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Fang et al. describe a very rare case of nonfunctional pituitary neuroendocrine tumor (NFPA) that exhibited corticotrophic activity after resection and radiotherapy. The possible mechanisms of the transformation from NFPA to Cushing disease (CD) are discussed.A 43-year-old man presented with impaired vision, bilateral frontal headaches, and hyposexuality. He had no symptoms suggestive of hypercortisolism, and 8 am plasma cortisol concentration was 67.88 ng/mL. Brain imaging revealed a 15 × 15 × 21-mm sellar mass suggestive of a macroadenoma. The tumor was resected by transsphenoidal surgery and identified by immunohistochemical analysis as a chromophobic adenoma that did not stain for pituitary hormones. The patient was treated with prednisone and levothyroxine replacement therapy. After a third recurrence, the patient presented with clinical features and physical signs of Cushing syndrome. Plasma adrenocorticotropic hormone (ACTH) and cortisol concentrations were elevated, and there was a loss of circadian rhythms. Inferior petrosal sinus sampling after desmopressin showed the central-peripheral ACTH ratio was greater than 3:1. A repeat transsphenoidal resection was undertaken. Immunohistochemistry revealed ACTH positivity. Three months following surgery, imaging showed little residual tumor, but plasma ACTH remained elevated. He was referred for postoperative Gamma Knife radiotherapy.The immunological activity and biological features of the hormones secreted from a pituitary neuroendocrine tumor vary with time. Because long-term outcomes are unpredictable, postoperative follow-up is essential to detect postoperative transformation from NFPA to CD [1].

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Fang H, Tian R, Wu H, Xu J, Fan H, Zhou J, Zhong L. Cushing Disease After Treatment of Nonfunctional pituitary neuroendocrine tumor: A Case Report and Literature Review. Medicine (Baltimore). 2015 Dec;94(51):e2134. doi: 10.1097/MD.0000000000002134. PubMed PMID: 26705201.