

## Pitfalls in the diagnosis of neuroendocrine tumors: atypical clinical and radiological findings as cause of medical mistakes

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### ABSTRACT

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**Aims and background.** Carcinoids are infrequent neoplasms arising from neuroendocrine cells. Due to blurred symptoms and the presence of equivocal diagnostic findings, these tumors are sometimes misdiagnosed. Therefore, increased rates of false neuroendocrine tumors represent an emerging problem in clinical practice. Our aim is to alert clinicians on this matter by supplying them with useful warnings.

**Methods.** In the specialized neuroendocrine tumor study Center Centro di Riferimento per lo Studio e la Cura dei Carcinoidi e dei Tumori Neuroendocrini (Ce.Ri.Ca.), some patients highly suspected to have a neuroendocrine tumor have been recognized as having false neuroendocrine tumors. The related clinical and instrumental findings leading to a previous wrong neuroendocrine tumor diagnosis are reported.

**Results.** From July 2006 to December 2008, 88 consecutive cases of neuroendocrine tumors (Nets) were referred at Ce.Ri.Ca. In the former group, 8 cases of false Nets were discovered while in the remaining 80 cases a correct Net diagnosis was carried out. Watchful differential diagnoses and skill appraisal of laboratory investigations resulted in: chronic atrophic gastritis with enterochromaffin-like cell hyperplasia (4 cases), estrogen-deprivation syndrome (1), hypochondriac disorder (1), metabolic syndrome (1), and sarcoidosis (1).

**Conclusions.** Neuroendocrine tumors are still relatively known clinical entities. To discriminate false neuroendocrine tumors from neuroendocrine tumors requires a good expertise and a large daily practice with the disease. Good knowledge and skillfulness in identifying biochemical alterations and false radiological positive results could avoid both patient inconvenience and very expensive workup. The importance of a multidisciplinary approach in specialized centers is emphasized.

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**Key words:** chromogranin-A, false positive, common diagnostic pitfalls, neuroendocrine tumors, octreoscan.

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