UK Endocrine Pathology Society Slide Circulation 26

Case 1. 13/10209 Male 50's, hyperparathyroidism. Thyroid lobe weighing 9g 40x28x20mm with a yellow/grey solid nodule, 25mm diameter 25mm.

A case of **intra-thyroid parathyroid**. Most members diagnosed this lesion correctly. Most suggested that this was an adenoma although a few members wondered about intra-thyroid parathyroid hyperplasia.

Case 2. 13/1966. Female, late 70's, primary hyperparathyroidism, left lower gland 16.5g, 60x30x10mm.

A case of **water clear adenoma of the parathyroid**. A number of members gave a differential diagnosis of clear cell tumour suggesting to exclude metastatic renal cell carcinoma, with immunohistochemistry for confirmation.

Ezzat T, Maclean GM, Parameswaran R et al. Primary hyperparathyroidism with water clear content: the impact of histological diagnosis on clinical management and outcome. Ann R Coll Surg Engl 2013;95:e60-e62.

Case 3. 13/2759. Female, late 70's, mass infiltrating thyroid, frozen section.

This was a cytologically malignant tumour in the thyroid region, with a differential diagnosis of anaplastic thyroid carcinoma, poorly differentiated carcinoma, and lymphoma, including also other differential diagnoses of undifferentiated tumour in the head and neck region. The tumour showed +ve staining with cytokeratins, and the larger pleomorphic cells were –ve with lymphoid markers including CD45. The tumour was TTF1 +ve. Based on this assessment a diagnosis of **anaplastic thyroid carcinoma of lymphoepitheliomatous type** was made**.**

Dominguez-Malagon H, Flores-Flores G, Vilchis JC. Lymphoepithelioma like anaplastic thyroid carcinoma: Report of a case not related to Epstein-Barr virus. Ann Diagn Pathol 2001;5:21-24

Case 4. 12/26266. Female late 30's right thyroid mass, right lobectomy 8g up to 40mm with a nodule up to 28mm.

The majority diagnosis in this case was **medullary carcinoma**. Because of the presence of follicles some members also considered a composite medullary /follicular carcinoma although follicles present were said to be entrapped. This tumour was strongly positive for chromogranin, synaptophysin and TTF1. There was weak tumour staining with CEA. The lesion also had hyaline stroma in keeping with amyloid.

Case 5 12/24783. Female, early 30's left thyroid lobectomy, cystic nodule.

This was a cystic lesion with solid areas in the wall which were part papillary and showed a Hurthle cell appearance. Focally within the wall were also areas of spindle cell change. The majority diagnosis was benign, **a Hurthle cell or follicular adenoma with degenerative features** although a number of members considered papillary carcinoma in the differential diagnosis.

Case 6 4411/12. Female, 70's, large mass upper thyroid extending to hyoid, preceded by small nodule >1 year.

Members' diagnoses in this case with varied including squamous cell carcinoma, poorly differentiated carcinoma, and anaplastic carcinoma. Members did not appreciate that vacuoles were present containing mucous on the H&E section circulated. The diagnosis in this case was **mucoepidermoid carcinoma arising in a thyroglossal duct remnant**, although the possibility of thymic differentiation was raised. The submitting pathologist comments…*'Mucoepidermoid and adenosquamous carcinomas are reported in thymus, but very rarely, and SETTLE shows glandular rather than dispersed mucous cell differentiation. Clearly this was an unusual tumour, but without other features of SETTLE or CASTLE and I had not really seriously considered these given the known origin around the hyoid, inconsistent with an ectopic thymic pharyngeal pouch origin but not of course excluding thymic differentiation in a thyroid neoplasm. However, at members suggestion I have performed CD5 and only lymphocytes are positive, the epithelium is negative. Though SETTLE is negative, I think that lack of spindle cells and taken together with the other features, this goes as far as possible to exclude these other possibilities as best I can, so the diagnosis is unchanged (pending any better ideas)…'*

Case 7. PR 33256/10. Female late 20's**,** solitary 25mm nodule right lobe thyroid, Thy3.

The majority diagnosis in this case was benign - **papillary hyperplasia in a follicular nodule, adenomatoid nodule, follicular adenoma or variations of this wording.** Very few suggested follicular variant of papillary carcinoma although the proffered diagnosis at the time of submission in 2010 was follicular variant of papillary carcinoma (FVPC).

Comment DNP. This case illustrates the known issues of interobserver reproducibility of FVPC and also that diagnostic criteria may have subtly altered over time particularly with the use of antibodies to CD56, Ck19 and HBME1 to assist diagnosis

Case 8 LH 12711/13. Female, 70's 50mm left sided thyroid mass, Thy3f

Most members diagnosed **mucinous follicular adenoma in this case.** This was a good example

Case 9 LH 17145/13. Female, late 50's right thyroid lobe frozen section, extensive microcalcification ? diffuse papillary ca.

This was an example of **diffuse sclerosing variant of papillary carcinoma**. The majority of members diagnosed papillary carcinoma although many members did not give diffuse sclerosing variant of papillary carcinoma as the primary diagnosis. The prognosis of diffuse sclerosing variant of papillary carcinoma is a matter of debate.

Albareda M, Puig-Domingo M, Wengrowicz S, Soldevila J, Matias-Guiu X, Caballero A *et al*.Clinical forms of presentation and evolution of diffuse sclerosing variant of papillary carcinoma and insular variant of follicular carcinoma of the thyroid. *Thyroid* 1998;8:385–391.

Soares J, Limbert E, Sobrinho-Simões M. Diffuse sclerosing variant of papillary thyroid carcinoma. A clinicopathologic study of 10 cases. *Pathol Res Pract* 1989;185:200–206.

Case 10 LH 19145/13 Male early 60's, mass in head of pancreas on follow-up after nephrectomy. Whipple's for 19mm pancreatic head mass.

Most members diagnosed **metastatic renal cell carcinoma** based on the clinical history with a number commenting about the need for additional confirmatory immunohistochemistry.

Case 11 LH 2078/13 Female, early 50's, primary hyperaldosteronism, laparoscopic left adrenalectomy 9g, 48x22x13 with 12mm yellow cortical nodule.

Nearly all members in this case diagnosed an **aldosterone producing adrenal cortical adenoma**. Some also commented on the presence of spironolactone bodies.

Case 12 LH 17903/13 Female, early 60's. Uterine carcinoma, left adrenal mass, hot on PET, non functioning ? metastasis

This case was submitted as a **ganglioneuroma** of the adrenal gland. Some members wondered about a composite phaeochromocytoma/ganglioneuroma. The tumour stained with inhibin, chromogranin A, synaptophysin and S100 confirming a ganglioneuroma. Small aggregates of immature ganglion cells stained with MAP2. The lymphoid cells were of mixed B and T-cell lineage, there was no fatty infiltrate, and blasts or myeloid cells were not noted.

Case 13 SP 12 9752 Male early 30's, left adrenal/periadrenal phaeochromocytoma. Adrenal gland 25x7mm with encapsulated tumour 55x50x40mm

The diagnosis of most members in this case was **phaeochromocytoma**. Granulomas were noted in the surrounding adipose tissue. The tumour was chromogranin, synaptophysin, CD 56, and focally inhibin positive. The tumour was negative for MNF 116 and focally S100 protein showed sustentacular cells. MIB 1 labelling index was 1%. The tumour cells were positive for SDH implying that the patient is unlikely to harbour SDH mutation. Special stains were acid-fast bacilli, and fungal elements were negative. A second diagnosis of possible sarcoidosis was considered.

DNP, Dec 2013