Imaging evaluation and endovascular therapy of carotidian territory angiomas

INTRODUCTION

Vasoformative lesions are most common malformations of the cranial and cervical tissue in infants and small children. Among the high incidence of vasoformative injuries of general population meets the hemangiomas.

Hemangiomas are prominent lesions, circumscribed, red, often lobe, typically found in females (sex ratio of 3:1 in most studies found in medical literature) (4).

Is 10-12% incidence of hemangiomas in infants, preterm infants with a birth weight over 1500 g and term newborns. Amir and colaborators (1986) quotes an incidence of 23% in premature infants with birth weight below 1000 g (4).

Most hemangiomas are distinct lesions during the first six weeks of life and proliferate within the first 8-12 months. Hemangiomas are often isolated lesions (80%), while 20% of cases have multiple location. Offices most common occurrence and development of hemangiomas are the head and neck region, followed by the trunk and extremities. Larynx-trachea impairment may be present up to 50% of cases, in combination with other cranial hemangiomas.

Viewed medical literature describes many scientific controversies concerning the natural progression of hemangiomas, characterized by a lack of consensus with regard to be managed. Lack of consistency of the findings of the literature on behavior therapy for hemangiomas derive, in general, diagnostic confusion between hemangiomas and vascular malformations, and absence of reliable data on the natural evolution of the disease. The classic articles, the term capillary hemangioma described fine porto-portal malformation, and the terms of nevi and hemangiomas cavernous hemangioma describe what define true today.

The first major step in clarifying the nomenclature of the hemangioma was performed by Mulliken et al. who imagined a biological classification scheme based on different clinical developments and endothelial proliferative activity of hemangiomas versus vascular malformations. Hemangiomas, often called juvenile or infantile hemangiomas for clarity, are benign tumors characterized by a phase of rapid proliferation and early during the first year of life occur endothelial hyperplasia followed by an involution phase that may be spread over a variable number of years.

Mulliken-Glowaki Classification (1982) defines a systematic difference between hemangiomas and vascular malformations .The scheme is based on histopathological classification has been improved by immunohistochemical characterization of hemangiomas for each developmental phase

Modern techniques of anesthesia, laser methods, medical treatment and surgical intervention have enabled effective treatment for residual lesions so that the psychological impact is minimized. Consulted literature shows that 25-40% of hemangiomas are evolving unacceptable cosmetic effects, which can however be improved by medical intervention and / or surgery.

Despite the unprecedented development of facial hemangiomas therapeutic approach, especially after the adoption of international classification described by Mulliken and Glowacki, the treatment of these diseases is still a pioneer.

Research literature has allowed us to determine that approximately 60% of published studies are descriptions of the event and not extensive clinical trials. The remaining 6% is review study investigated retrospective studies 5% are
dedicated prospective investigations, and 1% fundamental science.

Continued progress in identifying genetic contributions and molecular abnormalities involved in vascular development opens a new era in clinical investigation and their treatment. Animal models allow the development of hemangiomas imagining, developing, validating new therapeutic targets. Hemangiomas importance in medical practice is absolutely necessary to initiate new directions for clinical and experimental investigation. Recruitment of specialists in several fields of medical research is an ongoing goal. Colleges in vascular biology and embryology are undesirable, because research has shown embryonic origin and biological changes underlying the development of hemangiomas. Multidisciplinary collaboration with hematologists, oncologists, and dermatologists began by establishing new therapeutic protocols and the development of experimental drug trials.

On the other hand, interventional radiology is a wide range of exploration and collaboration to solve optimal hemangiomas, with or without surgical intervention using embolization and sclerotherapy. Multidisciplinary collaboration with hematologists, oncologists, and dermatologists began by establishing new therapeutic protocols and the development of experimental drug trials.

