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HEPATIC GLYCOGENOSIS IN TYPE 1 DIABETES MELLITUS; MORPHOLOGIC DIAGNOSIS

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Hepatic glycogenosis is a rare unrecognised complication of poorly controlled diabetes mellitus type 1. Hepatomegaly with or without abnormal liver function tests, are the common features of both paediatric and adult patients with diabetes mellitus. We report a 25-years old female patient who has a background of diabetes mellitus type 1 and Grave's disease and presented with increased liver enzymes. Her liver biopsy reveals a macrovesicular steatosis in about 30% of the hepatocytes. The hepatocytes are diffusely swollen and contain abundant glycogen which stains deep magenta with PAS and disappear after digestion with diastase. Nuclear pseudoinclusions are present in a number of hepatocytes which also stain positive for glycogen. Megamitochondria-like rounded eosinophilic bodies are identified in some hepatocytes. Focal lobular inflammation is present associated with spotty necrosis in one focus. These findings occur due to excessive reversible accumulation of glycogen in the hepatocytes where it is trapped as a result of a combination of both hyperglycaemia and insulin treatment with consequent liver damage. These changes are reversible if patient's glucose is controlled. Hepatic glycogenosis can be part of Mauriac's syndrome in which the patient has hepatomegaly, abnormal liver enzymes, growth retardation and/or dwarfism, delayed puberty, cushingoid features and hypercholesterolaemia.

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MIXED NEUROENDOCRINE-NON NEUROENDOCRINE NEOPLASM OF THE COLON

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Mixed neuroendocrine non-neuroendocrine neoplasm (MiNEN) is a rare diagnosis in which neuroendocrine component is combined with a non-neuroendocrine component, each of which is morphologically and immunohistochemically recognisable as a discrete component and constitute $\geq 30\%$ of the neoplasm. This case study reports two elderly patients with MiNEN in their

colon, the first presented with caecal tumour on colonoscopy and the second had an obstructing mass in hepatic flexure region. They underwent hemicolectomy which revealed similar morphological findings which showed high grade adenocarcinoma in the superficial part and poorly differentiated components with signet rings and extracellular mucin in the deeper aspects. Areas of rhabdoid differentiation is also present in the first patient. Grade 3 neuroendocrine component is well defined within the deep aspect and constitute about 30% of the tumour. These components are positive for synaptophysin and focally for chromogranin with high Ki67. Perineural and lymphovascular invasion is identified in both cases along with metastasis to regional lymph nodes. MiNEN has an aggressive biological behaviour, mostly driven by its (often high-grade) neuroendocrine component, and a dismal prognosis. In summary, we are discussing two cases of MiNEN with poorly differentiated mucin secreting adenocarcinoma and grade 3 neuroendocrine tumour.

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IDENTIFICATION OF SPECIFIC MARKERS TO DIFFERENTIATE PRIMARY PULMONARY CARCINOMA FROM METASTATIC GASTROINTESTINAL CARCINOMA TO THE LUNGS

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Differentiating primary from secondary lung tumours is difficult in poorly differentiated samples. In such cases, the tissue biomarkers CK7, Napsin-A, TTF1, CK20, CDX2, and SATB2 can offer insight into a tumour's origin.^{1–3} Our study aimed to identify the smallest panel that is most sensitive and specific at differentiating primary lung tumours from metastatic GIT tumours to the lungs for the purposes of informing current practices of more time and cost efficient methods. A total of 170 samples were collected, including 140 primary and 30 non-primary lung tumours and staining for CK7, Napsin-A, TTF1, CK20, CDX2, and SATB2 was performed via tissue microarray. The data were then analysed using univariate regression models and a combination of multivariate regression models and receiver operating characteristic (ROC) curves. The results confirmed the ability of individual markers to predict the correct

origin of a tumour with statistically significant ($p < 0.001$) odds ratios (ORs) that range from 19.4 to 333.3. The combination of CK7, CK20, and SATB2 was identified as the smallest panel with the highest sensitivity (85.1%) and specificity (100%) for predicting tumour origin with an ROC area-under-curve (AUC) of 0.965 ($p < 0.001$; SE 0.018, 0.930–1.000 95% CI).

