REPORT OF GENERAL MODULE RESULTS
GN09-2

Date of issue 9 September 2009
Issued by Margaret Dimech

Comments in this report were prepared for and on behalf of the RCPA Quality Assurance Programs Pty Limited by Prof David J Davies.
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**Aim**
The aim of this survey was to provide external proficiency testing for Anatomical Pathologists who are engaged in diagnostic histopathology reporting.

**Method**
Participants were provided with one stained section and requested to submit a preferred diagnosis for each case in the survey.
Interim target diagnoses based on the original clinical diagnosis provided with the donated material were provided on the website immediately after the close of the survey.
Minor changes may have been made to the interim target diagnoses to arrive at the final target diagnosis provided in this report.
Responses have been assessed by the convenor against the final target diagnoses as:

- **Concordant**  The preferred diagnosis is essentially/substantially identical with the target diagnosis
- **Minor discordance**  The preferred diagnosis has one or more minor differences from the target diagnosis
- **Differential diagnosis only**  The preferred diagnosis consists of a differential diagnosis that could not be classified into any of the assessment categories or the response “Differential diagnosis only” is submitted
- **Discordant**  The preferred diagnosis is substantially different from the target diagnosis
- **Unable to be assessed**  The submission was late, illegible or unable to be interpreted. (*Unable to be interpreted submissions include those that are a clinical report, a fax instead of web submission or those with no text in the “preferred diagnosis” field*)

**Acknowledgement**
The Anatomical Pathology QAP would like to thank the Chairman Prof David J Davies for provision of cases in this survey.
The Anatomical Pathology QAP would also like to thank members of the advisory committee for their support in selecting and reviewing cases for this module.
Case number: AP09-11  
QAP identifier: EX08-289  
Specimen: Dural neoplasm  
Original identifier: HI08 14153  
Age & sex: 72 year female  

Clinical notes:
Right parietal tumour

Macroscopy:
A nodule of tan coloured tissue 41x34x28mm. Its cut surfaces is oedematous, pale pink and fleshy but cuts with a gritty sensation. This is accompanied by a thin plaque of grey fibrous tissue 47x31mm.

Microscopy:
This consists of a neoplasm made up of a mixture of fibroblastic and meningothelial cells. There are pseudonuclear inclusions and in many psammoma bodies are present which frequently are calcified.

Interim target diagnosis:
Psammomatous and fibroblastic meningioma

Final target diagnosis:
Psammomatous and fibroblastic meningioma

Responses:
309 responses were assessed as:
- Concordant: 46%
- Minor discordance: 53%
- Differential diagnosis only: 0%
- Discordant: 0%
- Unable to be assessed: 1%

Further information:
Clinical correlation required: 5%
Further sections, blocks or special stains required: 21%
Referral required: 5%

114 participants described the lesion as a Grade 1 tumour.

Tissue type:
265 participants described the tissue with 94% indicating that it was meninges or dura mater.

Discussion:
Concordant responses were those that included the target diagnosis of psammomatous meningioma, with or without description of the fibroblastic features.
Minor discordant responses were those of meningioma other than psammomatous meningioma.

Comments:

References:
Case number: AP09-12
QAP identifier: EX08-305
Specimen: Right lobe of thyroid
Original identifier: HI-08-0374
Age & sex: 43 year old female

Clinical notes
Total thyroidectomy with right paratracheal and the left and right neck dissections.

Macroscopy
A total thyroidectomy specimen, weight 24.8g, comprising the left lobe 40x25x20mm, right lobe 30x25x30mm and, in its centre, a pyramidal lobe 35x15x8mm. A piece of muscle 15x14x7mm is attached to the anterior surface of the right lobe. Most of the right lobe is involved by a tumour 35 x 25 x 20 mm with a predominantly white but variegated cut surface. This involves the capsule of the thyroid but has not invaded the adjacent muscle.

Microscopy
The tumour in the right lobe of the thyroid consists mostly of nests of cells separated by fibrous vascular connective tissue septa. The neoplastic cells show granular amphophilic cytoplasm and round nuclei with coarse chromatin. There is some focal calcification of the carcinoma and eosinophilic amorphous deposits are present in the connective tissue stroma. The lesion in the left lobe consists only of a nodule of hyperplastic glandular tissue. The eosinophilic extracellular deposits stain with Congo red and have an apple green birefringence. The carcinoma cells stain for calcitonin, synaptophysin, chromogranin and cytokeratin (MNF 116).

