Thyroid

THYROID CANCER CASE REPORTS I

Primary Hyperparathyroidism and Papillary Thyroid Carcinoma, Association or Coincidence?
Nitish Singh Nandu, MD1, Janice L. Gilden, MD,BA,MS2
1CHICAGO MEDICAL SCHOOL AT ROSALIND FRANKLIN UNIVERSITY OF MEDICINE AND SCIENCE, North Chicago, IL, USA. 2RFUMS/Chicago Med School & AMITA St Mary’s Medical center, North Chicago, IL, USA.

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Background: The Parathyroid glands originate from the Pharyngeal pouches, Inferior from the third and superior from the fourth. Rarely these glands migrate to the thyroid gland, isthmus or thymus and become ectopic. Primary Hyperparathyroidism (PHPT) is a common cause of hypercalcemia in ambulatory patients. It is also more frequent in women and increases with age. Its treatment is often surgical removal of the affected parathyroid gland. We present a case of an ectopic parathyroid adenoma hidden within the thyroid lobe, treated by thyroid lobectomy ultimately leading to the diagnosis and management of Papillary thyroid carcinoma. Case report: A 73-Year-old female with DM, HTN, hyperlipidemia, osteoporosis was referred to the Endocrine clinic for a history of fractures to the right upper and lower extremities after trivial falls. She was subsequently evaluated for metabolic bone disease, noted to have a PTH 78 (n=14-64 pg/ml) with a total serum calcium 9.7 (n=8.6-10.4 mg/dl), 25-OH Vit-D 14 (n=30-100 ng/ml), urinary calcium to creatinine ratio 20 (n=10-320 mg/g). The parathyroid scan showed persistent activity in the area of the inferior margin right thyroid lobe, suggesting a parathyroid adenoma. She had a parathyroidectomy and during the procedure, the parathyroid gland was unable to be visualized. Hence the Right inferior thyroid lobe was removed. The pathology also showed papillary thyroid carcinoma and the patient had a total thyroidecmy. Discussion: The relationship between PHPT and Papillary thyroid carcinoma still remains unclear. Our patient demonstrated a rare circumstance, wherein the presence of a parathyroid adenoma within the thyroid gland has led to early diagnosis and timely treatment of papillary thyroid carcinoma. Few authors reported thyroid malignancy as the most prevalent cancer among patients with PHPT as the primary disorder. While others report concurrence as a coincidental pathology. Nevertheless, we emphasize the importance of surveillance for thyroid pathology in patients with PHPT that can provide better overall patient outcomes.

References:
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Reproductive Endocrinology

CLINICAL STUDIES IN FEMALE REPRODUCTION II

Efficacy of High Intensity Intermittent Training for Improving Cardio-Metabolic Health in Women with Polycystic Ovary Syndrome: A Pilot Study
Rhianon Kate Patten, MSc, Luke McIlvenna, MSc, Alba Moreno-Asso, PhD, Nigel NIGEL Stepto, PhD, Danielle Hiam, PhD.
Victoria University, Melbourne, Australia.

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Efficacy of HIIT for Improving Cardio-metabolic Health in Women with Polycystic Ovary Syndrome: a Pilot Study
Polycystic ovary syndrome (PCOS) is a common and complex endocrinopathy with reproductive and metabolic manifestations, carrying a major health and economic burden. Exercise training has consistently been found to improve clinical outcomes in women with PCOS, but shortfalls with exercise prescription are evident. Research suggests that high intensity intermittent exercise (HIIT) is feasible, well tolerated and enjoyable for people with or at risk of chronic disease and can address many of the shortfalls and barriers to exercise participation. To investigate the effects of high intensity exercise, twenty-four reproductive aged,
overweight and obese, previously sedentary women with PCOS were recruited from the community and randomised to complete either 12 weeks of moderate intensity continuous cycling exercise (MOD; 50-60% of maximal heart rate [HR_{max}]; n=11) or HIIT (90-95% HR_{max}; n=13). All exercise was supervised by an exercise physiologist and completed 3 times per week on a cycle ergometer. Baseline and post testing measures consisted of peak oxygen consumption (VO_{2peak}) determined by a graded maximal exercise test, insulin sensitivity determined by hyperinsulinaemic-euglycaemic clamp, body composition outcomes and anti-mullerian hormone (AMH). Enjoyment was also measured throughout the intervention using feeling scales. Significant improvements were seen for VO_{2peak} after HIIT with an average increase of 5.6 ± 2.5 mL.kg⁻¹.min⁻¹ (P=0.013) and non-significant increases in the MOD group (3.4 ± 2.1 mL.kg⁻¹.min⁻¹; P=0.20). Body composition, fasting insulin and AMH values remained unchanged in both groups. Non-significant improvements in glucose infusion rate (3.3 ± 2.8 mg.lbmkg⁻¹.min⁻¹; P=0.06) and insulin sensitivity index (M-to-I ratio; 3.0 ± 3.8 mg.lbmkg⁻¹.min⁻¹[mU/l]⁻¹ x 100; P=0.17) were found as a result of HIIT compared to no changes after moderate intensity exercise. Importantly, HIIT was also found to be more enjoyable than moderate intensity continuous exercise. The present study is the first to compare current exercise recommendations of moderate and vigorous intensities in women with PCOS. The results of this study provide preliminary validation of HIIT and should be considered for improving cardio-metabolic health in women with PCOS.

Diabetes Mellitus and Glucose Metabolism

**DIABETES COMPLICATIONS II**

**Worsening Diabetes Control in Breast Cancer Patients Treated with Alpelisib**

Robert Geier, MD¹, Nisreen Abu Al Hommos, MD², Ebenezer A. Nyenwe, MD², Anita Eapen, MD³.

¹UTHSC, Memphis, TN, USA, ²UTHSC, bartlett, TN, USA, ³Univ of Tennessee, Germantown, TN, USA.

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Title: Worsening Diabetes Control in Breast Cancer Patients Treated with Alpelisib

Introduction: A new phosphatidylinositol-3-kinase (PI3K) inhibitor, alpelisib (Piqray) has been recently approved for the treatment of breast cancer. Severe hyperglycemia has been reported as an adverse effect. Many breast cancer patients also have diabetes mellitus type 2 which puts them at a higher risk for this adverse effect.1 2 Case description: Patient is a 73 year old Caucasian woman with history of insulin treated type 2 diabetes mellitus and breast cancer who presented to the hospital with a left hip fracture. She has been recently started on alpelisib with worsening glycemic control. Glycemic control improved after alpelisib was held for 5 days. She resumed taking alpelisib and had an up titration of the insulin regimen. During her hospital stay, she suffered from hyperglycemia as high as 558 mg/dl. HbA1c increased to 11.3% from 6.5% reportedly before starting alpelisib. Patient was discharged on an intensified regimen with close follow up. Discussion: Alpelisib is a PI3K inhibitor used in the treatment of postmenopausal women and men with hormone receptor positive, human epidermal growth factor receptor-2 negative, PIK3CA-mutated metastatic breast cancer. It inhibits PI3K which in turn inhibits protein kinase B (AKT). Insulin binds to insulin receptor substrates which activates PI3K, which in turn activates AKT resulting in translocation of the glucose transporter GLUT4 to the plasma membrane causing an uptake of glucose.