LETTERS TO THE EDITOR

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Importance of laser treatment in vascular malformations in the child

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Dear Editor,

Infantile hemangiomas are congenital or acquired in the first months of life vascular proliferations, they are benign vascular tumors, which are more common in infancy.[1] They are be found in 5-10% of newborns and even if they can be present at birth-time, they typically appear in the early weeks of life and spread quickly. We can observe a prevalence in the female gender and they are more common in premature newborns. They show a quick post-natal growth, followed by a slow involution, that can lead to a complete regression. A complete resolution occurs in the 40% before the fourth year of age and the 70% at the seventh.[2]

Though most of these tumors are small and harmless, some can be dangerous for vital functions.[3]

They develop through the proliferation of the endothelial cells accompanied by the formation of full-of blood anastomotic channels.[2] The cause for the endothelial proliferation is unknown. Several angiogenic factorshave been identified but where they come from and how they work is still to be found.

Clinically they can be distinguished in superficial and deep, the former are bright red lesions, the latter have a normal skin above, and often they have a more bluish line, but they are both characterized by a soft, smooth or lobulated mass, sessile or pedunculated, and their dimensions can range from a few millimeters to some centimeters.[4] The lesion have a tendency to spread in an excessive way compared to the normal growth of the child. Accurate measurements or clinical images should be performed to document the modifications of size, seen that various therapeutical approaches are often based on an approximative valuation of the growth frequency.

The most common sites are the face and the scalp , but every part of the body can be affected. Lesions on mucous membranes are infrequent, differently from periorifitial ones.

Hemangiomas are rarely biopsiezed. Early lesions are quite cellular, with a scarce vascular component; such lesions are particularly common in the periorbital site, they normally have a deep component, and they have been called cellular angiomas. We can observe prominent mitotic figures, mast cells, and afterwards the vascular lumens became evident. When the regression with fibrosis of the cellular areas occurs, the vessels can utterly dilate, producing a cavernous pattern.

Complications in hemangiomas can be given by their preventing from vital function, for example the formation of amblyopia for a big-size lesion affecting just one eye; the ulceration of the lesion is relatively common and normally not associated to bleeding problems; Kasabach-Merritt's syndrome; visceral involvement.[1] Several treatments have been signalled, but it is common opinion that there is no need for treatment, considered the natural and spontaneous involution of the pathology. In special cases, such as functional problems, big dimensions or critical sites, we can perform a compressive therapy, use rapid-growth-systemic steroids, use intralesional steroids in the least compelling forms, cryotherapy or we can sometimes resort to surgical removal or to laser therapy.[5] In our experience we report instead of a paradigmatic case that shows how the timely removal of a vascular formation is of fundamental importance. Waiting for the natural regression, through years, of infantile hemangiomas can lead to a wider spreading to tissues, a greater alteration of the skin texture, greater and permanent results of cutaneous atrophy, up to aesthetical, but mainly functional, problems of the organs directly affected or contiguous. The immediate intervention with a non-invasive technique, such as the Dye laser, on vascular lesions in neoformation or at least still at small dimensions allows to achieve very good results of an aesthetical-functional kind without any alteration.

With referance to this we report the case of a 8-month-old girl, burn with natural delivery, with an infantile hemangioma developed on the lower eyelid rim of the left eye. Her parents state that at the birth she looked normal and that the lesion appeared when she was two-week old, growing in a short time. It was a 1x1 cm of elevated mass, bright red colour, with elastic consistence hemangioma, affecting the middle portion of the lower left eyelid rim (Figure 1). At the objective examination the little girl already showed an important squint of the left eye due to the presence of the hemangioma which hindered the natural vision. Because of the high risk to develop a sigh-deprivation induced amblyopia and for the serious concern of the parents regarding the aesthetical-functional damage, the girl was treated with a 595 nm pulsed Dye laser (Deka Mela Fi) with a 10 mm spot, with a 0,5 ms impulse length and a 6,5

Figure 1.-The case of infantile hemangioma located on the lower eyelid rim of the left eye. The patient must be utterly treated with two more sessions to promote the absorption of the remaining vascular component.

Figure 2.-A) Before and B) after the treatments with Dye-laser.

J/cm^2 fluency. Seven session have been performed. The patient had a good tolerance of the procedure ad she did not refer any pain subsequent to the intervention. The lesion notably regressed through months and one years and three months after the treatment we acknowledged the regression of the lesion (Figures 2, 3).

What we want to remark is that in addition to a very good esthetical result, strenghtened by a natural silhouette of the eyelid rim, a very good trophy of the tissue and no scar resulting, we have also achieved a very good functional result, given by the complete regression of the squint (Figures 2B, 3). The parents themselves understood the importance of an immediate intervention, thus allowing us to present the natural consolidation of the squint through the years, with the risk of it to become permanent even after the completed regression of the vascular lesion.

Figure 3.-Outcome after treatment with Dye-laser.

There is not a universal approach in handling infantile hemangiomas and most therapeutical recommandations are based anecdotal experience.

Recognizing that not all hemangiomas an the same, doctors and parents, informed about the possible interventions, can choose. The main targets include anticipating or inverting the functional life complications induced by the lesion, preventing the appearance of an atrophy subsequent to the excessive distension of the skin, reducing to a minimum the psycho-social discomfort to the patients and their families and avoiding the potential scars that can develop after invasive procedures.

It is for this reason that we propose for infantile hemangiomas the immediate and premature therapy through a pulsed-Dye-laser with wave-lengths of 585 and 595 nm and impulse-lengths of 1.5 mm even on small children. This allows to obtain vary good aesthetical and functional results without any complications linked to the greater dimensions of the lesions themselves. In our experience, the treatments are usually well-tolerated and any observe reactions are smaller or completely absent, included those of modification of the pigmentation, atrophic scarring and ulcerations. The pulsed laser is also affective in the treatment of teleangectasias that can be present on the involution surface of hemangiomas.

References

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