Pulsatile Occipital Mass in a 2-Year-Old Male

Margarida Paiva Coelho[1], Sara Figueiredo[2]

Port J Pediatr 2019;50:281-2
DOI: https://doi.org/10.25754/pjp.2019.16894

A 2-year-old male was referred to the pediatrics clinic for an apparently growing pulsatile occipital mass, noticed by the primary care physician two months earlier, who suspected it of being malignant. The patient is the second child of healthy non-consanguineous parents, with unremarkable prenatal and neonatal periods as well as an irrelevant prior medical history. He had regular growth and normal development.

The previously performed exams included normal blood count, normal sedimentation rate and uric acid as well as lactate-dehydrogenase within the normal limits. A previous imaging study by ultrasound-Doppler described a fluid lesion with 35 x 15 x 24 mm, thick walls, thin septa, and perilesional vascularization.

On physical examination, a clearly pulsatile protrusion with diffuse borders was adjacent to the external occipital protuberance (Fig. 1). No other masses or palpable cervical, axillary, or inguinal lymph nodes were detected. For further characterization a magnetic resonance imaging was performed, showing a 2.2 cm meningeal herniation through the occipital squama with posterior extension to the subcutaneous cervical tissues (Fig. 2). Computed tomography scan confirmed the diagnosis of an occipital squama meningocele, continuous with the *foramen magnum*, with 20 mm diameter and 12 mm extra-cranial (Fig. 3). No other craniovertebral anomalies were detected.

Currently, at 5 years-old, he remains asymptomatic maintaining regular follow-ups with pediatricians and neurosurgeons. Surgical intervention will be considered if there is lesion growth or if neurological symptoms arise.

Cranial meningocele is a post-neurulation defect[1] with an estimated frequency of 0.6-4 per 10,000 live births.[2] Within the cranial neural tube defects, occipital meningoceles are the most common.[3] The association with other congenital cranial or brain malformations must be excluded. Follow-up should be regular considering the possibility of neurological compromise and periodic neuroimaging is advised.

Cervico-occipital masses are common and frequently benign. Differential diagnosis includes traumatic lesions (such as hematoma or skull fracture), vascular malformations (for example hemangioma, lipoma, lymphangioma), reactive lymphadenopathy, or metastatic lesion. Further investigation is warranted if the lesion is single, pulsatile, or has diffuse borders. In the presence of a congenital mass, particularly if it is median, a neural tube defect must be excluded.

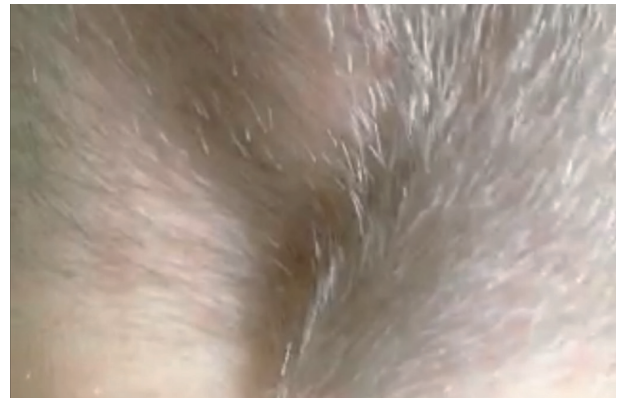

Figure 1. A pulsatile cervico-occipital mass in the median position.

