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Pituitary Incidentaloma Complicated by Pan Hypopituitarism at the Health Reference Centre of Commune III of the District of Bamako: Case Report

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Abstract **Case Report**

A frequent mode of discovery since the improvement of imaging techniques is the pituitary incidentaloma, defined as the discovery of a pituitary adenoma without clinical signs on a scanner or magnetic resonance imaging (MRI) performed for another reason. We report a case of pituitary macroadenoma complicated by panhypopituitarism, discovered incidentally as part of the macroangiopathic complications of type 2 diabetes at the reference health centre in commune III of the Bamako district. It has poor semiological characteristics but poses a diagnostic problem. In our case, the patient presented with physical asthenia and headaches. On biology, the patient presented with 5 lines of anteropituitary insufficiency. A scan revealed a pituitary adenoma measuring 27x22. Anatomopathological examination of the surgical specimen concluded that it was a pituitary adenoma. The patient received hydrocortisone and thyroid hormones prior to excision. This case highlights the delay in the diagnosis and management of pituitary adenomas.

Keywords: Imaging techniques, pituitary adenoma, panhypopituitarism, hydrocortisone.

INTRODUCTION

Pituitary adenomas are well-differentiated tumours that generally progress slowly over several years and develop monoconially from the endocrine cells of the anterior pituitary gland [1]. They account for around 10-15% of intracranial tumours [1, 2].

According to an observational study conducted in Belgium, the prevalence is 94±19 cases per 100,000 population. The majority of patients (66%) were women, with an average age of 40 years [2].

The pathophysiology of pituitary adenomas remains unclear despite recent advances, in particular the involvement of the AIP gene in familial adenomas [2]. A pituitary adenoma may be discovered in the presence of a tumour syndrome or signs of hypersecretion or pituitary deficits (hyposecretion or hypopituitarism) [2]. A frequent mode of discovery since the improvement in imaging techniques is the pituitary incidentaloma, defined as the discovery of a pituitary adenoma without clinical signs on a scan or magnetic resonance imaging (MRI) performed for another reason [2]. Adenomas may be non-secreting, revealed by the tumour syndrome possibly associated with signs of hypopituitarism, or secreting [1]. A distinction is made between micro-adenomas, whose largest diameter is less than 10 mm, and macro-adenomas, which may represent large invasive tumours [1].

Pituitary adenomas are responsible for 90% of the aetiologies of anaesthetic pituitary insufficiency (AHI) [3]. Hypopituitarism is defined as the deficiency of one or more pituitary lineages (panhypopituitarism when all 5 lineages are deficient) [3]. Hypopituitarism is caused by compression of healthy anteropituitary cells or stem cells by the adenoma [3]. Treatment of AHI must have three main objectives: replacement of hormonal

deficits, prevention of acute decompensation and aetiological treatment (surgical intervention in the case of pituitary macroadenomas).

We report here a case of pituitary macroadenoma complicated with panhypopituitarism discovered incidentally in the setting of macroangiopathic complications of type 2 diabetes at the reference health centre in commune III of the Bamako district.

OBSERVATION

Patient aged 56, male, veterinary surgeon, type 2 diabetic on METFORMINE 1000 MG since October 2023, currently on treatment interruption, with a personal history of arterial hypertension since November 2023 on AMLODIPINE 10 MG and asthmatic since childhood on VENTOLINE SPRAY, admitted on 20.11.2023 for a new-onset deficit syndrome, seven days before his diabetology consultation. This syndrome was associated with exertional dyspnoea and physical asthenia. The patient was admitted to hospital for further management. On admission, the following parameters were noted: blood pressure 160/90 mmhg, heart rate 121 beats/minute, weight 83 kg for 175 cm (BMI 27.12 kg/m2). Physical examination revealed right hemiparesis with reduced motor skills assessed at 4/5, and difficulty standing up. There were no disorders of the cranial pairs. There were no visual disturbances or dizziness.

A brain scan revealed a 27x22 mm pituitary macroadenoma with no abnormalities of the optic chiasm or carotid arteries (Figure 1).

