Original Paper

Facial Hemangiomas Diagnosis

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ABSTRACT Hemangiomas are prominent lesions, circumscribed, red, often lobe, typically found at females (sex ratio of 3:1). The incidence of hemangiomas is 10-12% to infants, preterm infants with a birth weight over 1500 g and to term newborns. Most hemangiomas become distinct lesions during the first 6 weeks of life and proliferate within the first 8-12 months. Frequently hemangiomas are isolated lesions (80%), while 20% of cases have multiple location. Hemangiomas are clinically heterogeneous, defined by the appearance of depth, location and stage of development. In clinical aspect, hemangiomas may take slightly different forms. So in addition of the considered classic hemangiomas can be distinguished four types: ***deep hemangiomas,*** covered by normal skin, known as cavernous hemangiomas; ***macular hemangiomas,*** hemangiomas similar to „wine stain"; elevated hemangiomas, hemangiomas with persistent ***increased blood flow.*** The most common locations of hemangiomas are based on incidence, there are: cephalic extremity (60%); trunk (25%); extremity (15%); extracutaneous areas, such as liver, gastrointestinal tract, larynx, central nervous system, pancreas, thymus, spleen. A common feature of congenital vascular anomalies is the distribution in almost any region of the body in any organ. At patients with multiple hemangiomas, clinical examination and complementary imaging for the diagnosis of visceral lesions in organs derived from the same gill arch structures in the anatomical region which is located hemangiomas. The evolution of modern anesthesia techniques, laser therapy, surgical and medical methods allow effective intervention to treat those lesions considered in recent years as having unacceptable results and allow safe treatment of hemangiomas preventing the occurrence of psychological sequelae of children as a result of this facial hemangiomas.

KEY WORDS *hemangiomas; lesions; vascular; cephalic*

Introduction

Vasoformative lesions are most common tissue malformations of the cranial and cervical regions at the infant and small children. Among the vasoformative lesions the high incidence on general population meets in the hemangiomas framework.

Hemangiomas are prominent lesions, circumscribed, red, often lobe, typically found at females (sex ratio of 3:1 in most studies found in consulted medical literature).

The incidence of hemangiomas is 10-12% to infants, preterm infants with a birth weight over 1500 g and to term newborns.

Amir and Colab (1986) quotes an incidence of 23% in premature infants with birth weight under 1000 g.

Most hemangiomas become distinct lesions during the first 6 weeks of life and proliferate within the first 8-12 months. Frequently hemangiomas are isolated lesions (80%), while 20% of cases have multiple location.

Most common headquarters occurrence and development of hemangiomas are the head and cervical region, followed by the trunk and extremities. Laryngotomy affection may be present up to 50% of cases, in combination with other cervical hemangiomas.

Once with the widespread introduction of modern imagistics methods of diagnostic such as cerebral CT-scan, cerebral MRI or angiography with digital subtraction by catheterization of the entire vascular carotid and vertebral tree, it could develop an integrated plan to deal with hemangiomas, the collaboration between the neurosurgeon , neuroradiolog, pediatric surgeon, plastic surgeon with a starting material basis, and encouraging the obtaining of the optimal results customized to each individual case, with maximum benefits for the patient.

The stage of life where fructification of the genetic premises in the enjoyment of premises genetic should be potential guaranteed is the childhood. In front of a child that has a hemangioma, the family, the child himself and the therapist faced with an amputation of esthetic aspect, with special psychosocial response.

The development in the last decade of invasive methods of active minimally invasive treatment of micro-surgery, laser therapy, and also improving radiochirurgical stereotactic methods Gamma-Knife or LINAC - opened a new perspective on the modern therapeutic capabilities on the effective multimodal approach in terms view of medically and economically effective, but in the same time less aggressive to the patient, with less complications and sequelae of medical and surgical act and with a life quality of the patient unimaginable with a decade ago.

Effective management of hemangiomas will lead to the lower cost of care for patients and will

increase the chance of social inclusion by reducing the disability due to physical and psychological damage caused by the hemangioma.

