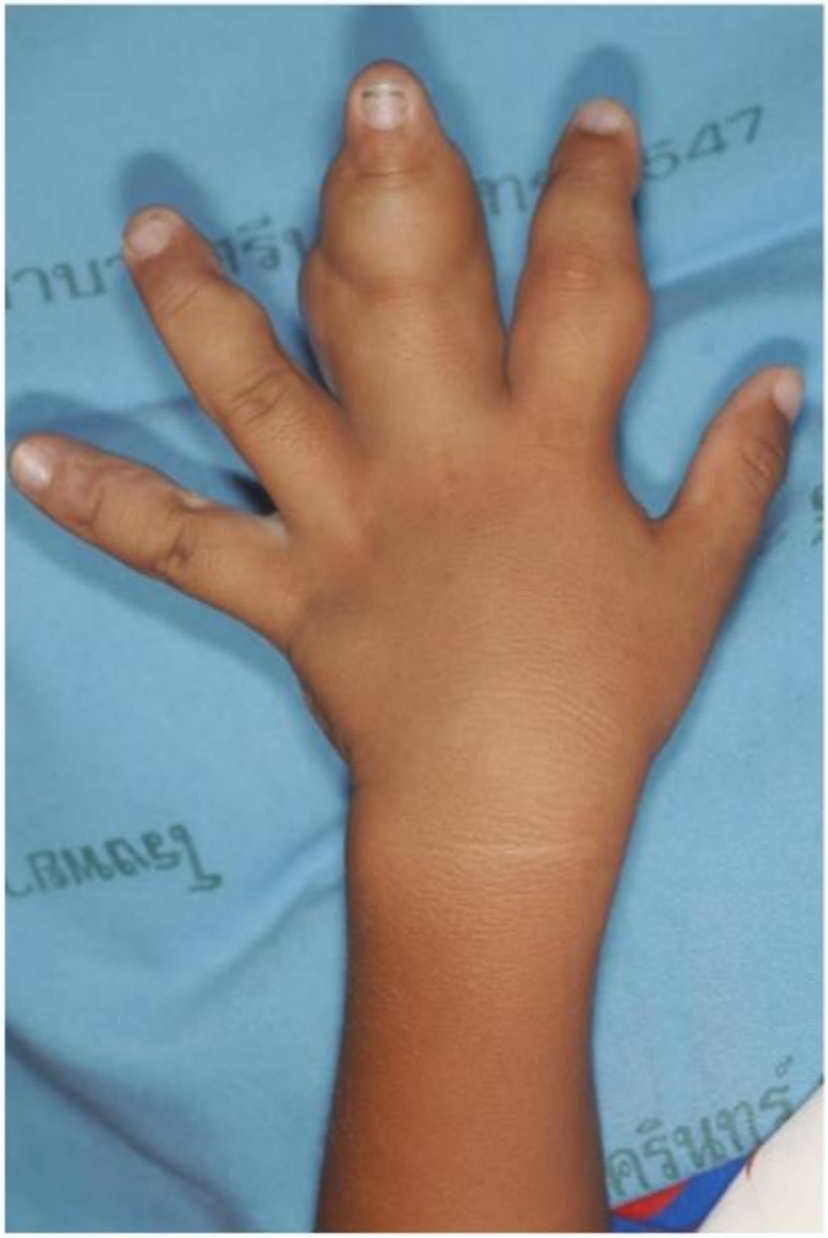
3-Entrapment of platelets.

4-Bleeding.

5. Heart failure.

6. Ulceration or infection.





Port Wine stains:

- They are capillary vascular malformation, not hemangioma.
- At the distribution of trigeminal nerve.
- May be part of Sturge-Weber syndrome with intra-cranial extension

Sturge-Weber syndrome

- Facial capillary malformaion
- Ipsilateral occular and leptomeningeal vascular anomalies
- Neurologic : seizures , hemiparesis , delayed motor and cognitive development
- Ophthalmologic : glaucoma