UK Endocrine Pathology Society
www.ukeps.com

UKEPS Circulation 34 – 9th October 2017

Summary of Discussion

- **Case 1**

70 year old woman left thyroid nodule. THY3a. Left lobectomy – 57x32x15mm. Cut surface reveals a well circumscribed un-encapsulated tan lesion 11mm in maximum extent. HBME1 negative, CK19 negative, CD56 positive (as is background thyroid), MIB1 increased, positive nuclear staining for p53 and cyclin D1, positive cytoplasmic staining bcl-1. (Dr Cordelia Howitt)

PM's summary:
- Follicular nodule, well circumscribed, debatable if true capsule, random cytological atypia including large bizarre nuclei, many nuclei with open chromatin and large nucleoli.
- MIB1 increased, strong nuclear positivity for p53, positive for cyclinD1

Original diagnosis: PTC with poorly differentiated features.

Submitted answers:
- Most FA / adenomatoid nodule;
- Some raised possibility of invasion;
- Occasional PDC.

Discussion:
- How much should we worry about cytological atypia, can happen in adenomas.
- Submitting pathologist worried about p53 expression. Comment from delegate; p53 only matters if also p21 done, p53 can be expressed in lots of things. Most present do not do p53 in these lesions so are not sure of its patterns of expression.
- Ki67 – Comment from delegate; would expect it to be high in early hyperplastic nodule (MM).
- Acknowledged that can sometimes see PDC morphology in a circumscribed nodule, though usually more obviously invasive.

Conclusion: Consensus was for a benign lesion.

- **Case 2**

55 year old woman, isthmusectomy. Nodular brown tissue (10g) 30x27x10mm. Circumscribed cream nodule, 10x7x9mm. (Dr David Poller)
PM's description:
- well circumscribed nodule, could debate whether has a capsule (yes in places, less well defined in others).
- dual components – spindle cells with slight cytological atypia and follicles.
- was sent to member for second opinion, ?soft tissue lesion vs thyroid primary.
- positive for CD56, thyroglobulin (weak in spindle cells, strong in follicles), TTF1 (strong thoughout), EMA (weak).
- negative for actin, myosin, CD34, CD99, calcitonin, neuroendocrine markers, S100
- negative for translocation associated with synovial sarcoma.

Original diagnosis: spindle cell follicular adenoma.

Submitted answers: - MTC, MIFC, thymus-like lesions, HN, FC with PDC areas.

Discussion:
- Many (not all) saw invasion. Original report mentions “infiltration of thyroid” but concludes “adenoma”.

Conclusion: spindle cell variant of follicular neoplasm, varied opinions re invasion.

- **Case 3**

61 year old woman. Thy5 cytology. Total thyroidectomy. Left lobe nodule 33x24x22mm. background focal calcification. (Dr P. da Forno)

PM’s description:
- well circumscribed nodule, packets / trabeculae, hyalinisation, follicle-like structures, spindle cells, intranuclear inclusions, yellow bodies.
- had striking membranous staining for Ki67, little nuclear staining.

Original diagnosis: hyalinising trabecular tumour (HTT).

Submitted answers:
- majority HTT / HTA, some queried invasion;
- few PTC, e.g. solid variant.

Discussion:
- what is the correct terminology, HTT or HTA? New WHO book heads chapter as HTT but HTA is synonym.

Conclusion: HTT.

- **Case 4**

47 year old woman, endometriosis, left ovarian cyst. Portion of tube with fimbrial end measuring 40x5mm. Fimbrial cyst 15mm. Attached collapsed cyst 60x40x20mm. Outer surface smooth. Cyst wall thickened up to 10mm. Inner lining smooth. (Dr D. Poller)

PM’s description:
- fallopian tube and ovary, in ovary – papillary proliferations with focally good PTC nuclei, also bland thyroid follicles in background.

Original diagnosis: PTC in struma ovarii.

