

Therapeutical Approach Of Facial Hemangiomas

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ABSTRACT Cutaneous hemangiomas and complex vascular malformations are the most frequent benign vascular tumors of childhood. The frequency of up to 10% of children under one year, affecting of young ages, and the disabling effects of physical and mental, infantile hemangioma (IH) is a real public health problem. Seldinger technique involves approach of percutaneous puncture of the artery followed by the introduction of guide wire through the needle but thinner than that, after extraction needle is drag coaxial catheter size larger than guide wire or needle. Selective carotid arteriography involves selective opacification of the common carotid artery and its branches. The way the approach is currently used by catheterization transfemoral using Seldinger technique. This allows exploration of both carotid and vertebral artery, possibly via the same catheter. Most diagnosed hemangiomas showed a segmental distribution. According to studies by Haggstrom, identifies four facial segments: frontotemporal (S1), Jaw (S2), mandibular (S3), Frontonazal (S4). 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). Hemangiomas in early stage growth can be rapid and unpredictable. Prompt therapeutic intervention can prevent the evolution phase of rapid progress, preventing the emergence of large Hemangiomas. In terms of locoregional extension, HI mass can be complicated by ulceration, necrosis or infection. 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.

KEY WORDS hemangiomas; therapy; angiography; facial

Introduction

Cutaneous hemangiomas and complex vascular malformations are the most frequent benign vascular tumors of childhood.

The frequency of up to 10% of children under one year, affecting of young ages, and the disabling effects of physical and mental, infantile hemangioma (IH) is a real public health problem.

The current incidence is estimated between 1-3% of newborns, and may increase to 10% by the age of 5 years. The incidence of cutaneous hemangiomas in the first three days after birth is reported to be between 1.1% -2.6% with a real trend for augmentation of up to 8-12% between 1 month and 1 year of life.

A number of authors report an increased incidence of hemangiomas among premature babies, raising questions concerning the disease etiopathogenesis. At newborns with a weight less than 1500 grams by cutaneous hemangiomas is reported in current literature to 15.6% and increases with decreasing of birth weight, reaching 22.9% at newborns weighing less than 1000 grams.

Hemangiomas are more common in females, a girls-boys ratio varies according to the study quoted, between 3: 1 and 5: 1. Also appear to be more common in caucasian than in black patients, the highest reported incidence is 1%.

Intrafamilial occurrence is sporadic, but there are authors like (Blei&colab), which report families where hemangiomas transmission is autosomal dominated with a moderately increased penetration of hemangiomas. In case of twins there is no evidence of statistical value until this date, wich is able to determine a probable risk of developing head and neck hemangiomas.

The pathology caused by the presence of hemangiomas justify the effort of medical and surgical pediatricians, pediatric surgeons, plastic surgeons, ophthalmologists, radiologists, and, not least the parents, carers and entourage.

The final purpose in the diagnosis and treatment of these diseases is not only to identify "ideal" therapeutic method , and also avoiding complications of the surgical act, with minimum repercussions on patients' psychology.

Materials and methods

This research undertake a retrospectiv study to a group of 94 patients who presented to the Radiology and Medical Imaging Laboratory, Department of Interventional Radiology, from University of Bucharest Emergency Hospital in a period of three years, between January 2008 and September 2010, to establish imaging diagnosis of facial hemangioma (all 94 patients) and the establishment of treatment (endovascular

embolization), where catheterization therapeutic was possible and there was definite indication (56 cases).

The database related to statistical analysis needed for this study was made using information obtained from clinical observation sheets of selected patients, results of paraclinical investigations and laboratory records in imaging protocols..

In order to achieve specific objectives of the present study depending of the patients admitted to the Department of Interventional Radiology, University Emergency Hospital in Bucharest, in full agreement with the coordinator teacher of the doctoral thesis was done on the composition of a group of 94 patients.

Criteria for inclusion of patients in the study group

- aged 18 years;
- identification data of the patient (age, gender, type of origin, length of hospitalization, the interclinic route)
- hospitalization reasons
- admission diagnosis;
- comorbidity;
- medical and surgical history;
- specialized clinical and laboratory explorations;
- patient's age and general condition of allowing endovascular intervention;
- imaging (initial angiogram confirmed hypervascular nature of the lesion);
- possible catheter;
- locoregional anatomic features that allow embolization;
- satisfactory collateral cerebral circulation;
- absence of life-threatening complications evolutionary;
- informed consent of the patient and/or family.

Exclusion criteria of patients in the study group

- patients aged under 18;
- pregnancy;
- arterial thrombosis;
- patients who refused imaging investigations or therapeutic indication;
- patients who refused inclusion in the study group.

