

Hemangioblastoma Incidentally Discovered at CT Scan in Bamako: About a Case

Traore Ousmane^{1,2,3*}, N'Diaye Mamadou², Dembélé Mamadou², Dembélé Adama¹, Diakité Siaka³, Sidibé Mansa Drissa², Camara Nagnoumague¹, Keita Adama Diaman^{2,3}

¹Department of Radiology and Medical Imaging, The Marie Curie Medical Clinic, Bamako, Mali

²Faculty of Medicine and Odontostomatology, The University of Science, Techniques and Technologies, Bamako, Mali

³Department of Radiology and Medical Imaging, The University Hospital Center of Point "G", Bamako, Mali

Email: *ghousno1@yahoo.fr

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Abstract

Hemangioblastomas are benign vascular tumors of the brain. These are rare tumors, usually located in the cerebellum and most often affecting young adults. The aim was to study the value of CT in the management of hemangioblastoma through observation. We report the case of a 38-year-old patient referred to the radiology and Medical Imaging Department of the Marie Curie Medical Clinic in Bamako, Mali, for an orbito-cerebral CT scan in a context of bilateral eyelid edema. The examination was performed using multi-slice computed tomography (16 slices) with reconstruction in the 3 planes of space without and with the injection of an iodinated contrast agent. The CT scan was crucial in making the diagnosis of hemangioblastoma incidentally, which allowed for adequate management. The patient was operated on, and the radiological outcome was favorable, without significant cystic formation, after postoperative control and clinical signs were resolved. CT can be an interesting alternative in countries like ours despite MRI being the examination of choice in hemangioblastomas.

Keywords

Hemangioblastoma, CT Scan, Incidental Discovery and Bamako

1. Introduction

Hemangioblastomas are relatively rare tumors of the central nervous system, representing 1.5% to 2.5% of all intracranial tumors and 7% to 8% of all posterior cranial fossa (PCF) tumors [1]. They occur mainly in the cerebellar hemi-

spheres in 76% of cases, making them the most common primary cerebellar tumor in adults [2]. Approximately 70% of cases are reported to be sporadic, and the remaining 30% are reported to be familial cases associated with LHL. It is estimated that 60% - 80% of patients with von Hippel-Lindau disease develop CNS hemangioblastoma during their lifetime [3]. Hemangioblastoma has an excellent prognosis with complete excision [3]. In imaging, CT is usually the first examination performed, it can provide important information; but MRI remains the examination of choice for the examination of the posterior cerebral fossa and its tumors, better specifying their cystic and solid components [4]. We report the case of a hemangioblastoma discovered incidentally on CT scan in order to study the value of CT scan in the management of this pathology.

2. Observation

This was a 38-year-old patient with no known medical or surgical history, consulted at the University Hospital Center of the Institute of Tropical Ophthalmology of Africa (CHU-IOTA) for visual loss, occipital intense headache and bilateral eyelid swelling, non-painful progressively developing over a period of 4 weeks following a wasp sting since September 2023. There were swellings and redness in the skin following this wasp sting, which left skin spots after local treatment with hydrocortisone ointment. He had no vomiting. Given the persistence of ophthalmological clinical signs, the patient was specified for an orbito-cerebral computed tomography (CT) scan in the radiology and medical imaging department of the Marie Curie Medical Clinic in Bamako, Mali. Given these clinical signs, the patient was referred for an orbito-cerebral computed tomography (CT) scan. This CT scan was performed using a 16-slice GE Optima multi-slice device from 2007. An acquisition without injection of contrast product (CSP) and an acquisition with CSP injection was performed. The CT scan revealed a thin-walled cystic formation not enhanced by injection of contrast product measuring 61×36 mm on an axial section at the level of the posterior cerebral fossa in the right cerebellar region, it contained a spontaneously dense 08×05 mm mural nodule that enhanced intensely after injection of CSP (**Figure 1**).

This cystic mass exerted a mass effect on the fourth ventricle V4 responsible for a moderate dilatation of the supratentorial upstream ventricular system involving the lateral ventricles and the 3rd ventricle with sign of transependymal resorption including spontaneous periventricular hypodensity (**Figure 2**).

The patient was operated with good clinical and radiological evolution. Our patient had no more visual disturbance with headache resolution after one week postoperatively.

