showed a 7 mm nodule on inferior segment of superior left lobe, PET-CT/FDG and OctreoScan® were negative but abnormal uptake was verified by ^{68}Ga-PET in subcarinal area. A sub centimetric lymph node was resected and pathology confirmed ACTH positive NET, although the patient did not achieve remission. Octreotide LAR, cabergoline and ketoconazole did not control hypercortisolism and bilateral adrenalectomy was performed. Then, T-CT showed stable lung nodule and 2nd ^{68}Ga-PET was negative. One year later, T-CT evidenced growth of lung nodule to 15 mm and 3rd ^{68}Ga-PET demonstrated for the first time, abnormal uptake in this area. The patient underwent resection of left superior lung lobe along with ipsilateral hilar lymph nodes, and histopathology study revealed an ACTH-secreting atypical pulmonary carcinoid tumor with Ki67 of 10% and 5 out of 11 lymph nodes affected. ACTH fell from 288 to 64 pg/mL after surgery. Conclusion: Despite the high sensitivity attributed to ^{68}Ga-PET, false negatives have been reported. In the present case, primary tumor was evidenced by ^{68}Ga-PET seven years after the first resection of a metastatic lymph node, in the 3rd ^{68}Ga-PET assessment and after tumor growth. This adds to the evidence that further studies are needed to better assess the accuracy of ^{68}Ga-PET for EAS. Reference: [1] Varlamov *et al*. Diagnostic utility of Gallium-68-somatostatin receptor PET/CT in ectopic ACTH-secreting tumors: a systematic literature review and single-center clinical experience. Pituitary 2019; 22:445–455

Tumor Biology

ENDOCRINE NEOPLASIA CASE REPORTS I

Ga68 Dotatate Detects Ectopic ACTH Secreting Atypical Carcinoid Tumor

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SUN-904

Title Ga68 DOTATATE detects Ectopic ACTH secreting Atypical Carcinoid tumor Introduction Ga-68 DOTATATE PET/CT has been shown to have a significant impact in localizing Ectopic ACTH secreting tumors especially those that are not identified on conventional imaging (CT, MRI). We present a person with a tumor that was reported benign (on biopsy) elsewhere but was found to be the source of the Cushings syndrome and was localized on Ga-68 DOTATATE PET/CT, pathology confirming atypical carcinoid tumor after surgical excision. **Discussion** She was a 63-year-old who presented with a severe proximal myopathy, high urinary free cortisol- 911.6 (µg/day) (<45), elevated ACTH 104(<63), and negative Inferior Petrosal Sinus Sampling. The CT scan demonstrated a small nodule at the right lung base. Axial Ga-68 DOTATATE PET images demonstrated radiotracer activity in the lesion, SUV max of 7.15. Fused Coronal Images showed a 1.9 cm radiotracer avid nodule, that was detected in the medial segment of the right middle lobe. The patient underwent a pulmonary wedge resection. H and E stain of the tumor -Immunohistochemical stains demonstrated that the tumor was strongly positive for synaptophysin and INSM-1 (markers of neuroendocrine differentiation) and the mitotic count was up to 2–3 mitoses per 10 high-power fields, supporting diagnosis as an atypical carcinoid tumor. The patient had significant improvement of symptoms post excision. Somatostatin Receptor (SSR) based tracer Ga-68 DOTATATE PET/CT has a reported sensitivity for detection of 50 % in occult neuroendocrine tumors (NET), with an overall sensitivity of 64 % in a systematic review. It has been shown in retrospective reviews to help with clinical management both at initial diagnosis as well as follow up of Ectopic Cushings in approximately 65% of the cases. SSR analogue tracers like DOTATATE have been noted to be slightly better than FDG PET/CT at localizing ACTH producing bronchial carcinoids while small-cell lung cancers and other aggressive tumors are better visualized on FDG PET. The favorable aspect of Ga-68 DOTATATE includes great tumor to background ratio and the half-life of Gallium 68 that is suitable for transport and delivery. Metastatic NET in conjunction with ectopic Cushing syndrome can be also be treated with peptide receptor radionuclide therapy using either 90Y-DOTATOC and 177Lu-DOTATATE (both SSR based) resulting in improved clinical outcomes.

Thyroid

THYROID CANCER CASE REPORTS I

A Coexisting of Two Different Thyroid Malignancies: A Collision Phenomenon

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SUN-488

A Coexisting of Two Different Thyroid Malignancies: A Collision Phenomenon Introduction: Collision tumors are rare clinical entities wherein two histologically distinct tumor types occur at the same anatomic sites. Simultaneous papillary thyroid carcinoma (PTC) and follicular thyroid carcinoma (FTC) of the same thyroid is a very rare occurrence with limited clinical information. Herein, we report a case of PTC and FTC of the same thyroid lobe. **Clinical case:** A 79-year-old man presented to the emergency department for evaluation of left hip pain of 2-month duration. Three days before presentation, he sustained a physical trauma to the left side of his body. X-ray imaging of the left femur revealed a lytic bony lesion measuring approximately 5.2 cm x 4.2 cm at the proximal end of left femur as well as a displaced pathologic fracture of its lesser trochanter. Biopsies of the bone lytic lesion suggested metastatic follicular thyroid carcinoma. CT of the neck revealed an enlarged thyroid with a cystic lesion as well as 2 nodules in the left lobe of thyroid gland. Total thyroidectomy was performed. Histopathology revealed 2 separate primary malignancies of PTC and FTC. Following diagnosis, laboratory test results showed TSH 2.6 uIU/mL (reference range, 0.2–4), anti-thyroglobulin antibody (anti Tg) < 1.0 IU/mL (reference range, 0.0–0.9), calcitonin 8.4 pg/mL (reference range, 0–8.4), and CEA 1.1 ng/mL (reference range, 0.0–3.0). The patient was placed on thyroid hormone replacement therapy and was treated with external beam radiation to his bone metastasis. He was scheduled