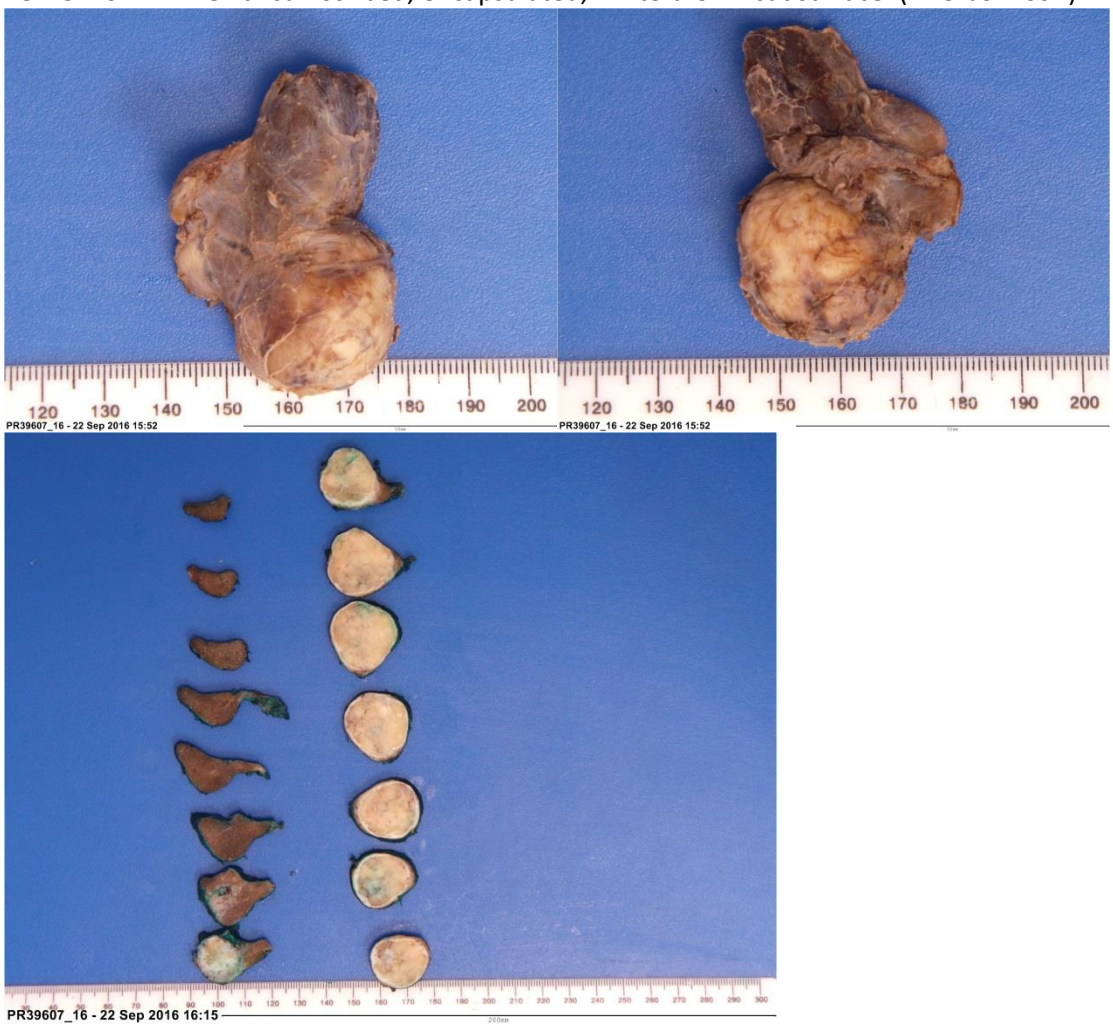
Submitted answers:
- majority PTC in struma ovarii;
- some benign struma;
- some met PTC.

Discussion:
- management – advice often for total thyroidectomy and can then give RAI. Different centres have had different experiences with individual patients that has affected local decisions, (eg Newcastle tends to be quite conservative, following one case that had multiple peritoneal deposits with Tg measurements, not had total thyroidectomy or RAI; Stoke has managed a recent small one conservatively; Sheffield has had one that behaved more aggressively).
- terminology – can be challenging for deposits in omentum, etc. (SJJ).
- one member (MM) stated that these are usually indolent, with small incidence of metastases.

Conclusion: PTC in struma ovarii.

- **Case 5**

PR039607D/16 Thy4. Diagnostic left hemi-thyroidectomy. 55x30x10mm (away from tumour). White tumour inferiorly 28x25x20mm. Well circumscribed, encapsulated, white brown cut surface. (Dr S. Johnson)



PM's description:
- irregular islands of hyperchromatic small oval tumour cells, stromal calcification.

Original diagnosis: thyroid carcinoma becoming widely invasive in growth with a significant minority (about 40%) of poorly differentiated carcinoma, otherwise being mostly papillary thyroid carcinoma of solid and tall cell variants, with some oncocytic follicular carcinoma; showing capsular invasion and angioinvasion; confined to thyroid. NB. submitted blocks were the PDC component.