Clinical Diagnosis

From clinically point of view, superficial hemangiomas are skin lesions prominent red, but they may start as macular lesions, like a telangiectasia area or a white spot. Deep hemangiomas have a blue color under normal skin.

Hemangiomas are clinically heterogeneous, defined by the appearance of depth, location and stage of development.

In clinical aspect, hemangiomas may take slightly different forms. So in addition of the considered classic hemangiomas can be distinguished four types:

deep hemangiomas, covered by normal skin, known as cavernous hemangiomas;

macular hemangiomas, hemangiomas similar to „wine stain";

elevated hemangiomas,

hemangiomas with persistent ***increased blood flow***

Classic, hemangiomas presents an early proliferative phase, slow involution and in most cases, full resolution.

At newborn, hemangiomas may occur.

As the tumor proliferates, takes the most recognized form: bright red, slightly elevated, incompressible plate. In rare cases, tumors may occur as the total raised at birth, and this congenital hemangiomas are quickly reabsorbed, leaving often atrophic pronounced signs on skin.

Because hemangiomas are so heterogeneous in appearance, location growth characteristics and potential complications, doctors need accurate methods to stratify them into categories of low risk, medium and large. There are five major factors that help to determine the prognosis and the therapeutic plan. These factors are age, location, total number of hemangiomas, hemangioma type, or presence and or the nature of dermal involvement .

Lips, tongue and buccal mucosa are the most common locations of the hemangiomas manifest. Damaged lips causes a cosmetics deformation, but also contributes to speech dysfunction and swallowing the mass effect. Involving language often determines dysarthria or dysphagia, but can compromise also breathing.

The most common locations of hemangiomas are based on incidence, there are:

- cephalic extremity (60%);
- trunk (25%);
- extremity (15%);
- extracutaneous areas, such as liver, gastrointestinal tract, larynx, central nervous system, pancreas, thymus, spleen.

Most hemangiomas are located at the skin level, especially in cervico-facial region. Often without clinical expression, hemangiomas does not affect the functionality of the region that they occupy.

Facial Hemangiomas tend to evolve as solitary lesions with spontaneous onset and prevalence in females compared to males of approximately 4:1. There are unusual cases in which patients may have four or more cutaneous hemangiomas, situations where we must consider the existence of visceral hemangiomas. Clinical diagnosis come up in all cases by anamnesis and physical examination.

Superficial hemangiomas appear as a red illuminated macular lesions or papular lesions with well defined edges.

Deep hemangiomas have bluish color and appear as subcutaneous masses with uncertain edges. At any evolutionary time, hemangiomas may contain characteristics of superficial and deep hemangiomas, the reason why they are called complex hemangiomas.

Hemangioma evolve over time. Thus, from a red point at the birth may turn in time into spongy excrescence which may even reach 7-8 cm in diameter.

The shape and consistency of hemangiomas may change over time. Most remain well circumscribed, and over 80% are solitary, focal lesions.

After a period of evolution, hemangiomas not increase, it's size is stationary, then enter into a resolution process. Over time, the hemangioma is no longer visible.

Approximately half of hemangiomas disappear by the age of 5 years and the percentage climbs to 90% at 10 years. Although in some cases disappears and hyperpigmentation induced by the tumor, some children are still showing signs of hemangiomas in the form of stains spots on the tegument level.

The concept of "hemangioma syndrome" has received increased attention in recent years because the structural associated anomalies are almost invariably associated with more structural than with the localized hemangiomas.

The most common syndromes that include occurrence of hemangiomas or vascular malformations are Kasabach-Merritt phenomenon, Parkes-Weber syndrome, Proteus syndrome,

Sturge-Weber syndrome (SWS), Maffucci syndrome, Blue Rubber syndrome (Blue rubber bleb Naevus syndrome).

