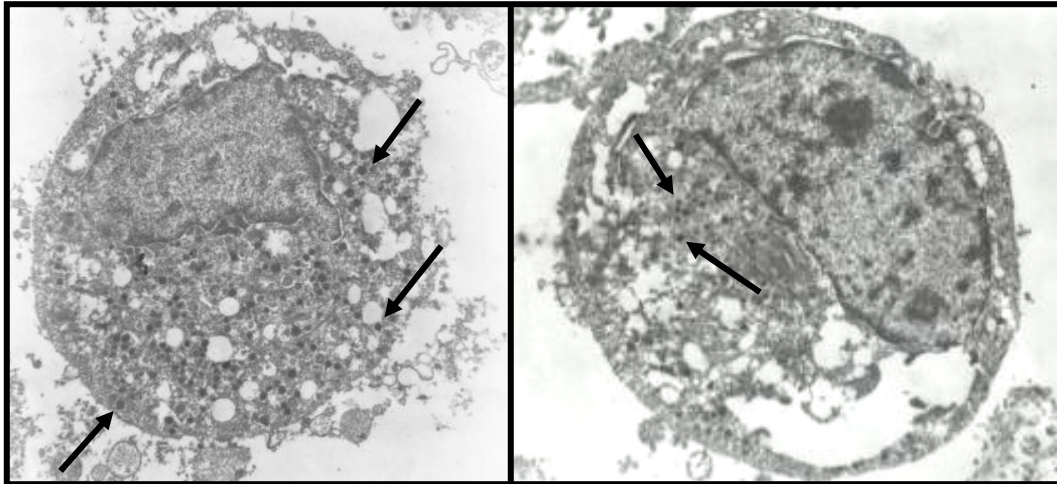


GONADOTROPHIC PITUITARY CARCINOMA OF LATE DEVELOPMENT AFTER RADIOTHERAPY TREATMENT OF MACROPROLACTINOMA. ULTRASTRUCTURAL IDENTIFICATION. Alma Ortiz-Plata, Martha Lilia Tena-Suck, Citlaltepelt Salinas-Lara, Aurora Sánchez-García, Daniel Rembao-Bojórquez. Neuropathology Department. National Institute of Neurology and Neurosurgery. México City. México. E-mail: aortiz@innn.edu.mx

Human pituitary adenomas (PA) account among 10% to 15% of intracranial neoplasm, are frequently treated by neurosurgical procedures usually removal by the transsphenoidal approach. Clinically they are manifested by endocrine alterations because of the high hormonal secretion of one or more hormones, and due to neighbor structures invasiveness, between other causes. They have been classified in accord with their size, histological characteristics and hormone secretion. The pituitary adenomas ultrastructural analysis has an important role in the identification and clinic-pathological correlation. They are regarded benign neoplasias because of their histological aspect, and low metastasis index. There are rare case reports of a second tumor development different of the first one before radiation therapy. Intracranial dissemination of pituitary adenomas is a rare event that does not equate with malignancy, but most of the reported cases have been interpreted as metastasis from a pituitary carcinoma [1,2]. On the other hand, it is accepted that the conclusive diagnosis of pituitary carcinoma rests upon the morphologic examination of the metastatic deposit in a patient with a known history of pituitary tumor. Here we present the case of a 32 years old woman that 12 years before of a pituitary adenoma, developed a lateral ventricle tumor that infiltrated the left cerebral hemisphere, this tumor histologically corresponded to a papillary carcinoma. For each tumor, 5 μ m-thick sections were done from paraffin-embedded blocks of formalin-fixed tissue. They were stained with hematoxylin-eosin and Immunohistochemistry using pituitary hormones (PRL, GH, ACTH, TSH, FSH, LH). Tumor fragment from paraffin block was deparaffinized, and electron microscope processed. One μ m sections were toluidine blue stained, ultrathin sections were uranyl acetate-lead citrate contrasted. The first biopsy showed a small, homogeneous, epithelial cell tumor without a distinctive no pattern or cell atypia. It corresponded to a pituitary adenoma. The second biopsy showed an epithelial tumor that formed papillae and irregular cords, with fibrous-connecting stalks, some cell atypias, no mitosis, with some foci of necrosis and hemorrhage. The diagnosis was a papillary carcinoma. The immunohistochemistry results of the pituitary hormones were: positive for prolactin on the first biopsy and for FSH and ACTH in the second biopsy. At electron microscope level we observed epithelial cells with fixing and processing artifices, however, we clearly appreciated secretion granules that confirm the diagnosis of secretor pituitary tumor. There are reports of post-radiation pituitary carcinomas [3, 4], which produce different hormones than the original tumor, like in this case [5]. Here we show the electron microscopy analysis relevance in pituitary adenomas diagnostic. With the ultrathin sections it was possible to identify the cellular origin of the tumor although the processing artifices.

- [1] Ciric L.O, et al. J Neurosurg 1993, 59: 395-401.
- [2] Muracciole X, Cowen D, Regis J. Neurochirurgie. 2004, 50: 414-20.
- [3] Taya K, Terao T, Nakazaki H, Sawauchi S, Numoto RT, Murakami S, Yamaguchi Y, Hashimoto T, Abe T. No Shinkei Geka. 2004, 32: 279-84.
- [4]Vaquero J, Herrero J, Cincu R. J of Neuro-Oncol 2003, 64: 255-258.
- [5] Pernicone PJ, Scheitahuer BW. invasive pituitary adenomas and pituitary carcinomas. In: Lloyd RV (eds) Surgical Pathology Of the Pituitary Gland WB Saunders, Philadelphia 1993, pp121-136.



Gonadotrophic pituitary adenoma. Tissue fragment taken from paraffin block and processed for electron microscopy. It was observed secretion granules (arrows) that show the pituitary origin of the tumor. Uranyl acetate – lead citrate. 17,520 X.