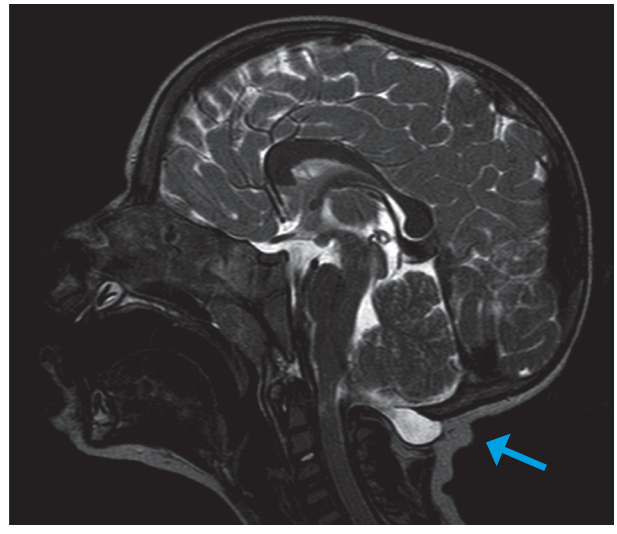

Figure 2. Meningeal herniation through the occipital squama and posterior extension to the subcutaneous tissues, visible in T2 magnetic resonance.

1. Pediatrics Department, Centro Hospitalar Universitário do Porto, Porto, Portugal
2. Pediatrics Department, Centro Hospitalar de Médio Ave, Santo Tirso, Portugal
Corresponding Author
Margarida Paiva Coelho
margarida.pcoelho@gmail.com
Largo da Maternidade de Júlio Dinis, 4050-651 Porto, Portugal
Received: 22/01/2019 | Accepted: 05/04/2019 | Published: 01/10/2019

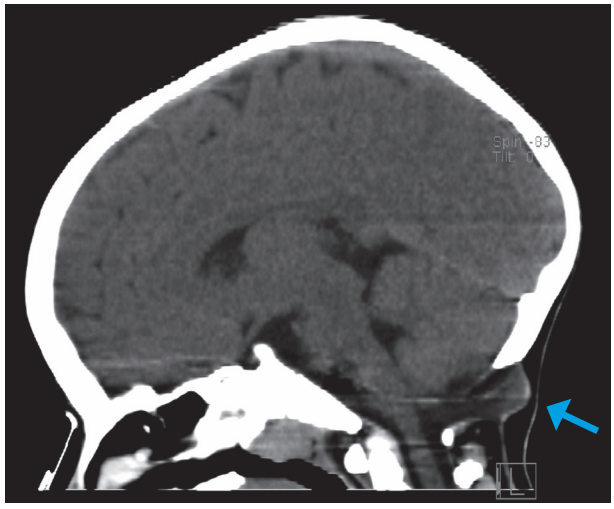

Figure 3. Computed tomography scan confirming the existence of an occipital squama meningocele, continuous with the *foramen magnum* with extracranial extension.

Keywords: Child, Preschool; Encephalocele/diagnosis; Neural Tube Defects

WHAT THIS REPORT ADDS

- Cervico-occipital masses are frequent and some characteristics should illicit further investigation: single lesion, pulsatile, and diffuse borders.
- Neural tube defects should be included in the differential diagnosis of a posterior neck mass and midline posterior defects, even after the newborn period.
- In the presence of a congenital tumefaction, especially if it is median, a neural tube defect must be excluded.

Conflicts of Interest

The authors declare that there were no conflicts of interest in conducting this work.

Funding Sources

There were no external funding sources for the realization of this paper.

Provenance and peer review

Not commissioned; externally peer reviewed

Consent for publication

Consent for publication was obtained.

Confidentiality of data

The authors declare that they have followed the protocols of their work centre on the publication of patient data.

References

1. Greene ND, Copp AJ. Neural tube defects. Annu Rev Neurosci 2014;37:221-42. doi: 10.1146/annurev-neuro-062012-170354.
2. Gupta N, Ross ME. Disorders of neural tube development. In: Swaiman K, Ashwal S, Ferriero DM, Schor NF, Finkel RS, Gropman AL, et al, editors. Swaiman's Pediatric Neurology. 6th ed. Edinburgh: Elsevier; 201. pp.183-91.
3. McComb JG. Spinal and cranial neural tube defects. Semin Pediatr Neurol 1997:4:156-66.