**Paraneoplastic gynecomastia revealing a mixed hCG, free βhCG and**

**α subunit-secreting non small cell lung cancer (SCLC)**

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INTRODUCTION

Although gynecomastia is a common disorder, the recognition of paraneoplastic gynecomastia is important for both the diagnosis of the tumor and the prognosis of the patient. Gynecomastia with ectopic and simultaneous secretion of hCG, free βhCGand alpha subunit is a rare form of revealing a NSCL cancer.

CASE REPORT

A 57-year-old man presented with a bilateral painful gynecomastia. Hormonal evaluation revealed high levels of total hCG: 2285 UI/L (0-2), hCG β-subunit : 303 (0-2 mU/L), alpha subunit: 1,43 UI/l (<0,8), estradiol 84 ng/ml (<25), and testosterone: 10,5 ng/ml (3-10) and suppressed levels of luteinizing hormone and follicle-stimulating hormone. The markedly elevated serum values of beta-hCG initially prompted the medical team to investigate germinal tumors. As testicular ultrasound was unremarkable, an extratesticular source of hCG hormonal production was investigated. CT scan of the chest demonstrated a 63x50 mm tumor in the upper lobe of the left lung. The tumor had increased glucose uptake at PET scan and a homolateral hypermetabolic adenopathy was detected (T2N2MO). A fibrobronchospy was undertaken: multiple biopsies revealed a small cell lung carcinoma. The patient underwent chemotherapy and external radiotherapy of the left upper lobe of the lung. After treatment, the levels of total and free ß hCG, alpha subunit and estradiol rapidly decreased whereas gonadotropin levels and testosterone normalized. The gynecomastia resolved completely within 3 months. After three years of follow up, the patient remains with clinical, biochemical (hCG and alpha subunit levels) and PET scan criteria of cancer remission.

DISCUSSION

β-human chorionic gonadotropin (β-hCG) is commonly produced by germ cell tumors. It has also been noted in gastric, ovarian, liver, and lung cancers. Despite this, lung cancer with β-hCG production is rare, and only a few case reports have been published in the literature. Some studies indicate that hCG acts as an autocrine/ paracrine growth factor by inhibiting apoptosis. Thus, βhCG elevation in SCLC seems to be a marker of more resistant tumours and of poor prognosis. Moreover, paraneoplastic gynecomastia depends on the estrogen/testosterone imbalance induced by elevated total hCG. This case exemplifies that hormonal work-up should be done in an adult patient presenting with recent onset of painful gynecomastia. Although rare, non germinal tumors such as lung cancer should also be considered in the differential diagnosis of gynecomastia attributable to ectopic production of hCG, free βhCG and alpha subunits.

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