New techniques sclerotherapeutical agents used in combination, OK-432 and Onyx apparently improved the rate of stabilization of hemangiomas. In this prospective study on new treatment and interventional treatment options are badly needed, including laser techniques. The use of adjuvant chemotherapy in the management of aggressive lesions seems to be a viable therapeutic option but they require extensive clinical trials. In conclusion, surgical excision and reconstruction in the treatment of hemangiomas methods remain elective. Though the actual surgery is not always ideal for permanent or extensive injuries, massive, due to the high rate of postoperative recurrency and functional deficits. Molecular and genetic characteristics of these lesions allow the development of new therapeutic strategies. Collaborative efforts of surgeons, radiologists, vascular biologists are necessary for the isolation of new therapeutic targets and effective surgical approaches, the basic and clinical research in the area and developed hemangiomas dramatically in recent decades.

GENERAL PART

Hemangiomas are benign tumors of vascular endothelium. The most common infantile hemangiomas are present in approximately 50% of cases characterized by the presence at birth followed by a period of rapid growth in childhood and a slow involution over the next 2-4 years. Congenital hemangiomas are fully formed at birth and then progressively involute. Clinical subtypes of hemangiomas are superficial - 50%, 15%- deep, mixed - 25-35%. Multiple lesions are found in 15-30% of cases. There is a clinical form describing multiple small lesions with diameters ranging from 1-2 cm strip called neonatal hemangiomatosis which usually involute after two years and has an increased risk of visceral damage.

Epidemiology

The incidence is 1-2% in neonates and 10 ¬ 12% to a year, mostly females being 3:1, especially in premature babies. 50% of injuries occur at cervicofacial region.

Evolution

After an initial growth period, all infantile hemangiomas involute spontaneously virtually. Some hemangiomas resolve without scarring, but a significant number involuted residual telangiectasias, atrophy, hypopigmentation and white scarring. This evolution should be carefully considered before any therapeutic decision. Clinically speaking, hemangiomas are heterogeneous and have dimensions ranging from few mm to several cm, occupying large areas of the body surface.

Location of hemangiomas has major effects on the appearance of complications, involution and psychosocial impact. Residual size, rate of spontaneous involution and involution results are difficult to assess especially in
Therapy

Approach therapeutic reassessment during late proliferative and involutive phase is imperative. Some absolute indications of the treatment include hemangiomas that affect vision, upper airway, larynx, nasal pyramid or the external acoustic region, Kasabach-Merritt syndrome, hepatic hemangiomatosis.

Treatment relative indications of hemangiomas concerns that a potential risk of permanent disfigurement or long-term psychological effects. These locations include nasal hemangiomas, perioral, ear and voluminous hemangioma characterized by a dermal component with or without prominent subcutaneous component. Choice of treatment must balance between the risk factors mentioned above and the benefits of a particular therapeutic methods. Where surgical excision and radiotherapy are the only possible therapeutic methods, clinical observation is preferred because the clinical results of treatment are worse than those obtained by naively involution. With new therapeutic methods, comparative risk-benefit assessment is a necessary component in the therapeutic decision. Multidisciplinary approach in hemangiomas include, in particular in severe cases, the dermatologist, a surgeon, other specialties, surgical, and social and psychological support services. Therapeutic approach of hemangiomas should be individualized according to lesion size, location, presence of complications, age of patient, the rate of growth or involution at the time of evaluation. Given these factors, the potential risk of treatment should be carefully weighed against potential benefits. A number of hemangiomas require no treatment, but if you choose this option, the patient should be reevaluated periodically, especially during the growing period and less frequently once growth has stopped to act involutional phase.

1. Major Objectives of treatment

- Preventing or stopping any evolutionary developments that interfere with physiology;
- Minimize the psychosocial stress caused by this hemangiomas, both patients and family;
- Avoid aggressive processes to execute potentially scarring if hemangiomas have an excellent prognosis without therapy;

2. General Information about treatment

- life-threatening hemangiomas and function of some devices and systems (Kasabach-Merritt syndrome, coagulopathy);
- hemangiomas developed in the anatomical regions which evolve with scarring and deformity (nose, lips, ears);
- large facial hemangiomas, especially with prominent dermal component that leaves probably permanent scarring;
- smaller hemangiomas developed in exposed areas such as face, hands, may be considered in case of treatment which not evolute with the formation of scarring or other significant side effects;
- ulceration;
- Pedunculated hemangiomas.

