tumour.³ This case study reports a patient with all the characteristic features of a sporadically arising tumour.

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GASTRIC SCHWANNOMA: A RARE BUT IMPORTANT DIFFERENTIAL FOR GIST

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Gastric schwannomas are a rare mesenchymal tumour. They are often detected incidentally and present with nonspecific symptoms.¹ They can be mistakenly diagnosed as a gastrointestinal stromal tumour (GIST) preoperatively. We present a case of a 26-year-old male with a presumptive preoperative diagnosis of a GIST that was confirmed to be a gastric schwannoma on histology.

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MULTIPLEXED IMMUNOFLUORESCENCE IDENTIFIES STROMAL CD68⁺PD-L1⁺ MACROPHAGES AS A PREDICTOR OF OUTCOME IN TRIPLE NEGATIVE BREAST CANCER

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Background: Triple negative breast cancer (TNBC) comprises 10–15% of all breast cancers and has a poor prognosis. Our aim was to characterise the immunophenotypes of stromal immune cells expressing PD-L1 and determine their association with overall survival (OS) and breast cancer-specific survival (BCSS).

Methods: Tissue microarrays were constructed from a retrospective cohort of TNBC patients from St George Hospital ($n=244$). Multiplexed immunofluorescence staining for CD3, CD8, CD20, CD68, PD-1, PD-L1, FoxP3 and pan-cytokeratin was performed using the Vectra Polaris™ and analysed using QuPath. Cox univariate and multivariate analyses (MVA) determined associations with outcome using the median cell count as the cut-point.

Results: In MVA analyses, high CD68⁺PD-L1⁺ was associated with improved prognosis for OS (HR=0.56, 95% CI 0.33–0.95, $p=0.030$) and BCSS (HR=0.47, 95% CI 0.25–0.88, $p=0.018$) in the whole cohort and in patients receiving chemotherapy ($n=174$; OS HR=0.43, 95% CI 0.22–0.83, $p=0.012$; BCSS HR=0.38, 95% CI 0.18–0.78, $p=0.009$), improving on the predictive value of PD-L1⁺ alone for BCSS.

Discussion: High CD68⁺PD-L1⁺ macrophages define a group of TNBC patients with improved prognosis. Our data supports the recent description of CD68⁺PD-L1⁺ macrophages predicting response to neoadjuvant immunotherapy in TNBC¹ and its potential as a more specific immune biomarker.

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RETE CYSTADENOMA OF THE OVARY: A DISTINCTIVE AND POSSIBLY UNDER-REPORTED ENTITY

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Rete cystadenoma is an uncommon neoplasm with distinctive morphological features, including a characteristic epithelial lining, and prominent smooth muscle bundles and hyperplastic hilus cells within the wall. It has limited exposure in the literature and is probably underdiagnosed. Whilst both rete cystadenoma and its more common mimic serous cystadenoma are benign, recognition of the former is important because of the association with systemic symptoms, in particular virilisation, which can occur in up to 50% of the cases. Here, we present a case of rete cystadenoma to draw attention to this distinctive entity, and demonstrate ER and PR negativity in the cyst wall epithelium, which may contrast to that of serous cystadenoma.

MISSED OPPORTUNITIES FOR THE DIAGNOSIS OF HYPERCORTISOLISM: AUDIT OF TEST SELECTION PREFERENCES IN PRIMARY CARE

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Hypercortisolism is associated with significant morbidity and mortality.¹ Recommended initial tests for hypercortisolism include urine free cortisol (UFC), late-night salivary cortisol

(LNSC), and overnight dexamethasone suppression test (DST).² We sought to evaluate the validity of anecdotal reports that morning or random serum cortisol, which lacks sensitivity and specificity and is not recommended for this purpose, is commonly used to test for hypercortisolism in primary care. We analysed test selection preferences for hypercortisolism in patients with adrenal incidentalomas or suspected secondary hypertension in primary care, using data from our community-based laboratory. We extracted requests for any of the aforementioned cortisol tests with metanephrines or aldosterone and renin within one month of each other, over a 12-month period. We then reviewed request forms to select only those explicitly testing for secondary hypertension or functionality of an adrenal incidentaloma, yielding 175 cases. Serum cortisol was the most common test (81% of cases; 95% CI 74.9–100%). There is a significant opportunity for pathologists to provide education to general practitioners (GP) regarding initial testing for hypercortisolism. We intend repeating this analysis after a focused education campaign incorporating GP detailing, printed and electronic materials, and enhanced interpretative commenting.

