Spindle cell oncocytoma (SCO) of the pituitary gland is a relatively recently established, very rare subtype of adenohypophysis tumours that was introduced as a distinct clinicopathological entity in the fourth edition of WHO classification of the central nervous system tumours (2007). It is non-endocrine neoplasm of the anterior pituitary that occurs in adults and usually follows a benign clinical course, corresponding to WHO grade I. Up to now, pituitary SCO have been reported occasionally and only 14 cases of SCO have been documented in the literature. Because of their rarity, the pathogenesis and natural history of these tumours have not been fully characterized. We report two additional cases of SCO occurring in females aged 63 years (Case 1) and 65 years (Case 2), who presented with pan-hypopituitarism, headache and visual field defect. In both cases, the magnetic resonance imaging showed solid sellar mass of moderate size with suprasellar extension. The clinical and radiological features suggested non-functioning pituitary macroadenomas without evidence of invasive growth. One patient presented with tumour recurrence 3 years after undergoing the previous surgical removal of tumour, which was initially misdiagnosed as schwannoma. The first tumour was removed by transsphenoidal surgery and the second one by frontal craniotomy. Histologically and immunohistochemically, both tumours displayed the features typical for SCO of the pituitary. They were composed of interwoven fascicles of spindle cells exhibiting abundant eosinophilic cytoplasm of oncocytic or granular appearance. Mitoses were rarely observed and necrosis was absent. In one case, the advanced lymphocytic infliltration was observed within neoplastic tissue. The tumour cells exhibited immunoreactivity for S-100 protein, galectin-3, vimentin and epithelial membrane antigen but they were negative for GFAP, anterior pituitary neuroendocrine markers (prolactin, growth hormone, TSH, ACTH, FSH, LH), chromogranin, synaptophysin, cytokeratin CK (AE1/AE3), smooth muscle actin, desmin, CD34 and CD68. MIB1 labeling index did not exceed 10%. Ultrastructurally, the tumour cells were rich in mitochondria with lamellar cristae. Moreover, in Case 2 some tumour cells showed a number of giant mitochondria with severely destructed internal matrix. Spindle cell oncocytoma of the anterior pituitary is often misdiagnosed entity of uncertain histogenesis. It should be considered in the differential diagnosis of various sellar-region lesions of oncocytic morphology [1)].

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Matyja E, Maksymowicz M, Grajkowska W, Olszewski W, Zieliński G, Bonicki W. Spindle cell oncocytoma of the adenohypophysis - a clinicopathological and ultrastructural study of two cases. Folia Neuropathol. 2010;48(3):175-84. PubMed PMID: 20925001.