3. Therapeutic Modalities

The type of treatment varies depending on the combination of the following factors:
- regional anatomical location;
- cutaneous location (skin, subcutaneous mixed);
- The size and extent of injury;
- evolutionary phase of the lesion: growth, involution plateau, ';
- Assessment of functional alteration-doctor experience in performing certain therapeutic maneuvers (laser therapy, surgical excision);
- Ability to carry out therapeutic methods (laser therapy, embolization);
- The level of parental interest.

4. Treatment

There are several treatment methods that can be used only in combination or associated with surgery
- Low-risk hemangiomas (eg, small hemangiomas that do not cause permanent disfigurement and functional
alterations)

**Medical**
- Corticosteroids intralesional (triamcinolone 10-40 mg / ml);
- Class I topical corticosteroids;
- Obstruction-loaded.

**Surgery** - laser therapy - Cryosurgery
- Surgical excisions (especially for small hemangiomas, Pedunculated)
  - hemangiomas with increased risk (eg prognosis with a large hemangioma decreased depending on location extracutaneous involving structures, permanent disfigurement and causes functional alterations)

**Medical**
- Systemic Corticosteroids (indicate the growth phase: prednisone 2-4 mg / kg / day in single morning dose or in divided doses)
- Local corticosteroids (triamcinolone 10-40 mg / ml, sometimes associated with dexamethasone 4 mg / ml)
- Subcutaneous interferon alfa (initial dose 1000. U1 / sqm / day, and if tolerated the dose can be increased to 3000. U1 / sqm / day and indicate if corticorezistentei)

**Combination Therapy - Surgical**
- Laser therapy
- Early surgical excision (particularly for nasal and periorbital hemangiomas)
- Corticosteroid therapy combined laser + excision
- Cryosurgery
- One other method - may be used only in exceptional cases in which previous therapies are not effective
- Cyclophosphamide
- Embolization
- Radiotherapy
- Ketotifen
- Patient Education angiogenesis inhibitors

- Presentation of the natural evolution of the disease in the absence of treatment
- Presentation based comparative photographs of cases with / without treatment
- Presentation of Divine therapeutic op risks, benefits and potential alternatives
- If the hemangioma is in exposed areas (eg. Girl) anticipatory guidance for understanding and acceptance by the patient and family outcomes

### 6. Evolution

Requires patient monitoring and reassessment to 1-3-6-12 months. Presentation materials for hemangiomas in a language accessible to parents or carers to understand the developmental stages, risks, benefits and side effects of choosing one of behavior: observation method the actual protective or therapeutic method.

Therapeutic modalities for skin hemangiomas in children are: corticosteroids, interferon, bleomycin, radiation, laser therapy, topical treatment, electromioterapia, electrocautery, surgical treatment.

Selection of treatment method between conventional surgery, embolization or radiosurgery is determined by the particular case. Sometimes it is useful to combine these methods of treatment. In patients younger more radical treatment is recommended, especially in polar locations. Repetitive bleedings are generally more likely than an initial rupture.

Treatment of complicated hemangiomas consist of pharmacotherapy (steroids saddle interferon) or surgery (laser ablation therapy or surgical excision surgically -). Corticosteroids seem to be effective early in the proliferative lesions (Hawkins et al, 1984). The usual dose is 2-3 mg prednisone / kg / day. Lesions respond during the few hours or days. Lesions that do not respond within 7 days are considered "unresponsive" (103).

Intralesional injections of triamcinolone acetate or betamethasone were reported as effective (Slon et al, 1985). Favorable response rate to systemic or intralesional corticosteroids administration is 30-60% (Slon et al, 1989).

Modern treatment of hemangiomas that are at risk of complications is the yellow light laser surgery. This can destroy the hemangioma neoformation vessels without affecting the integrity of the skin. Some doctors prefer to combine laser treatment with corticosteroid injections for a maximum therapeutic efficiency.

