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CASE STUDY

# Hemangioma of the nasal fossa in infants

**Javier Cervera Escario,[a,*] Javier Enríquez de Salamanca,[b] and Margarita Bartolomé Benito[a]**

[a] *Servicio de Otorrinolaringología, Hospital Universitario Niño Jesús, Madrid, Spain*
[b] *Servicio de Cirugía Plástica, Hospital Universitario Niño Jesús, Madrid, Spain*

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**KEYWORDS**
Nasal hemangioma;
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**Abstract**
Hemangiomas in infancy are the most frequent benign tumors of the head and neck in children. However, intranasal location is very rare. By obstructing the entire nasal fossa, it produces a problem of breathing difficulty in the neonatal period, which leads to therapeutic measures being taken in the first months of life.
We present a patient who was born with intranasal hemangioma, we study the various therapeutic options and we expose the final resolution of the case, which was vaporization using $CO_2$ laser.
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**PALABRAS CLAVE**
Hemangioma nasal;
Láser $CO_2$;
Fosa nasal;
Nasal

**Hemangioma de la fosa nasal en la infancia**

**Resumen**
Los hemangiomas en la infancia son los tumores benignos más frecuentes de cabeza y cuello en los niños. La localización intranasal es muy rara. Al obstruir toda la fosa nasal, produce un cuadro de dificultad respiratoria en el período neonatal que obliga a tomar medidas terapéuticas en los primeros meses de vida.
Se presenta un paciente que nació con un hemangioma intranasal, se analizan las diferentes opciones terapéuticas y se expone la resolución final del caso, mediante vaporización con láser $CO_2$.
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## Introduction

Hemangiomas during childhood are the most common type of benign head and neck tumours in infancy.[1] Intranasal location is very rare; it blocks the nasal cavity and causes respiratory distress during the neonatal period, making it necessary to resort to therapeutic measures to avoid

*Corresponding author.
*E-mail address:* jcerveraescario@seorl.net (J. Cervera Escario).

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**Figure 1** Angioma occupying the entire nasal fossa.

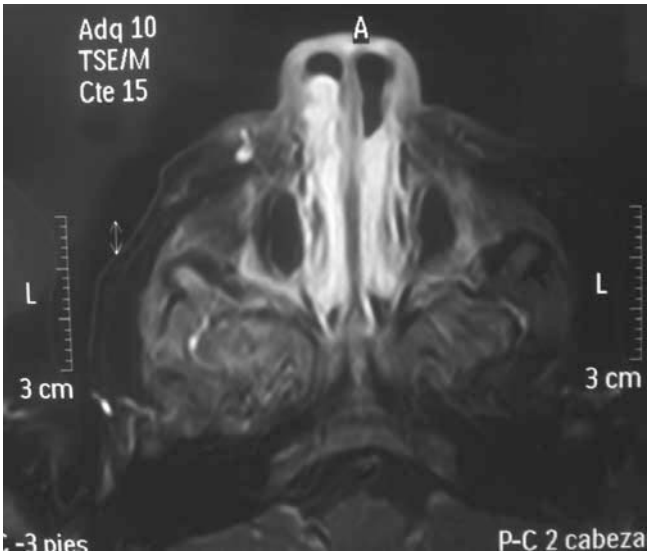


**Figure 2** Magnetic resonance showing the angioma located at the front of the right nasal fossa.

possible respiratory type complications. On the other hand, the affected zone has an easy surgical approach, which makes early treatment easier.

## Case study

A child born with a haemangioma in the right parietal region, who also presented nasal respiratory insufficiency that prevented swallowing. Because infants are customarily nasal breathers, any nasal obstruction makes it difficult for them to coordinate breathing and swallowing.

Simple ENT exploration revealed an angiomatous lesion in the nasal vestibule that occupied the entire endonasal lumen (Figure 1), with an extensive base on the side wall of the nostril, at the level of the inferior turbinate.