Evolution of hemangioma is characterized by three distinct stages:

- proliferative stage;;
- plateau stage;
- involutive stage

Proliferation occurs in the first 12 months of life and rarely extends to 18 months of life. The growth model varies both in timing and in severity of injuries to the other in case of multiple hemangiomas.

In general, we identify a bimodal growth: after a proliferative phase that lasts several months following a subsequent growth phase up to 4-6 months.

Although the sequential behavior of hemangiomas is well known, it is difficult to predict the phase of growth and involution of individual lesions. The diagnosis of hemangioma is usually done by anamnesis and clinical findings. Sometimes it can be difficult to determine, especially in patients with large congenital lesions and liver lesions.

Imagistic studies are useful in achieving the differential diagnosis between vascular malformation, hemangiomas and / or other aggressive neoplastic process.

Paraclinical diagnosis

Clinical diagnosis of hemangiomas generally arises from making a thorough physical examination which considers the shape, consistency and character delineation and possible invasive lesion, with subsequent deterioration of vital functions. In most cases no further investigation is needed more, but achieving the differential diagnosis of hemangiomas is imperative to rule out other diseases, with potentially more serious.

The most common diseases that come under discussion in the differential diagnosis is angiosarcoma, teratoma, arteriovenous malformations, various diffuse hemangiomatoza, neonatal rhabdomyosarcoma.

Recent studies suggest that patients should be investigated extensively to determine the risk of development and proliferation of hemangioma. For this purpose, laboratory measurements indicate, considering the magnitude endothelial growth factor and fibroblast growth factors.

In some cases, hemangiomas are likely to involve parenchymal or vascular malformations reason for requiring additional imaging: computer tomography (CT) and MRI, with or without administration of contrast agent to delineate the extension of cutaneous hemangiomas and to determine whether other hemangiomas and other tumors disseminated in the body

Ultrasound may be useful, especially in differentiating hemangiomas involving other layers of skin changes such as cysts or changes in lymph nodes.

Normal radiographs are not indicated unless there is a hemangioma or moving the airway obstruction.

Interclinic route

All signs present at birth on the skin surface must be evaluated by a pediatrician to determine their character and to assess whether or not they require specialized treatment.

Hemangiomas with particular locations, such as eyes, larynx, or segments of the digestive tract can cause additional problems and should be appropriately treated early, before complications occur, so that an ophthalmologist is recommended.

Evaluation of children with hemangiomas should be monitored periodically. If changes occur between controls, ulcers, bleeding, excessive increases or changes in consistency hemangioma, recommended immediate surgery.

The current trend is multidisciplinary assessment team hemangiomas: a pediatrician, surgeon, radiologist, interventional radiology specialist, oncologist, psychiatrist or psychotherapist, medical and aesthetic plastic surgery, ophthalmologist, ENT doctor.

Early complications

Most hemangiomas regress slowly and completely without complications or sequelae, but in some cases the associated complications, especially in the proliferative phase. Approximately 10-20% of hemangiomas alarming signs for specific complications. The most important complications that may occur during the life of a hemangioma is ulceration, bleeding, infection, obstruction (visual axis, canal, airways), congestive heart failure, skeletal deformities, aesthetic deformities and permanent scars.

Complications associated with hemangiomas:

- bleeding, especially if the hemangioma is traumatized;
- dysphagia, dyspnea (in the digestive or respiratory locations);
- Upper airway obstruction;
- secondary infection;
- Skin changes (consistency, appearance, or texture of the skin);
- Visual disturbances (strabismus, amblyopia);
- ulcer (in 5-10% of cases);

• psycho-emotional disorders where the hemangioma is large and visible.

Early results of facial hemangiomas

Distribution of patients according to clinical appearance of hemangiomas:

• After the emergence

In 71 of the cases analyzed was congenital hemangioma, the remaining 23 cases it appeared later in life.Analysis of the distribution of patients according to the time of the hemangioma shows similar results to those cited in the literature.

• After Expansion

Most hemangiomas are diagnosed interested in both skin and deep structures (62 cases), involving strict deeper structures being present in only 9 cases.