### Laser photocoagulation
Many authors argue that early treatment of hemangiomas with lasers, to avoid rapid growth has some advantages. This technique is based on the theory of the pathogenesis of hemangioma, hemangioma that each begins to develop as a localized tumor cell nest, and by taking the ideal treatment must be destroyed before the tumor grows. Question is whether small hemangiomas growth can be prevented by laser treatment performed at an early age or not. Critics points out that superficial tumors of small size, with the most favorable prognosis aesthetically hemangiomas are most susceptible to laser therapy. More practical is the fact that, due to cosmetic reasons, most parents want to remove even the smallest lesions. Many parents, patients and doctors early settlement welcomes hemangioma, and do not want to wait for many years to spontaneous tumor regression.

Laser Treatment of hemangiomas is still controversial, but worthy of consideration because of recent advances in the field of lasers with bright yellow spot - flashlamp-pumped pulsed dye laser (FPPDL), the copper vapor laser and laser light spot color with argon ions. As a direct result of penetration up to 1 mm of these long-wave lasers, selective thermoagulation hemangioma is a reality.

The patient with a small and relatively flat hemangioma, noted earlier, can be treated in the dressing room, only contact with local anesthesia (anesthetic gels) and local cooling seconds to -2 ° C. when used with laser light yellow spot is minimal risk of scarring. Hemangiomas are sensitive to laser treatment following .

• are flat or raised;
• remain unchanged even after the steroids.
• it is in a sensitive region in terms of cosmetic, such as the nose, eyelids, eyebrows and mouth;
• have retired, but still have a residual telangiectasia.

Currently the most widely used laser in the treatment of hemangiomas is "flash-lamp-pumped pulsed dye laser which, due to its length of 585 nm wavelength allows deeper penetration than other lasers, and because of the absorption spectrum of oxyhemoglobin allows "selective photothermolysis" of hemangiomas.

Indications for surgical treatment of hemangiomas is difficult to define. If the pedicled tumors produce architecture nasal deformities or corneal exposure, is considered for prevention of ulceration while waiting tissue regression indicated the reduction of hemangioma. The decision to reduce the tumor volume is justified in the case of healed ulcers or masses. Removal is better if surgery is complete tumor regression and not partial. Excision is performed at the age of 4 to 5 years before the little girl to attend school and be subjected to psychological pressure from colleagues.

Cryotherapy

Cryotherapy does not have a place in the treatment of external hemangiomas, but may have an important role in controlling excessive blood loss from the deep invasive intraoral hemangiomas.

Selective embolization

Embolization therapy has proven to be beneficial in some cases of congestive heart failure secondary to impaired liver hemangiomas. If the diagnosis is certain visceral hemangioma and treatment with steroids offers no improvement within two weeks of his administration, should be considered embolic therapy. Like other invasive techniques, embolization is not without risks (eg, kidney infarction, pulmonary embolism, sepsis, etc.) and should be used with care. Embolization often serve as a preparatory for subsequent excision intervention. Can be used for embolization gelfoam, polymers that solidify in contact with blood or coils sites. Radical surgery is generally recommended to be taken at one week after embolization. Permanent neurological deficits generally occur only at 2-3% after embolization.

Combination therapy

Fortunately rare and unique cases of massive hemangiomas and a quick course to extend that limit important functions and life-threatening, are very difficult to treat. Enjolras and his colleagues present a well-documented report on the cases of 25 patients presenting with life-threatening hemangiomas. Steroids have been the basic treatment \((n = 23)\), followed by selective arterial embolization where steroids have not proven to be effective, radiation skin, liver irradiation, and for prolonged intubation for laryngeal hemangioma \((6 of 12 children with respiratory disease)\).
Embolization is defined as a therapeutic method for percutaneous introduction of various substances in the circulatory system in order to prevent vascular occlusion, hemorrhage, devitalization certain structures, tumors, organs through vascular occlusion or decreased blood flow for an arteriovenous malformation.

