

Rare Case of Multiple Endocrine Neoplasia Type 1 in Algeria: Breast Cancer (hyperprolactinemia), Cushing's Syndrome and Empty Sella Syndrome

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Abstract : *Multiple endocrine neoplasia type 1 (MEN1) syndrome is a hereditary disorder, sometimes it is sporadic. The prevalence of MEN1 in the general population is estimated to be between 1/20 000 and 1/60 000 inhabitants [1]. In our study, we found 22 cases of MEN1 from the north, south and east hospitals of Algeria, in 5 years of research. This is too lower than other countries prevalence. Two-thirds of all cases are female patients. We found a rare case, female has hyperparathyroidism and breast cancer (hyperprolactinemia) associated with an empty Sella and Cushing's syndromes. After biological analyzes, normal levels of ACTH and cortisol were found, and a high level of PTH. After an exhaustive personal and family history and clinical assessments, we considered as a case of MEN1 disease that triggered by a pituitary tumor with or without hypothalamic tumor, followed by breast cancer and hyperparathyroidism.*

Keywords: Multiple endocrine neoplasia type 1 (MEN1) syndrome, hyperprolactinémie, Cushing syndrome, Empty Sella Syndrome

1. Introduction

Multiple endocrine neoplasia type 1 (MEN1) is a rare disorder that causes tumors, generally in the parathyroid and pituitary glands, pancreas. Other endocrine and non-endocrine neoplasms including adrenocortical and thyroid tumors, visceral and cutaneous lipomas, meningiomas, facial angiofibromas and collagenomas, and thymic, gastric, and bronchial carcinoids also occur [2].

The diagnostic criteria of the NEM1 syndrome according to the recommendations of the 5th Workshop on the Multiple Endocrine Neoplasia (Stockholm, 1995) are:

The presence of a minimum of two of the following signs evokes MEN1:

- 1) Primary hyperparathyroidism with pluri-glandular hyperplasia and / or adenoma and / or recurrence of primary operated hyperparathyroidism
- 2) Endocrine tumors in the duodenum and pancreas, functional tumors (Gastrinoma,
- 3) Insulinoma, Glucagonoma, other rare secretions) or non-functional tumors
- 4) Functional anterior pituitary tumors (GH, PRL, ACTH adenoma, etc.) or non-functional or with multi-secretory profile (GH +/- PRL +/- LH-FSH +/- TSH +/- ACTH)
- 5) Endocrine tumors of the adrenal cortex with or without hyperplasia, functional (Conn's adenoma, Cushing's syndrome) or non-functional
- 6) Endocrine tumors with thymic and / or bronchial localization
- 7) A first-degree relative has at least one of the major lesions 1 to 5 [3 - 4].

In the context of studying the MEN 1 in Algeria, we found a rare case in which we will be exposed later in a clinical study

2. Literature Survey

Observation and Approach

Ms. R.D., 47 years old, mother of 4 living children and one daughter who died at 6 months (undetermined causes), hypertensive (hypertension at an early age), and had rheumatoid arthritis in 2001.

She had a hyperprolactinémie, discovered in 2008 in the context of exploration of a persistent Galactorrhea after stopping breastfeeding without cycle or fertility disorders, and whose exploration found an empty Sella under dopamine agonists (PARLODEL type and NORPRLAC).

The patient is in good general condition but criteria of Cushing's syndrome were observed (Asthenia, erythritic puffy face, facio-truncal fat distribution and a cutaneous fragility with vertical purple fine stretch marks on the flanks and roots of the limbs).

Biological assessment shows a normal rate of ACTH. We did not do Hypothalamic-Pituitary MRI (Magnetic resonance imaging) because the patient could not stand it. In 2012, she operated on infiltrating ductal carcinoma of the left breast with lymph node dissection and 6 courses of chemotherapy.

A phosphocalcic assessment was requested which returned to a high level of PTH (10 µg / ml) with normal serum calcium.

3. Results

After an exhaustive family history, the patient was found to have first-degree relatives with some lesions of MEN1 syndrome (her mother is hypertensive with normo-calcemic hyperparathyroidism and her niece with a Thyroid disease not determined); we put the patient under surveillance.

One year later, radiological reports show: Thyroid nodules, micro-opacities of benign appearance in the right Breast, no echo-detectable anomaly on the other organs (kidneys, liver, pancreas, bladder, and uterus).

4. Conclusions

The absence of hypothalamic-pituitary MRI leads us to hypothesize that this case is conceded as a rare case of MEN1 triggered by a tumor of the hypothalamus with or without a pituitary tumor causing hyperprolactinemia. This last triggered breast cancer.

This case resembles the 2 published cases, one of the cases is filed in 2013 poster in Tunisia (Cushing Syndrome with Empty Sella) and the other is published by Jean Seigneul in 1982 (hyperprolactinemia associated with an empty Sella). A genetic assessment was also requested (sequencing of the NEM1 gene); the results of this review can help us confirm our hypothesis

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References

- [1] Chanson P, Murat A, Cadiot G, Calender A (2009), N oplasmie endocrinienne multiple de type 1. Elsevier Masson SAS , 10-036-A-05.
- [2] Francesca Marini, PhD, Alberto Falchetti, MD, PhD, Ettore Luzi, PhD, Francesco Tonelli, MD, and Brandi Maria Luisa, MD, PhD, Multiple Endocrine Neoplasia Type 1 (MEN1) Syndrome, 2008, Cancer Syndromes , Editor: Douglas L Riegert-Johnson, MD; Associate Editors: Lisa A Boardman, MD, Timothy Hefferon, PhD, and Maegan Roberts, MS CGC book .
- [3] le Conseil Scientifique du GTE (Groupe d' tude des Tumeurs Endocrines), Livret de recommandation sur la N oplasmie Endocrinienne Multiple de type 1 (NEM1), 2006.
- [4] Brandi ML, Gagel RF, Angeli A, Bilezikian JP, Beck-Peccoz P, Bordi C, Conte-Devolx B, Falchetti A, Gheri RG, Libroia A, Lips CJ, Lombardi G, Mannelli M, Pacini F, Ponder BA, Raue F, Skogseid B, Tamburrano G, Thakker RV, Thompson NW, Tomassetti P, Tonelli F, Wells SA Jr, Marx SJ (2001). Guidelines for diagnosis and therapy of MEN type 1 and type 2. *J Clin Endocrinol Metab* 86: 5658-71