3. Discussion

Hemangioblastoma is a benign tumor of the central nervous system that occurs most commonly in the cerebellum. The diagnosis of hemangioblastoma is based

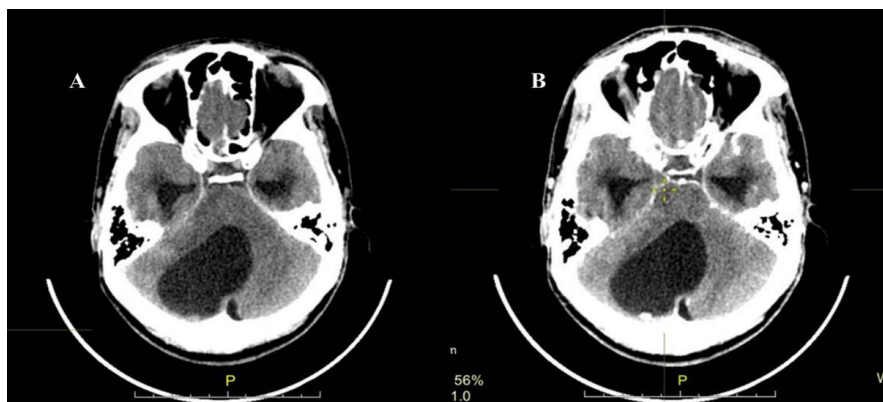


Figure 1. Orbito-cerebral CT scan in axial reconstruction without injection of PDC (A) and with injection of PDC (B): Cystic mass at the right cerebellar level with mural nodule (black arrow) intensely enhanced after injection of PDC suggestive of a hemangioblastoma.

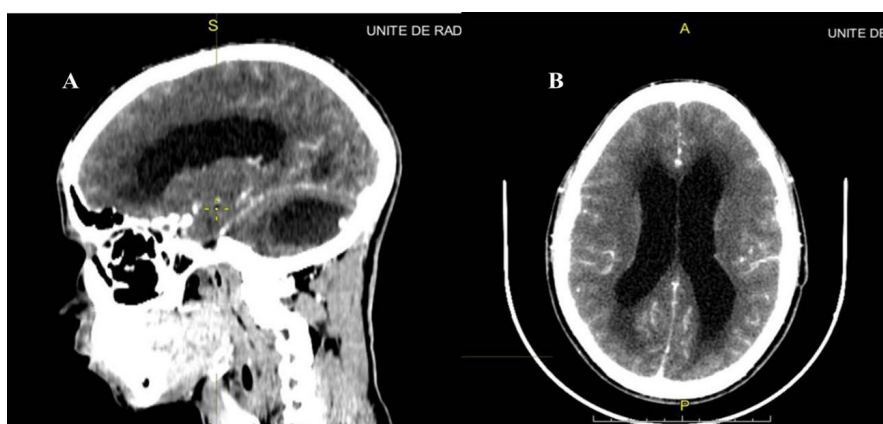


Figure 2. Orbito-cerebral CT scan with PDC injection in sagittal (A) and axial (B) reconstruction. (A) Cystic mass of the posterior cerebral fossa with enhanced mural nodule after intense PDC injection; (B) Moderate active biventricular supratentorial hydrocephalus.

mainly on histological and immunophenotypic features, with clinical, radiological and molecular information providing additional support [3]. Our patient was radiologically suggested and histologically confirmed. Immunophenotyping and molecular analysis were not performed in our case due to financial difficulty and the unavailability of these tests. In the various observations published in the literature the average age of the patients was 42.7 years, with a slight predominance for the male sex [1]. In our case, the subject was male and 38 years old. In our study, the symptomatology presented by our patient was considered secondary to the mass effect conditioning the symptoms of increased intracranial pressure (ICP) (headache, eyelid edema, visual disturbance). This result was comparable to that of the literature [1]. The most frequent location of these tumors in the literature was the posterior cranial fossa [3]. In our case, the tumor was in the posterior cerebral fossa more precisely at the right cerebellar level. CT scan allowed to evoke the diagnosis of hemangioblastoma in our case. The literature favors magnetic resonance imaging (MRI) as the examination of choice

[1]. Our patient did not have MRI. CT scan was sufficient for the diagnosis of hemangioblastoma in our case. In the literature, this tumor presents as a cystic formation with a hypervascular intramural nodule whose CT imaging demonstrates isodensity with respect to the brain within the solid component. Calcification is generally absent. On magnetic resonance imaging, hemangioblastomas tend to appear as a hypointense-T1 to isointense, a hyperintense T2 nodule with serpentine flow voids in the nodular part [3] [5]-[7]. Our patient had the intramural intracystic iso-dense hypervascular nodule after iodine injection. He had no calcification in our observation. CT has the advantage of being available and accessible in our country compared to MRI which is much more expensive and not available everywhere. The radiological differential diagnosis of hemangioblastoma in our daily practice is uncommon but can be done with glial tumors, particularly pilocytic astrocytoma which does not have a hypervascular mural nodule and is found in children. Brain metastases are less common in the posterior cerebral fossa and are enhanced in the periphery. On the other hand, histologically there were many differential diagnoses cited in the literature, such as Meningioma; Solitary fibrous tumor; Glial neoplasms; Paraganglioma and Hemangioma, which have similar but different histological characteristics depending on the aspects [3]. Our case was confirmed histologically.

4. Conclusion

Hemangioblastoma is a benign neoplasm that can occur throughout the central nervous system, but the most common location is the posterior cranial fossa. It may be discovered incidentally. CT is usually the first test performed to suggest the diagnosis, but MRI remains the test of choice.

Ethical Aspect

The patient had given informed consent and anonymity was maintained.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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