In general, hemangiomas are preferred for making therapeutic embolization after the initial angiography. In our study, we performed tumor vascularization before and after embolization, the benefit of surgical and histological data. As agents of embolization microspheres were used mainly in diameter from 200-800, but consider that 600 micrometers spheres are effective. We used several hundred microspheres, all pedicles were embolized and catheterised.

Embolization was performed by a team of specialists in interventional radiology. Patients were previously informed about the possible application of embolization occurrence of side effects that could temporarily affect the quality of life.

Embolization was performed in 56 cases. Mean age at which to practice embolization was 34 years. In 11 cases embolization was used as a preoperative method for reducing the risk of intraoperative bleeding.

Embolization was performed under general anesthesia after cerebral angiography that included superselective injections to confirm increased vascularization defines lesion and angiographic anatomy. Were evaluated simultaneously volume and arterial lesions.

In 21 cases the agents were administered bolus anticoagulants (2000-3000 U heparin). His practice transfemoral approach and guiding catheter was positioned in the common carotid artery.

Embolization therapy is a method in which extremely fine vary between patient safety and efficacy of the technique. For these reasons we believe that all those involved (radiologist, surgeon, patient and family) must know a priori embolotomy risks and benefits.

Embolization has been therapeutic and has three objectives:
- Co-therapy (preoperative, adjuvant chemotherapy or radiotherapy);
- Clean (if aneurism definitive treatment, arteriovenous fistulas, arteriovenous malformations and traumatic bleeding);
- Palliative (symptom remission for massive hemangiomas or massive stroke).

Medical indications of embolization associated vascular abnormalities (arteriovenous malformations, venous malformations, lymphatic malformations, hemangiomas), hemorrhage (pseudoaneurisms, trauma, epistaxis, hemoptysis), other diseases (tumors, varicocele, ablation of organs).

In my experience, we believe that these goals must be met:
- clinical assessment of patients to which embolization is beneficial;
- Pre-embolization imaging studies appropriate and / or location of hemangioma angiographic and knowledge;
- Determining the precise dimensions of the vessel / vessels requiring embolize;
- The correct evaluation of anatomy preoperative collateral circulation,
- Correct selection of the most appropriate agent embolization;
- Use of modern angiographic equipment, performance, multi-interventional diagnostic and therapeutic means to facilitate the safe addressed hemangioma;
- Operators experienced, trained to use equipment, evaluation and hemangioma type choosing the most effective technical methods, in perfect conditions for patient safety and efficacy;
- embolization was achieved in most cases by lateral positioning of the tube allowing intubation slight majority of the external carotid artery branches. Fluoroscopic anterior-posterior orientation is used only in certain circumstances, eg if superselective intubation sphenopalatine artery branches, sometimes easier to visualize the anterior-posterior approach.

Embolization should be done with extreme caution to avoid reflux of embolization material. In the present study was performed when preoperative embolization and mandibular parotid gland lesions in patients in whom blood flow was limited. Involution was accelerated, allowing surgical excision, after embolization. This method is used to treat life-threatening hemangiomas that medication was ineffective or reducing the weight of hemangioma was imposed before the anticipated response to drug therapy such as heart failure.

To achieve a significant clinical response consider necessary embolization at least 70% of pressure substitute. Strawberry will decrease significantly in size within 2-4 days after which it will stabilize and will be a regression toward involution.

We met the following side effects of embolization:
- Pain - normally absent but can be found if included embolization and normal tissues outside the hemangioma itself.
- Effect Carter (sump effect) - arterio-arterial anastomoses are open intracranial circulation of infants and children.
Increased vascularization hemangiomas become effective for maintaining a flow sump to lesion making invisible anastomosis during embolization of branches at ACE. As the flow progresses and intralesional embolization decreases may occur in countercurrent flow through the anastomosis. For this reason, fluoroscopic control and angiography are necessary.

Hypervolume in large hemangiomas represent a technical difficulty because it requires multiple artery embolization and more nutritious injections with contrast agent particles.