The MRI T1 sequence with gadolinium revealed the existence of a lesion at the front of the nostril, without deep layer infiltration or extension to the back of the nostril (Figure 2). A therapeutic approach for these angiomas was considered. Due to the position of the intranasal angioma, it was decided to use a surgical microscope to perform vaporization with a $CO_2$ laser using a 4-watt super-pulsed Sharplan model with micromanipulator.

It was a clean, non-bleeding operation and the angiomatous mass that blocked the nasal cavity was removed. Nasal blocking was not necessary.

The postoperative result was very favourable, as a permeable nasal cavity free of pathology was achieved.

## Discussion

Hemangiomas have a very characteristic natural history. They usually appear in the first few weeks of life, with the proliferative phase lasting 6 to 18 months on average, followed by a slow involution phase lasting a few years before they disappear.[2] From the epidemiological point of view, this tumour is more predominant in females. It is also predisposed to fairer skin and has a higher incidence rate in premature infants weighing less than 1500 kg.

They are histologically characterised as an endothelial cell proliferation which is why they are dynamic lesions. They are histologically and clinically different to vascular malformations that are present from birth, often developing slowly over time, and generally do not recur. The classification of these anomalies is based on the clinical and histological appearance of the blood vessels. It is clinically useful to separate vascular malformations into low flow anomalies (capillary, venous, lymphatic or combined) and high flow anomalies (arteriovenous fistula and arteriovenous malformation).[3] In our case, an anatomopathological study was not possible, as it was impossible to obtain a biopsy sample after $CO_2$ laser vaporization.

More than half of childhood hemangiomas appear on the head and neck, showing a preference for areas in the central part of the face, especially the cheek, lateral part of the upper lip and upper eyelid.

The clinical appearance of the hemangiomas depends on the degree of manifestation on the skin. Superficial cases have a bright red appearance. Deeper cases affect the deeper dermis and subcutaneous tissue, producing a tumour with a bluish tint.

PHACE syndrome represents the most well-known example of complications that can arise concerning segmental hemangiomas of infancy. PHACE is the acronym for *Posterior fossa brain malformations, segmental cervicofacial Hemangiomas, Arterial lesions, Cardiac defects/aortic coarctation and Eye anomalies.*[4]

Intranasal location is very rare and there is almost no information about it in medical literature.[5]

Treatment options for hemangiomas are varied, and based on medical literature, at the moment there is no consensus on the best protocol and/or guidelines.

The different treatment methods are the following[6]:

- Conservative: wait-and-see approach, depending on the evolution and complications presented by the child. In

cases where the haemangioma is located in the nasal cavity, early treatment is recommended as it is a simple surgical procedure.

- $CO_2$ Laser: a good option in lesions that are localised and accessible to laser approach. A reduction in lesion size can be achieved although sometimes it is not possible to eliminate it altogether. Secondary effects are scarce and the possibilities of haemorrhage are low when low intensities are applied.
- Systemic or local corticosteroid therapy: this systemic option allows growth to be controlled on a long-term basis, but has the problem of possible secondary effects.
- Corticosteroids with intralesional injection: their efficiency is doubtful.
- Other forms of treatment. Interferon, vincristine: these drugs have some very significant side-effects and their effectiveness has not been proven. Cryotherapy, embolisation: they do not show any benefits and are not free from side-effects.[7]

Here, $CO_2$ laser vaporization was chosen for the vaporisation of the angioma as it would be simple and uncomplicated, due to its easy access: the angioma was located in the intranasal end of the nasal cavity and was not compromising significant nearby structures.

The results were very good. The nasal angioma was completely eliminated and permeabilization of the nasal passage was established again.

## Conclusions

Childhood hemangiomas are the most common type of benign head and neck tumours, with intranasal location being very rare. Medical literature recommends watchful waiting, as long as there are no respiratory complications. Our case involved a lactating infant who was suffering from severe respiratory distress, so early therapeutic measures needed to be taken. The option selected was $CO_2$ laser vaporization to remove the angiomatous intranasal mass, with restoration of nasal permeability; it was carried out without any complications.

## Conflict of interest

The authors declare no conflict of interests.

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