•The size of hemangioma

In patients enrolled in most hemangiomas had a lot of between 2-4 cm in diameter. Hemangioma with extension periorificială had encountered less than 2 cm in diameter over 4 cm and the majority had a bag of various sizes hemangioma.

• After skin involving

Impaired skin was present in 85 of the patients in group diagnosed with superficial and mixed hemangiomas.

Structure lot depending on skin damage secondary to the presence of facial hemangiomas show a rate of 90.43% of patients, a percentage that is significantly correlated with mixed type of tumor formation.

Hemangiomas were diagnosed unique in 77 cases (81.81%) and multiple in the remaining 17 cases (18.19%).

• ***After the anatomical location of hemangiomas***

Most diagnosed hemangiomas showed a segmental distribution. According to studies by Haggstrom, identifies four facial segments:- frontotemporal (S1), Jaw (S2), mandibular (S3); Frontonazal (S4).

Not uncommonly, hemangiomas are distributed in regions SI and S4, S2 and S3 were the most frequently involved. These associations are not fully understood in terms of clinical diagnosis. In general, the presence of isolated segmental facial hemangiomas is identified in one third of patients. The presence of multiple hemangioma lesions are accompanied by visceral organs derived from the same area where the gill arch is located hemangiomas.

• After anatomical regions concerned

Most hemangiomas are diagnosed interested in two or more regions of facial anatomy (78 cases). Mandibular region was most affected (32 cases), followed by zygomatic region (29 cases) and frontal (24 cases).

• ***By involving vascular***

Most patients (94.68%) had vascular hemangioma with a single component which co-related to a branch of the trigeminal nerve.

Skin layer was interested in most cases (90.43%), muscle and bone layers are affected only in patients with deep and mixed hemangiomas (10 cases).

Facial nerve was interested mainly in patients with hemangiomas of the parotid gland and external ear canal and V2 of the trigeminal nerve ram ear and parotid gland in the tests.

Most hemangiomas had a vascular component alone, two or more vascular components were detected in 5 patients.

Conclusions

1. Considered very rare disease in adult pathology, hemangiomas are entities legally controversial pathogenic, clinical and therapeutic. The Nosology is also questionable, with views to the effect that hemangiomas are defined as vascular malformations.

2. Hemangiomas are characterized by an accelerated turnover of endothelial cells, the origin is associated with decreased placental angioblasts or endothelial progeny cells lose their ability to clone a specific medium containing cytokines and estrogens (Barneth 2007). Placental hemangioma growth theory has its origin in the work of North (2002) demonstrated that the histological and molecular markers unique placental tissue (GLUT 1, merozina, YI Lewis and receiver 2) were also present in infantile hemangiomas

3. The prevalence in the facial regions of Romania's population presents a unique congenital cavernous hemangioma Joint multiregional extension. Any criterion for classification of hemangiomas must take into account and altered embryonic vascular origin. A common feature of congenital vascular anomalies is the distribution in almost any region of the body in any organ. Another feature is given the possibility of developing into unique forms, multiple, or disseminated, which may vary as a way of growing, infiltrating the well-defined profiles to diffuse.

4. At patients with multiple hemangiomas, clinical examination and complementary imaging for the diagnosis of visceral lesions in organs derived from the same gill arch structures in the anatomical region which is located hemangiomas.

5. The evolution of modern anesthesia techniques, laser therapy, surgical and medical methods allow effective intervention to treat those

lesions considered in recent years as having unacceptable results and allow safe treatment of hemangiomas preventing the occurrence of psychological sequelae of children as a result of this facial hemangiomas

6. Major desideratum must be represented by treating facial hemangioma maintain the concept of facial beauty. Collaborative efforts of surgeons, radiologists, vascular biologists are necessary for the isolation of new therapeutic targets and effective surgical approaches, although clinical and basic research in the area hemangiomas developed dramatically in recent decades.

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