The macrocatheter and the microcatheter were extracted in a synchronous manner, which reduced the risk of emergence of possible side effects. Embolization therapy in vascular pathology facial microcatheters use a coaxial embolization materials and extremely small size, making it an effective and relatively safe therapeutic procedure.

Preoperative embolization reduces the risk of intraoperative bleeding, shorter operative time and decreased mortality and morbidity. Moreover, intraoperative bleeding is difficult to complete excision of the lesion, increasing the default risk of recurrence, which justifies making preoperative embotherapy.

In the embolization group included in the study was performed mainly in patients who experienced spontaneous bleeding or functional abnormalities due to extreme size of the hemangioma or particular anatomical location. In two cases was performed because congestive heart insufficiency.

Embolization was achieved by using particles to block the process is most associated hemangioma vessels. In six cases was performed because congestive heart insufficiency. bleeding or functional abnormalities due to extreme size of the hemangioma or particular anatomical location. In two default risk of recurrence, which justifies making preoperative embolotherapy.

Depending on the localization of hemangiomas have used a variety of embolization agents, but in patients with mixed hemangiomas is indicated to use microspheres improve the aesthetic outcome post-therapy. Each embolization agent has positive and negative characteristics, which is why the process should be aware of the risks and benefits of their use, so choose the most effective agent for each hemangioma.

1.1. Complications of embolization.

Risk factors of vascular interventional radiology procedures (37): thrombocytopenia, anticoagulant medication, liver disease, malignant hypertension, history hemoraagică diathesis, malnutrition, haematological malignancies, splenomegaly, DIC, some chemotherapeutic agents. In our study the risk factors for embolization were transcatheter adjacent tissue ischemia and failure of the method. In most cases ischemia could be minimized by careful placement of the material embolize.

Among the side effects of embolization have met: the site of the previous puncture artery occlusion, hematoma at punction; effects allergic to contrast material, possible transient neurological deficits such as blindness, hemiplegia, paralysis, nerve, skull base sensory deficits. In four cases it was proposed postembolization syndrome, which started 24 hours after surgery, patients presenting fever, retching, vomiting and pain localized. Symptomatic treatment included administration of antipyretics, antiemetics and analgesics, with favorable effects. During embolization ascending pharyngeal artery one patient experienced a fit of coughing.

Cervicofacial hemangiomas are often approached by more than one therapeutic method. This happens when treatment is thought to begin, for example, partial embolization and then microsurgery or radio-surgery, or in a random sequence or necessity, in case of failure considered a treatment method or device a rewarding life-threatening complications to the patient.

Studies published in the literature on multimodal treatment of cervicofacial hemangiomas, although few in number, have mixed data, taking into account only included cases and how to include them so that the statistical significance of how the inclusion of patients in a way treatment becomes difficult to assess.

On the other hand the literature shows more individual cases of diagnosis and treatment of cervicofacial hemangiomas. This does not allow development of a uniform method, the therapeutic principles, generally accepted, universal cervicofacial hemangiomas. Thus, there are no specific rules for inclusion of a patient in a treatment method based on quantifiable elements or multimodal approach to establish supremacy over other therapeutic methods. This situation is exacerbated by the infinite variability of shape, size, location and angio-architecture hemangiomas who make the effort of comparative risk assessment of various methods of treatment often seem useless (1).

Multimodal treatment should be taken into account in the first stage of the treatment plan, immediately after diagnosis. The advantages of each method of treatment should be weighed against the risks of immediate or delayed complications or repetitive bleedings that could endanger the child's life, his neurological or psychological status, this sense that any patient not to be offered a partial treatment or encumbered by undue risks.

Also, due to the inaccessibility of certain methods treatment in some areas of the country, the patient is given only one way to treat, thus exposing them to risks of an inadequate approach. Although generalizations are generally unconstructive, multimodal treatment proves to be most effective in cases with large lesions with multiple locations and possibly threatening the sensitive development of craniofacial regions.
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 stems from the works of North (2002) showed that the histological and molecular markers unique placental tissue (GLUT 1, merozine, Lewis Y and receiver 2) were present in infantile hemangiomas.