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GYNAECOMASTIA-LIKE HYPERPLASIA OF AXILLARY ECTOPIC BREAST TISSUE – A CASE REPORT

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Aim: To highlight the incidental finding of gynaecomastia-like hyperplasia of axillary ectopic breast tissue in a female patient, with review of the literature.

Case report: A 36 year old multiparous female presented for surgical management of right axillary ectopic breast tissue on a background history of a previously excised right lower quadrant breast lesion one year prior that showed a 29mm grade 3 invasive breast carcinoma of no special type with triple negative immunophenotype. The sentinel nodes were uninvolved and excision margins were clear. She underwent neoadjuvant chemotherapy and local radiotherapy. There was no radiological or clinical evidence of recurrence at the one year mark. Excised axillary fibroadipose tissue histologically showed benign breast ducts without lobules demonstrating occasional micropapillary hyperplasia, as well as stromal pseudoangiomatous stromal hyperplasia (PASH). There was no evidence of in-situ or invasive malignancy. The overall appearance was that of gynaecomastia-like hyperplasia.

Discussion: Gynaecomastia-like hyperplasia is a rare finding in breast specimens in female patients. It is exceedingly rare in ectopic breast tissue, with only a single case report in the literature to date. The spectrum of histologic changes are characteristic, although the pathogenesis is poorly understood due to the rare nature of this process.

RENAL INVOLVEMENT BY MITOCHONDRIAL ENCEPHALOPATHY, LACTIC ACIDOSIS, AND STROKE-LIKE EPISODES (MELAS) SYNDROME – A CASE REPORT

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Mitochondrial encephalopathy, lactic acidosis, and stroke-like episodes (MELAS) is a clinical syndrome caused by mutations in mitochondrial DNA, which is maternally inherited. This disruption to mitochondrial function manifests primarily as neurological signs and symptoms that result in progressive functional decline, although multiorgan system involvement has also been described. We report a case of a 70-year-old man recently diagnosed with MELAS syndrome who was referred for nephrology review due to acute on chronic renal impairment, with a background history of Type 2 Diabetes Mellitus and hypertension. A renal biopsy was performed to delineate the cause of the acute decline in renal function. The kidney biopsy showed marked chronic damage consistent with diabetic and hypertensive nephropathy, which was corroborated by electron microscopy findings. In addition, occasional tubular cells showed mitochondria with large vacuoles and abnormal cristae. This case highlights the ultrastructural changes within the kidney that are indicative of MELAS syndrome. These changes can be focal, and should not be overlooked in the presence of other causes of chronic kidney damage.

MALIGNANT ADENOMYOEPITHELIOMA IN SITU OF THE BREAST: A CASE REPORT

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Adenomyoepithelioma (AME) of the breast is a rare biphasic neoplasm characterised by inner luminal ductal cells and proliferation of enlarged and prominent abluminal myoepithelial cells.¹ The majority of AMEs follow a benign clinical course and complete surgical excision is curative, but it is currently regarded as a neoplasm of low malignant potential due to its potential for metastasis and malignant transformation from either epithelial or myoepithelial components.¹ Cases with malignant transformation are termed malignant AME, further categorized into malignant AME *in situ*, malignant AME invasive, and AME with invasive carcinoma.² Awareness of AME as a diagnostic consideration is important to differentiate it from the myriad of breast epithelial-myoeplithelial proliferations. We hereby report a case of a 40-year-old female with malignant AME *in situ* of the left breast, presenting as a periareolar lump of 3 years' duration which was reported as a sclerosing papilloma on recent core biopsy, with the diagnosis only evident following subsequent excision biopsy.

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TONSILLAR LYMPHANGIOMATOUS POLYP

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Tonsillar lymphangioma polyp is a rare lesion that is believed to be hamartomatous in nature. It presents as a polypoid outgrowth