More clinical info:
- incidental thyroid nodule found on CT for upper GI sx and weight loss;
- U4/5, 25mm, nil else, no enlarged LNs'
- diagnostic hemithyroidectomy (Sept 2016), then completion and central LNs (negative);
- RAI ablation with 5GBq (Feb 2017); TSH suppression;
- good result so far, no detectable Tg.

Submitted answers: - insular / PDC, MTC, widely invasive PTC, FC, mixed MTC/PTC, etc, ie varied.

Discussion:
- one member (MB) found pigmented cells and queried the nature of the pigment, others had not seen these.
- another (SJJ) stated she finds it difficult to estimate the percentage of a tumour that is poorly differentiated, because there is merging of the patterns and it is a three-dimensional structure. Others agreed.

Conclusion: PDC

- **Case 6**

PR034570N/16. Right adrenal gland. No clinical information provided by surgeon (but relevant later retrieved from patient information system). Adrenal 28x47x12mm. Well defined lobulated, cream and partly haemorrhagic tumour within cortex 12x11x23mm. (Dr S. Johnson)

PM's description:
- adrenal containing tumour – poorly differentiated, high n/c ratio, salt & pepper chromatin, mitoses.
- was positive for AE1/3 (dot-like), CD56, synaptophysin, CK20 (focal and dot-like);
- and negative for CK7, chromogranin, TTF1;
- Ki67 over 95%.

More clinical info, not provided with specimen but found on pathology system, patient from outside region as tertiary referral:
- 2014 - Merkel cell carcinoma of cheek removed, regrew and re-excised;
- Oct 2014 - adjuvant radical radiotherapy;
- May 2016 – recurrence on back, removed with axillary LND (histology elsewhere);
- Aug 2016 – 2cm adrenal mass removed – this;
- system now flagged that patient has deceased (RIP).

Original diagnosis: metastatic high grade neuroendocrine carcinoma in adrenal, entirely consistent with metastasis from known Merkel cell carcinoma.

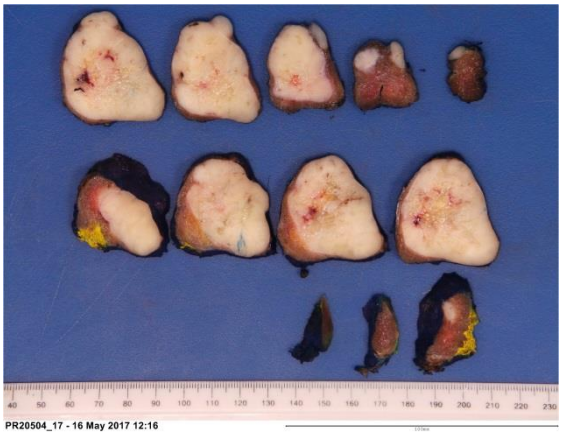
Submitted answers: most small cell tumour, ?met ?neuroblastoma ?PNET ?lymphoma.

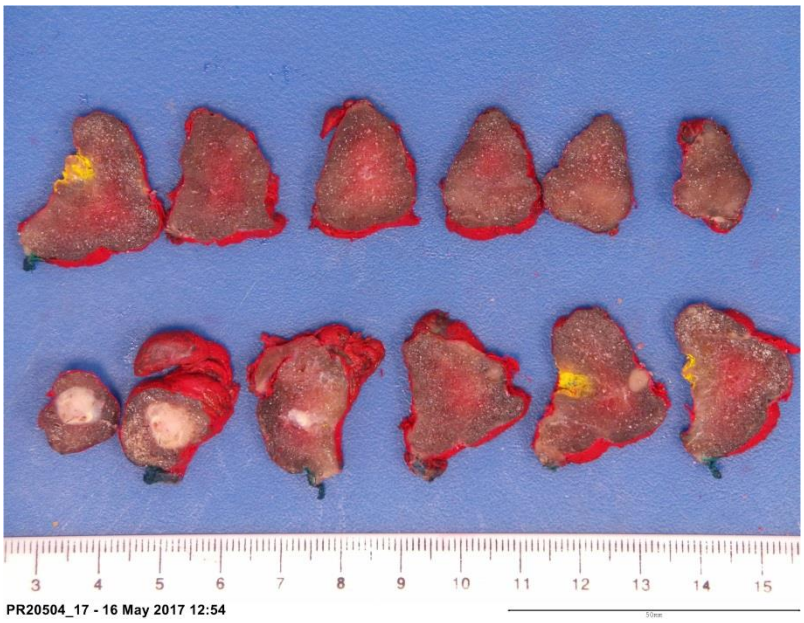
Discussion: none

Conclusion: as original diagnosis.