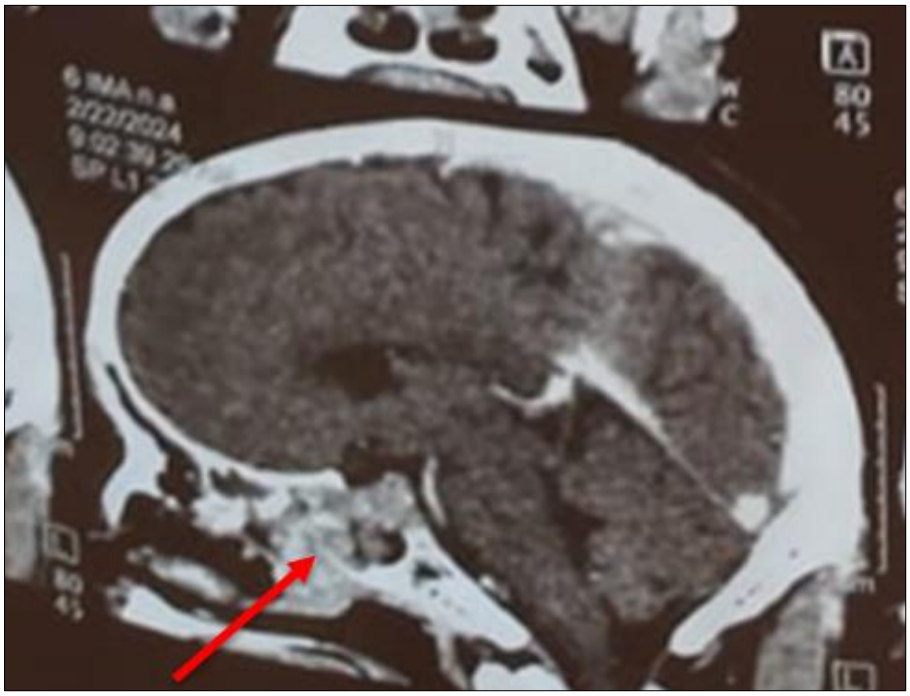

Figure 1: Sagittal section of a brain scan showing a pituitary macroadenoma

The hormonal work-up carried out to search for a pituitary adenoma is summarised in

Table 1

Hormones	Patient values	Normal values
Cortisolaemia at 8 hours (ng/ml)	7	60-285
ACTH	6,2	5-60
TSH-us (µUI/ml)	0,531	0,27-4,7
FT4 (ph/L)	13,7	9-20
FT3 (pg/L)	3,8	4- 8,3
Prolactinemia (ng/ml)	3	5-25
Testosterone (ng/ml)	2	3-10,60
FSH (UI/L)	8,6	1,7-12
LH (UI/L)	3,9	1,1-7
GH (ng/ml)	0,05	inf à 6,70

The patient was started on HYDROCORTISONE 30 mg/day and LEVOTHYROX 25 µg/day. In terms of diabetes management, he was put on MIXTARD 30 in view of the chronic imbalance (HbA1c 10%) and arterial hypertension on AMLODIPINE/VALSARTAN 10/160 MG to replace ALMODIPINE 10 MG. After a few days in hospital, the patient progressed favourably and was referred to the neurosurgery department at Mali Hospital, where he was hospitalised from 2 to 27 February, during which time the adenoma was removed. Anatomopathological examination of the surgical specimen concluded that it was a pituitary adenoma.

DISCUSSION

We report a case of pituitary macroadenoma complicated by panhypopituitarism discovered incidentally during a work-up for degenerative complications in a 56-year-old man with type 2 diabetes. The mean age in a study carried out in the black Afro-Caribbean population was 59 [4], similar to that in our case. In the same study, the majority of patients were men, with a sex ratio of 1.52 [4]. The same male predominance was observed in the study by Maïga HA in a Brussels clinic [5]. This was a case of pituitary incidentaloma complicated by pan hypopituitarism. The adenoma was discovered incidentally during an assessment of the impact of diabetes, unexplained headaches or unexplained weight gain (27.27% in the study by Maïga HA [5]. The patient's symptomatology was poor, but this poses a diagnostic problem. In our case, the patient presented with physical asthenia and headaches.

The two main clinical pictures found in the study carried out in the black Afro-Caribbean population were visual disorders (47.9% of cases) and pituitary tumour syndrome (37.5% of cases) [4].

The patient presented with adrenal corticotropic insufficiency with clinical asthenia and biological signs of 8-hour cortisol at 7 ng/ml and normal low ACTH at 6.2 ng/L; thyroid insufficiency with TSH-us at 0.531 µIU/ml, FT4:13.7 pmol/L and FT3 at 3.8 pg/L; lactotropic insufficiency with prolactinemia at 3 ng/ml, hypogonadotropic hypogonadism with testosterone at 2 ng/ml, FSH at 8.6 IU/L, LH at 3.9 IU/L and somatotropic insufficiency with GH at 0.05 ng/ml.

A brain scan revealed a pituitary macroadenoma measuring 27x22 mm with no abnormalities of the optic chiasm or carotid arteries. Mendane Ekobena F also found a pituitary macroadenoma on brain magnetic resonance imaging [6]. Similarly, in the study by Mayanda Ohouana RL, 71.4% (10 cases) of patients had a macroadenoma compared with 28.6% [7].

Substitution for corticotropic deficiency is based on hydrocortisone at an average dose of 20 mg/d divided into two doses taken morning and midday in adults [3]. Thyrotropic deficiency is treated with oral LT4. The usual dose is between 100 and 150 µg of LT4 per day [3]. In our case, the patient was supplemented with HYDROCORTISONE 30 mg/day and LEVOTHYROX 25 µg/day.

After a few days in hospital, the patient had a favourable outcome and underwent surgical removal of the adenoma in February 2024 in the neurosurgery department of Mali Hospital.

Anatomopathological examination of the surgical specimen concluded that it was a pituitary adenoma. In the Brussels study [5], the prevalence of non-functioning adenoma was 18.18%. Pathological examination of the surgical specimen in one case in the N Bra' Eyatcha Bimingo study revealed a non-secreting macroadenoma with acidophilic cells [8].

CONCLUSION

This is a case of pituitary macroadenoma complicated by panhypopituitarism, discovered incidentally during a work-up of degenerative complications in a type 2 diabetic patient. Beyond the diagnostic difficulties and limitations, multidisciplinary management of these patients is essential.

Declaration of Link of Interest: The authors declare no conflict of interest.

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