for later further thyroid ablation. In his follow-up visit, three months later, he reported no pain on ambulation. **Discussion:** For each type of thyroid malignancy, several genes have been identified. However, to date, no common gene mutation responsible for the pathogenesis of the different tumor types has been determined. For instance, point mutations of the *RAS* oncogene are found in about 40% of thyroid neoplasms (*N-RAS*, *H-RAS,* and *K-RAS*, in order of decreasing frequency) including both PTC and FTC. No single theory can completely explain the pathogenesis of these tumors in all cases, and so, with the present level of understanding of the disease, a combination of theories must be accepted. Management of collision tumors of the thyroid gland is usually complex owing to the presence of dual pathology in the tumor tissues and given the fact that literature on this condition is scarce. Generally, the treatment needs to be individualized. **Conclusion:** Most likely, a rare phenomenon of simultaneous mutation of different genes can give birth to contemporary different thyroidal neoplasms. **References:** Zhu Z, Gandhi M, Nikiforova MN, et al. Molecular profile and clinical-pathologic features of the follicular variant of papillary thyroid carcinoma. An unusually high prevalence of ras mutations. Am J Clin Pathol 2003; 120:71.

Reproductive Endocrinology

CLINICAL STUDIES IN FEMALE REPRODUCTION I

Screening for Gestational Diabetes Mellitus: Universal or Selective Screening? Screening for Gestational Diabetes Mellitus: Universal or Selective Screening?

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SAT-012

Screening for gestational diabetes mellitus: universal or selective screening?

Introduction:

The presence or absence of risk factors is often employed in screening for Gestational Diabetes Mellitus (GDM). The risk factors for GDM includes previous delivery of macrosomic babies, family history of type 2 diabetes mellitus, previous GDM among others. The impact of selective screening is yet to be fully evaluated in our environment.

Objective

To determine the impact of selective screening on diagnosis of gestational diabetes mellitus

Methods

The study was a prospective open cohort study carried out from 1st March to 30th November 2017 at the Lagos University Teaching Hospital (LUTH), Lagos, Nigeria. Ethical approval was obtained from the Health Research Ethics Committee of Lagos University Teaching Hospital (LUTH) before commencement of the study

All the pregnant women were categorized into either risk group or control group based on the presence or absence of clinical risk factors for GDM. All participant had 75g Oral Glucose Tolerance test (OGTT) done at 24 to 28 weeks gestation and follow up till delivery.

The data obtained were age, risk factors for GDM, fasting plasma glucose, one-hour post glucose load plasma glucose & two-hour post glucose load plasma glucose. The data were presented as mean, standard deviation, percentages & chi square. The p value ≤ 0.05 was considered significant

Results

Ninety pregnant women were screened for GDM. Forty-four women had risk factors for GDM while 46 were non risk group. Their mean age was 32.6± 5 years. The mean age for the risk & non-risk group were similar.

The overall prevalence of GDM using the IADPSG criteria was 23.3%. The percentage of women in the risk group with GDM was 38.6% while those women in the non risk group with GDM was 8.7% which was statistically significant (p value 0.004).

Discussion

The most commonly identified risk factors for GDM in this study were family history of type 2 diabetes mellitus, history of unexplained miscarriage & previous history of delivery of macrosomic babies.

Some women in the non-risk were diagnosed, even though the prevalence was lower than that observed among women with risk factors for GDM. Approximately one in ten women would have been missed if selective screening was employed in this study.

Most of the women in the non-risk group who were diagnosed with GDM were managed with medical nutritional therapy while majority of women in the risk group had insulin therapy.

Conclusion

The findings in our study further supports the idea of universal screening for GDM in order to avoid missed diagnosis.

Keywords: gestational diabetes mellitus, Screening, oral glucose tolerance test

Thyroid

BENIGN THYROID DISEASE AND HEALTH DISPARITIES IN THYROID I

Personalized Treatment Planning for Radioiodine Therapy of Graves' Disease;The Collar Therapy Indicator(CoTI)

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SAT-417

Introduction Since its introduction 80 years ago, the therapeutic I-131 dosage has usually been tailored to individual patient requirements based on the uptake of a tracer radioiodine(RAI) dose. Estimated exposure has typically been extrapolated from the results of activity measurements at one or two time points, e.g., at 4 and 24 hours. We now know that treatment of hyperthyroid Graves disease with these methods lead to a 13–25% rate of failure to cure hyperthyroidism and a 46–80% rate of long-term hypothyroidism in cured patients. There is a need for a much more personalized