



## Idiopathic SIADH: 4 years of diagnostic wandering

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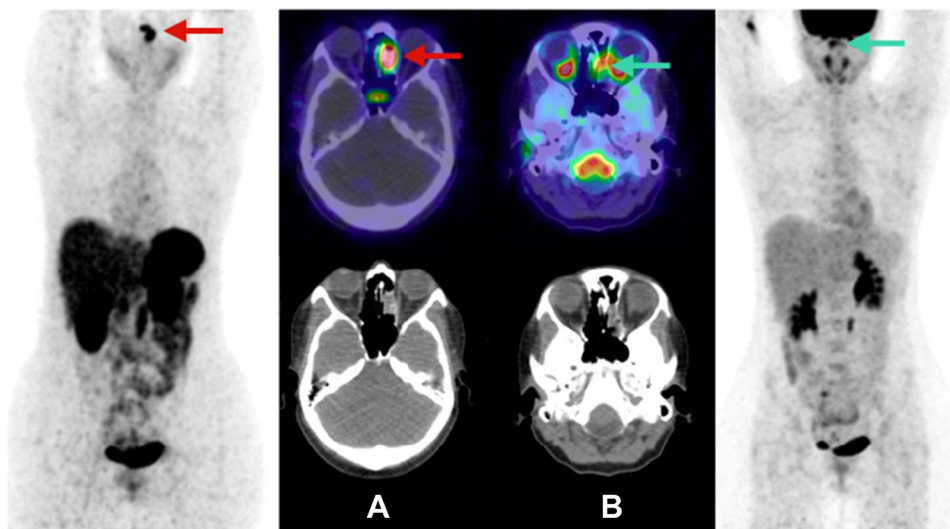
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A 39-years-old woman was initially admitted for psychomotor slowing. Hyponatremia was the lone abnormal finding, without any lesion on conventional imaging (i.e., brain, thoraco-abdominal contrast-enhanced CT, and cerebral MRI), biologic infectious sign, or cerebrospinal fluid abnormality. Three consecutive whole-body <sup>18</sup>F-fluorodeoxyglucose (<sup>18</sup>F)FDG positron emission tomography (PET)/computed tomography (CT) were performed on the following years and interpreted as normal. Considering the possibility of neuroendocrine tumor-related syndrome of inappropriate secretion of antidiuretic hormone (SIADH), [<sup>68</sup>Ga-DOTA,1-Nal<sup>3</sup>]-octreotide ([<sup>68</sup>Ga]Ga-DOTA-NOC) PET/CT was realized and showed a left ethmoidal thickening with intense overexpression of somatostatin receptors (Figure A).

This lesion was resected, and the pathological analysis revealed a low-grade olfactory neuroblastoma

(esthesioneuroblastoma). When retrospectively reviewing the study, a slight [<sup>18</sup>F]FDG uptake is observed, partially masked by the physiological intense activity of neighboring frontal lobe and ocular muscles (Figure B).

Small-cell lung cancer is the most frequent cause of paraneoplastic SIADH [1], but many other malignant and non-malignant conditions may also be involved. Among these, esthesioneuroblastoma is a rare malignant neoplasm of the sinonasal tract derived from the olfactory epithelium. It can occur at any age, and it is exceptionally associated with a SIADH [2]. Very few case reports highlighted high expression of somatostatin receptors in esthesioneuroblastomas [3], and only one was associated with SIADH [4]. Despite the scarcity of such association, this case illustrates the value of [<sup>68</sup>Ga]Ga-DOTA-NOC PET/CT in the management of unexplained SIADH.



This article is part of the Topical Collection on Image of the month.

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## Declarations

**Ethical approval** All procedures were performed in accordance with the principles of the 1964 Declaration of Helsinki and its later amendments or comparable ethical standards. The study design and exemption from informed consent were approved by the Institutional Review Board of Liege University Hospital.

**Informed consent** For this type of study, formal consent is not required.

**Conflict of interest** The authors declare no competing interests.

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