- **Case 7**

PR020504F/17. Total thyroidectomy. Previous excision of tumour on leg 2001. Multiple creamy white nodules in both lobes but sparing isthmus. (Dr S. Johnson)





PM's description:
- lobulated well circumscribed nodule, spindle cells, mitoses, focal atypia.
- spindle cells positive for desmin, h-caldesmon, SMA;
- and negative for AE1/3, thyroglobulin, TTF1, S100;
- Ki67 25-30%;
- Trojani grading 2 (differentiation 2, mitosis 2, necrosis 1), (needed soft tissue pathologist for this!)

Original diagnosis: metastatic leiomyosarcoma. Also (not in submitted blocks) were two incidental microPTC and non-caseating granulomas in other thyroid lobe and LNs.

More clinical info:
- 2001 – surgery to remove leiomyosarcoma of right calf;
- post-op radiotherapy;
- annual FU to 2014;
- Feb 2017 – referred with rapidly increasing thyroid nodules especially on right;
- staging PET-CT also showed right lung nodule;
- May 2017 - total thyroidectomy – this;
- checked for TB because of granulomas – negative;
- June 2017 – wedge excision of solitary right lung nodule – also metastatic leiomyosarcoma with sarcoid-like granulomas in background lung tissue.

Submitted answers: - ATC, pleomorphic spindle cell lesion, metastatic leiomyosarcoma.

Discussion:
- comment that PET-positive thyroid nodules usually either oncocytic lesions or PTC.

Conclusion: metastatic leiomyosarcoma.

- **Case 8**

Mystery case. Thy3f.
PM's description:
- thyroiditis and encapsulated lesion with predominantly follicular architecture, PTC nuclei, small papillae.

Original diagnosis: not known.

Submitted answers:
- most FVPTC, NIFTP, FVPTC / NIFTP;
- Also PTC, adenomatoid nodule.

Discussion:
- Not like it for NIFTP because has a few papillae and psammoma bodies (some just saw scores, some found an occasional psammoma body), and the cystic centre does not seem right for NIFTP.

Conclusion: FVPTC.

- **Case 9**

MNG L>R. left hemi-thyroidectomy. Multinodular appearance. Largest nodule glassy/cream 13x9x20mm. (Dr M. Moonim.)

PM's description:
- multiple nodules with fatty material.

Original diagnosis: MNG, one nodule had lots of fat.

Submitted answers:
- fatty change in goitre / adenoma;
- some found microPTC – confirmed.

Discussion:
- terminology, eg "lipometaplasia" – original pathologist just described it without a specific term.

Conclusion: as original.

Also two digital cytology cases without glass slides, Spreads would not scan but cell blocks did.

- **Case 10**

Male 63, sent as FNA from region of thyroid.

PM's description:
- cell block shows loosely adhesive blandish cell and amyloid-like material (positive with Congo red);
- ICC fitted with MTC. (positive TTF1, Calcitonin, chromogranin, synaptophysin, CEA)
- Matthews' rule – if in/near thyroid and looks like it is something but you don't know what, likely to be MTC. ☺

More clinical info:
- new diagnosis, no prev history;
- at MDTM, mass was growing from thyroid.

Original diagnosis: MTC.

- **Case 11**

Oesophageal primary, male 65, FNA left thyroid.

PM's description:
- malignant cells, forming glands;
- On immunochemistry background small thyroid epithelial cells stain with TTF1 but are negative for Ber-EP4 and MOC31. Conversely the large cytologically atypical cells are negative for TTF1 and positive for MOC31 and Ber-EP4. The appearance is in keeping with metastatic adenocarcinoma, rather than a primary thyroid tumour.

Original diagnosis: metastatic oesophageal carcinoma.

Additional discussion:

A member asked about PDC, especially the crenellated / convoluted nuclei and how to recognise them:

- difficult concept, not well defined in books;
- in PDC, usually associated with mitoses and necrosis;
- IHC of ATC and PDC given in new WHO book, pg 101, but is a generalisation with wide ranges, and IHC can be misleading if over-relied on;
- PDC more likely to be infiltrative than circumscribed but latter can be seen.

SJJ/PM (08/11/17)