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PSEUDOHYPOALDOSTERONISM TYPE 2 WITH *CUL3* MUTATION CONFIRMED FOLLOWING RETESTING 15 YEARS LATER

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This work was done at Canterbury Health Laboratories, Christchurch, New Zealand.

A 22-year-old Caucasian female presented to endocrinology clinic in late 2004 for investigation of early-onset hypertension, with systolic blood pressure 180–200 mmHg and diastolic blood pressure of 110–120 mmHg. She was hyperkalaemic (5.4 mmol/L) with an elevated aldosterone:renin ratio [1663 pmol/L/(nmol/L/h); URL 750] and metabolic acidosis with pH 7.26 and bicarbonate 20.6 mmol/L. Pseudohypoaldosteronism Type 2 (PHA2) or Gordon's Syndrome was diagnosed. Mutation testing for *WNK1* and *WNK4* was negative. She had variable adherence to bendrofluzide and salt restriction and was lost to follow up before re-presentation with congestive heart failure in 2020. Massive parallel sequencing with a pseudohypoaldosteronism panel identified heterozygosity of the *CUL3* gene for c.1207-12T>A, an intra-intronic variant predicted to disrupt splicing, deemed likely pathogenic, seen previously in an Australian kindred with PHA2. Although our patient's initial genetic testing was negative in 2005, advances in knowledge of PHA2 led to a satisfactory genetic diagnosis 15 years later. This demonstrates that when an inherited condition is suspected, even when previous genetic testing is negative, there may be utility in revisiting genetic testing if knowledge of the condition has improved and

subsequent testing can evaluate more genes or variants than the initial genetic test.

HB WESTPORT [*HBB*: C.366A>C (P.GLU122ASP)], A NOVEL β -GLOBIN VARIANT INTERFERING WITH HBA1C

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This work was done at Canterbury Health Laboratories, Christchurch, New Zealand.

Due to increasing measurement of HbA1c for diagnosis and management of diabetes, haemoglobin (Hb) variants are routinely detected during HbA1c measurement by high performance liquid chromatography (HPLC). A 45-year-old Caucasian female was referred for blood testing to investigate fatigue, with HbA1c included to screen for diabetes. Abnormal HbA1c peak tailing on Bio-Rad D-100 cation exchange HPLC was observed, with HbA1c of 52 mmol/mol (6.9%) calculated. However, HbA1c by DCA Vantage Point-of-Care Analyzer immunoassay was 34 mmol/mol (5.3%). Electrospray ionisation (ESI) time-of-flight (TOF) mass spectrometry demonstrated both normal (15,867 Da) and variant β -globin (15,853 Da) masses, with the variant chain 48% of total β -globin. DNA sequencing confirmed the patient was heterozygous for [*HBB*: c.366A>C (p.Glu122Asp)], which has not previously been described. Consistent with reports for other variants at the same amino acid position, our patient had a clinically normal phenotype, with unremarkable full blood examination during pregnancy. Glucose based criteria was recommended for any future diabetes screening due to interference from the novel variant, which causes overestimation of HbA1c by routine HPLC methods.

THE AGE OF IRON: AN ASSESSMENT OF AGE-RELATED DISTRIBUTION IN PAEDIATRIC IRON STUDIES

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Introduction: Clinical decision limits and reference limits for ferritin and transferrin saturation (TSAT) are used for the investigation of iron deficiency (ID) and iron overload (IO). Our aim is to assess the distribution of ferritin, transferrin and TSAT in paediatric populations from two private laboratory services.

Methods: 315,149 iron studies results for patients under 18 years collected between 2010 and 2020 were extracted from our database. All tests were measured using the Roche Cobas 8000 immunoturbidimetric method. Results were excluded if the