3. The prevalence in the facial regions of Romania's population presents a unique congenital cavernous hemangioma joint multiregional extension.

4. Any criterion for classification of hemangiomas should consider altering vascular and embryonic origin. A common feature is the distribution of congenital vascular anomalies in almost every region of the body, any organ. Another feature is given by the potential for unique forms, multiple, or disseminated, which may vary as a way of growth, with profiles of well-defined infiltrative to diffuse.

5. In patients with multiple hemangiomas, clinical examination and complementary imaging in the diagnosis of visceral organ damage arising from the same gill arch structures in the anatomical region which is located hemangiomas.

6. Because hemangiomas etiopathogenesis understanding and new therapeutic methods, their attitude of neglect, represents a current therapeutic indication. Observation is encouraged by most medical professionals, and in most hemangiomas need no further intervention.

7. Modern therapeutic claims trend early intervention to prevent imminent aesthetic sequelae such as scarring.

8. HI in early stage growth can be rapid and unpredictable. Prompt therapeutic intervention can prevent progress rapidly evolving phase, preventing large HI. The influence of HI on the body is varied and can be life-threatening if it affects the larynx and trachea. On the other hand, hemangiomas affecting the eyelids can cause deterioration of vision in the form of ambyopia, refractive defects or even blindness.

9. In terms of locoregional extension, HI mass can be complicated by ulceration, necrosis or infection of the vital anatomical structures.

10. Aesthetic deficit (disfigurement) may lead to such complex psychological complex of inferiority, loss of confidence, lack of socialization.

11. Regarding the extension of the final resolution of the hemangiomas, there is no objective way of predictability or evaluation.

12. Undisputed indications for treatment of facial hemangiomas include ulceration, bleeding, giant hemangiomas, functional deficits and congestive heart failure with massive damage. Multidisciplinary expertise is necessary in patients be managed with facial hemangiomas.

13. Embolotherapy is a very fine method which varies between patient safety and technical efficacy. For these reasons all those involved in invasive treatment of facial hemangiomas (radiologist, surgeon, patient and family) must know the risks and benefits of embolioectomy.

14. To obtain a significant clinical response is necessary embolization at least 70% of artery supply. Strawberry will decrease significantly in size in 2-4 days, after which it will stabilize and will be a regression to the involutive phase.

15. Depending on the localization of hemangiomas can use a variety of embolization agents, but in patients with mixed hemangiomas is indicated to use microspheres improve the aesthetic outcome post-therapy. Each embolization agent has positive and negative features, so that the doctor must know the applicable procedure risks and benefits of their use, to knowingly choose the most effective agent for each hemangioma.

16. HI Treatment depends on the primary site of localization and the different developmental stages. A highly controversial topic is the early treatment of small HI facial tracking to be extremely critical reassessed, particularly with regard to long-term aesthetic results and sequelae of therapy. Active observation is generally the most appropriate method for tracking facial HI small except on rare occasions should not be used as a first surgical therapeutic method. If the trachea is affected, the objective is to prevent airway obstruction. If eyelid disorder, treatment should be initiated immediately to prevent visual sequelae.

17. If the hemangioma shows a rapid rate of proliferation, are ulcerative develops cosmetic or functional areas sensitive,
therapeutic intervention with corticosteroids is, laser therapy or, in the latter case, surgical ablation.
18. 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 allow safe treatment of hemangiomas preventing unnecessary psychological sequelae of children due to the presence of facial hemangiomas.
19. Major desideratum must be represented by treating facial hemangioma maintain the concept of facial beauty.
20. Collaborative efforts of surgeons, radiologists, vascular biologists need to isolate targets of effective therapeutic and surgical approaches, although the clinical and basic research in the area hemangiomas has developed dramatically in recent decades.

Keywords:
1. hemangioma;
2. embolization;
3. therapy;
4. vascularization.