Interim target diagnosis
Medullary carcinoma

Final target diagnosis
Medullary carcinoma

Responses
309 responses were assessed as:
- Concordant: 86%
- Minor discordance: 5%
- Differential diagnosis only: 2%
- Discordant: 7%
- Unable to be assessed: 1%

Further information
Clinical correlation required: 17%
Further sections, blocks or special stains required: 64%
Referral required: 11%

Tissue type
306 participants described the tissue as thyroid.

Discussion
Concordant responses were those that included the target diagnosis of medullary carcinoma.
Minor discordant responses were those of medullary carcinoma of oncocytic type.
Discordant responses were those of carcinomas other than medullary carcinoma (oncocytic, follicular, Hurthle cell carcinoma and papillary) and other neoplasms such as Hurthle cell neoplasm and hyalinising trabecular tumour.

Comments

References
Case number       AP09-13
QAP identifier    EX09-085
Specimen          Small bowel
Original identifier HI-07-15894
Age & sex         68 year old male.

Clinical notes
Resection of small bowel containing two lesions

Macroscopy
A segment of small bowel 420mm long containing two areas of mural thickening 35x21mm and 80x7mm and both up to 7mm thick and approximately 170mm apart with attached mesentery up to 60mm wide. The larger of these was situated in the centre of the specimen and the smaller 30 mm from the nearest excision edge.

Microscopy
In the abnormal thickened areas of the bowel wall there is extensive oedema and well-developed inflammatory changes involving its full thickness. In the mucosa there is cryptitis, crypt abscesses and formation of fissures. Multiple non-caseating granulomas are present in both in the lamina propria of the mucosa and in deeper layers of the bowel wall. In the mucosa there is some Paneth cell metaplasia and prominence of bundles of nerve fibres in the submucosa and muscularis propria. Granulomas were also present in regional lymph nodes. No birefringent material was present on examination with polarised light in the bowel wall or lymph nodes and no microorganisms could be demonstrated microscopically.

Interim target diagnosis
Granulomatous enteritis consistent with Crohn's disease

Final target diagnosis
Granulomatous enteritis consistent with Crohn's disease

Responses
310 responses were assessed as:
- Concordant 88%
- Minor discordance 1%
- Differential diagnosis only 6%
- Discordant 5%
- Unable to be assessed 1%

Further information
Clinical correlation required 39%
Further sections, blocks or special stains required 60%
Referral required 8%

Tissue type
307 participants described the tissue with 99% indicating that it was small bowel. One participant indicated that it was colon.

Discussion
Concordant responses were those that included the target diagnosis of granulomatous enteritis consistent with Crohn's disease.

Minor discordant responses were those of granulomatous inflammation suggestive of sarcoidosis.

Discordant responses were those of angiodysplasia, GIST, arterio-venous haemangioma, lymphangioma, granulomatous inflammation from infectious cause (fungal, Yersinia, Schistosoma, tuberculosis and other mycobacteria), granulomatous "colitis", (specimen was not colon), necrotising granulomatous inflammation.

Comments
References
Case number  
AP09-14  
QAP identifier  
EX06-342  
Specimen  
Left kidney  
Original identifier  
HI-06-11698  
Age & sex  
46 year old male  

Clinical notes  
Extended nephrectomy for stag horn calculus

Macroscopy  
A left nephrectomy 200x110x100 weighing 1100g with attached fat and also with the proximal 50mm of ureter which is 5mm in diameter. In the kidney the pelvis contains a staghorn calculus and calyces are dilated and contain multiple calculi 5 to 90mm in diameter. The kidney is partly necrotic, and contains some cystic spaces and has been extensively infiltrated by a tumour which extends into perinephric fat and involves nodes near the ureter.

Microscopy  
Carcinoma has infiltrated the kidney and extended into perinephric fat and also invaded the upper ureter, veins, perineural lymphatics, adrenal and regional nodes. Some of the tumour is poorly differentiated but there is also extensive keratinisation and formation of cell nests. Elsewhere in the kidney there is well-developed chronic inflammation with accumulation of many foam cells.

