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### **Clinical Update 5-7 November 2007**

**A 59 yr old man with Amiodarone-Treated Paroxysmal Atrial Fibrillation (PAF) and Recurrent Thyrotoxicosis**, Dr S Kang, Diabetes and Endocrine Centre, Doncaster Royal Infirmary.

**Presenting Complaint:** 59 year old man referred for consideration of radio-iodine therapy following a relapse of thyrotoxicosis after a 12 month course of carbimazole treatment. Immediately prior to the first diagnosis of thyrotoxicosis, he had received 3 months of oral amiodarone for PAF. The amiodarone was discontinued at diagnosis of thyrotoxicosis.

**PMH:** Recent diagnosis of localised carcinoma of the prostate treated with radiotherapy the previous year. PAF.

**Examination:** ?Mild thyrotoxicosis, thyroid just palpable, no dysthyroid ophthalmopathy. AF 90/min.

**Investigations:** Free T4 36 pM (NR 9.0 – 24), Free T3 11.9 pM (NR 2.2 – 5.5), TSH 2.13 mU/L (NR 0.35 – 5.5). (Review of old notes revealed that TFTs had been similar immediately prior to starting amiodarone the previous year). Assay by Supra-regional laboratory failed to detect interference by heterophile antibodies. Alpha-subunit 2.45 (NR < 1). SHBG 85 nM (NR 10-75). TRH test for TSH: 2.44, 2.16, and 2.40 mU/L (0, 20 and 60 min). Basal prolactin 12 mU/ L (NR 35 – 450).

OGTT: Basal GH 2.1 mU/L and suppressing to 0.9 mU/L by 60 min. Plasma glucoses in diabetic range (Fasting 7.6mM, 120 min 18.2 mM). IGF-1 138 ug/L (NR 65-251).

Testosterone 13.8 nM (NR 6.9 – 28), LH 3.4 U/L (NR 1.5 – 9.3), FSH 13.9 U/L (NR 1.4 – 18.1). Short synacthen test: Basal cortisol 462 nM, 30 min cortisol 656 nM.

FBC, ESR, U+E , LFTs and Calcium Normal. PSA 30 ng/ml (NR 0 – 3).

MRI showed a mushroom shaped mass (35 x 20 x 20mm) arising from the pituitary fossa with suprasellar extension impinging on the optic chiasma and extension to cavernous sinuses bilaterally. Goldman perimetry revealed a subtle paracentral bitemporal hemianopia but normal colour vision.

**Summary and Learning Points:** The case illustrates the presentation of a TSHoma (without co-secretion of prolactin or GH). The differential for the presenting TFTs is usually between selective Pituitary Resistance to Thyroid Hormone (PRTH) and a TSHoma. The biochemistry (elevated alpha-subunit and SHBG and a flat TRH

response) favours a TSHoma with the MRI findings supporting this. The case also illustrates the potential for misdiagnosis in such cases who are often subjected to inappropriate ablative thyroid therapy (surgery or radio-iodine), which fails to cure the underlying problem and often results in an accelerated expansion of the pituitary tumour.