Angiography technique

Seldinger vascular technique

Seldinger technique involves approach of percutaneous puncture of the artery followed by the introduction of guide wire through the needle

but thinner than that, after extraction needle is drag coaxial catheter size larger than guide wire or needle.

Until the technique imagined by Seldinger , catheterization were made either through discovery surgical arteriovenous / phlebotomy, or by introducing catheters through the lumen of trocar needles thick. These techniques are currently abandoned. With all this, actually is store a variant of the trocar technique, using materials approach us to modern artery cannulation (veins) with Teflon sheath with a valve allowing several changes without introducing catheters and guide wire without damaging the artery wall by repeated introductions; the pods remain permeable by washing on a side tube with heparinized saline; this technical is used in particular intravascular therapeutic procedures in interventional radiology (transluminal angioplasty, therapeutic embolization, selective coronary angiography).

Seldinger technique has the broadest applications, both diagnostic and therapeutic cardiovascular system in Approach - hollow heart, great vessels, peripheral and visceral arteries and veins, pressure measurement, blood samples harvesting and injection of contrast (angiography); catheters introduced into the vascular lumen can be manipulated and positioned under fluoroscopic control anatomical landmarks, possibly as a selective or supra-selective catheterization of the arterial or venous branches of the order II, III-IV.

Other non-vascular applications in targeted by percutaneous catheterization of the other devices and systems consist of drainage and percutaneous embolization of tumors, arteriovenous malformations, hemangiomas, etc.

Arterial catheterization technique is difficult or impossible to implement in the absence of arterial pulse, relative contraindication resulting puncture site is superjacent arterial thrombosis (for example, aortic thrombosis below).

General contraindications of invasive exploration with contrast agent are represented by the presence of urea, fever over 39 ° C, allergy to contrast.

Selective carotid arteriography

Selective carotid arteriography involves selective opacification of the common carotid artery and its branches.

The way the approach is currently used by catheterization transfemoral using Seldinger technique. This allows exploration of both carotid and vertebral artery, possibly via the same catheter.

Materials needed: femur-brain catheters 5-6 Fr gauge, type "Sidewinder" and / or "Head-hunter" with various lengths of curves distal atheromatoase adequate bandwidth and performance of the thoracic aorta. Teflon-coated guide wires, the distal end in "J" and the mobile core, must have adequate length.

Catheterization involves directing under fluoscopic control. The probes can be changed easily by wired coaxial technique guide, or using a femoral arterial sheath teflon valve with thickness gauge catheters used properly.

Left carotid artery, which emerge separately from the aorta is more difficult to approached. The catheter is first positioned with the distal end brahiocefalic trunk, and then guide wire is manipulated in carotid ostium.

Right carotid artery is usually easily approachable by selective catheterization brahiocefalic torso straight, drag a catheter guide wire core to mobile in carotid, after being pushed along with guide wire retraction.

Catheter positioning is tested with 2-5 ml of contrast substance: the common carotid distal end of the probe must be inserted 2-3 cm beyond the ostium.

In special cases (and especially for therapeutic purposes) can be effected by handling the wire guide, internal carotid artery catheterization superselectiv, foreign or even their branches. this purpose, use is sometimes sliding coaxial catheter systems (external and internal carotid in 8 3-4 Fr Fr - conducted in the carotid branches).

These techniques are difficult, risky and are not used routinely but only in selected cases and especially in therapy (embolization, selective obstruction of aneurysms, etc.).

Results the branches clouding is obtain intra / extra-cerebral of the carotid artery (for arterial and parenchymal while venous return - until the jugular veins).

Results of treatment of facial hemangiomas

Demographic Results

The criteria of gender

Of the 94 patients from the study group, 51 were female (54.25%) and 43 (45.75%) male.

By analyzing the distribution of patients according to gender, there is high prevalence of facial hemangiomas in females, results consistent with those published in literature.

Patient age criteria

The average age of patients included in the consignment was 35.64 ± 10.05 years, accounting for extreme values of 18 and 65.

The analysis results are found high frequency of facial hemangiomas in the age group 18-30 years, most patients in the group with congenital facial hemangioma.

Environment of origin criteria

Most patients (61.70%) came from urban areas and 38.30% in rural areas.

Interventional Radiology Service has been conducted in this research belongs to the third echelon of care, patients applying to our service following the guidance of specialist secondary services (ORL, ophthalmology, BMF, dermatology, family medicine, surgery).

A total of 58 patients were from urban areas, a situation explained by easy access to medical services and health awareness and education of this higher echelon.

Distribution of patients after 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).

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).

Distribution of the patients after vascular involvement

Most patients (94.68%) had vascular hemangioma with a single component which correlated and a branch of the trigeminal nerve.

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

Imaging Results

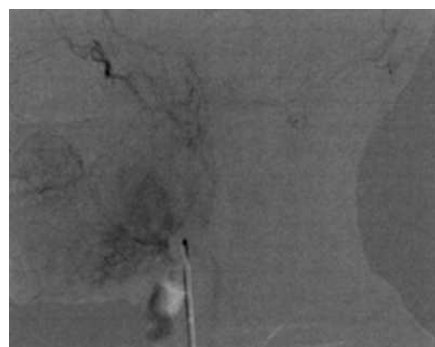


Fig. 1. Profile Injection in the left external carotid artery, the maxillary space blush and left temporomandibular joint.

In all cases patients were angiographically evaluated to determine hemangiomas, the precise location of the lesion and vascular pattern of movement involved and efferent. Angiography

allowed the evaluation of facial hemangiomas, the results are consistent with the age and condition of the patient on admission.

Total embolization was possible in 11 cases. In other cases, preoperative embolization was performed only for large hemangiomas in order to stop or reduce intraoperative bleeding, shorter operative time and minimizing hemodynamic exchanges that may occur secondary to surgery.

In 10 cases embolization was associated with radiosurgery, a situation that required the use of absorbable agents.

Embolization staged "embolization staging" was used mostly in large hemangiomas had the advantage of avoiding the technical complications and hemodynamic.

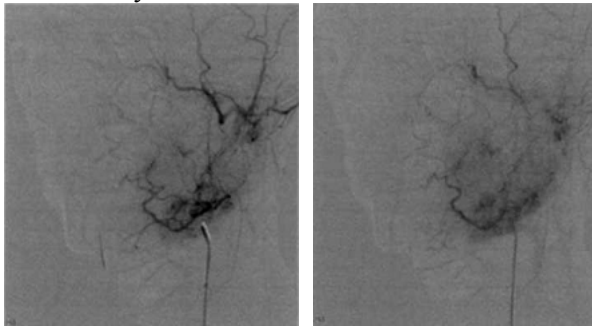


Fig. 2. Left half-injection, left external carotid artery: a. pressure phase, b. parenchymal phase

Patients were followed for only angiographic embolization at 6 and 12 months.

Unfortunately, two patients died due to the occurrence of intercurrent diseases. Recurrence rate in our study group was 9.57%.

Conclusions

Because understanding the etiopathogenesis of hemangiomas and new therapeutic methods, the attitude of negligence, represents a current therapeutic indication. Observe the most special care is encouraged by ITIL, and in most hemangiomas need no further intervention.

The trend in modern therapeutic support early intervention to prevent imminent aesthetic sequelae such as scarring and alterations fibrogrăsoase waste.

HI in early stage growth can be rapid and unpredictable. Prompt therapeutic intervention can prevent the evolution phase of rapid progress, preventing the emergence of large HI. The influence of HI on the body is varied and threatening if it affects the larynx and trachea vial. On the other hand, hemangiomas affecting the eyelids can cause deterioration of vision in the form of amblyopia, ie refraci defects or even blindness.

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

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

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

Undisputed indications include treatment of facial hemangiomas ulcerate strive, bleeding, giant hemangiomas, functional deficits with severe congestive heart failure and massive. Multidisciplinary expertise is necessary for patients be managed with facial hemangiomas.

Emboloterapia is a very fine method balează between the patient's safety and technical efficacy. For these reasons all those involved in invasive treatment of facial hemangiomas (radiologist, surgeon, patient ji family) must know the risks and benefits of embolectomy.

To obtain a significant clinical response is required embolization of the PUD in 70% of arterial pressure. Strawberry will decrease significantly in size within 2-4 days, after which it will stabilize and will be a regression to the involutive phase.

According to the hemangioma can be used a variety of embolization and, but for patients with mixed hemangiomas is indicated to use microspheres improve the aesthetic outcome post-therapy. Each agent embolization has positive and negative features, so that the doctor must know the applicable procedure risks and benefits of their use, to choose with full knowledge that Christians A most effective agent for each hemangioma.

HI Treatment depends on the primary site of localization and various 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 with small HI except take some rare occasions surgery should not be used as a first therapeutic method. where the trachea is affected, the objective is to prevent airway obstruction. If case of eyelid disorder, the treatment should be initiated immediately to prevent visual sequelae.

In case that hemangiomas have a rapid rate of proliferation, are ulcerative develops bottom-national cosmetics or sensitive areas, therapeutic intervention with corticosteroids is, laser therapy or, in the latter case, surgical ablation.

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.

Major desideratum must be represented by treating facial hemangioma maintain the concept of facial beauty.

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