Interim target diagnosis  
Poorly differentiated keratinising squamous carcinoma of the pelvis with extensive local invasion and lymphatic spread and struvite calculi and xanthogranulomatous pyelonephritis

Final target diagnosis  
Poorly differentiated keratinising squamous cell carcinoma

Responses  
310 responses were assessed as:

<table>
<thead>
<tr>
<th>Description</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Concordant</td>
<td>76%</td>
</tr>
<tr>
<td>Minor discordance</td>
<td>23%</td>
</tr>
<tr>
<td>Differential diagnosis only</td>
<td>0%</td>
</tr>
<tr>
<td>Discordant</td>
<td>1%</td>
</tr>
<tr>
<td>Unable to be assessed</td>
<td>1%</td>
</tr>
</tbody>
</table>

Further information  
Clinical correlation required  18%
Further sections, blocks or special stains required  36%
Referral required  6%

98 participants described the tumour as follows:

<table>
<thead>
<tr>
<th>Tissue type</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Well differentiated</td>
<td>5</td>
</tr>
<tr>
<td>Moderately differentiated/grade 2</td>
<td>31</td>
</tr>
<tr>
<td>Poorly differentiated/high grade</td>
<td>61</td>
</tr>
<tr>
<td>Well differentiated &amp; highly anaplastic</td>
<td>1</td>
</tr>
</tbody>
</table>

Tissue type  
307 participants described the tissue with 99% indicating that it was kidney. One participant described it as bladder.

Discussion  
Concordant responses were those that included the target diagnosis of squamous cell carcinoma.
Minor discordant responses were those of carcinoma of kidney with squamous differentiation, metastatic squamous cell carcinoma, renal cell carcinoma and transitional cell (urothelial) carcinoma.
Discordant responses were those of collecting duct carcinoma.

Comments  

References
Case number          AP09-15
QAP identifier          EX07-061
Specimen              Terminal ileum
Original identifier          HI-06-7567
Age & sex         62 year old female

Clinical notes
Terminal ileum, caecum, ascending and transverse colon for histology.

Macroscopy
Terminal ileum 540mm long in continuity with caecum and ascending colon 750mm long. At 320mm from
from the proximal edge the ileum is narrow and contains a stricture 20x18mm produced by a pale brown
tumour involving the mucosa and submucosa. The caecum contains a contains a circumferential grey to
white tumour approx. 150x105mm, which invades the bowel wall and involves the appendix. NB sections
provided are from the lesion in the ileum only.

Microscopy
In the ileum medium sized polygonal or cuboidal cells arranged in clusters, sheets ot trabeculae have
infiltrated the deep mucosa and inner muscularis propria. There is some formation of glandular spaces. The
cells have a small amount of basophilic cytoplasm and central round nuclei. In the caecum undifferentiated
carcinoma with a signet-ring component has invaded the bowel wall, invaded pericolic fat and infiltrated
lymphatics.

Interim target diagnosis
Malignant carcinoid

Final target diagnosis
Malignant carcinoid

Responses
310 responses were assessed as:

Concordant         98%
Minor discordance  1%
Differential diagnosis only          0%
Discordant            0%
Unable to be assessed  1%

Further information
Clinical correlation required          14%
Further sections, blocks or special stains required 51%
Referral required          3%

99 participants described features of the tumour as follows:

Lymphovascular invasion with or without invasion into the bowel wall         9
Lymphovascular invasion & greater than 1 cm in size     2
Invasion into the bowel wall         31
Low grade         9
High grade          2
Malignant         12
Well differentiated          26
Well differentiated & high grade/malignant/invasive        8

Tissue type
306 participants described the tissue with 99% indicating that it was small bowel. Two participants described
it as colon or large bowel.

Discussion
Concordant responses were those that included the target diagnosis of malignant carcinoid.

Minor discordant responses were those of carcinoid, possibly metastatic and epithelioid malignant tumour
with a differential of malignant carcinoid and malignant melanoma.

Comments

References
Case number     AP09-16
QAP identifier  EX07-220
Specimen        Heart
Original identifier HI-07-5897
Age & sex       43 year old female

Clinical notes
Mass in the left atrium.

Macroscopy
A lobulated soft mass, 70x50x40mm weighing 53g. The surface mostly is smooth but there is also a ragged area 35x25mm. Much of the surface is haemorrhagic and some mucoid material is adherent to it. On cross section, most of the tissue consists of soft, yellow, gelatinous material with areas of scattered haemorrhage.

Microscopy
Sections show a paucicellular myxoid tumour with characteristic plump mesenchymal cells, forming cords and surrounding thin-walled blood vessels, consistent with an atrial myxoma. There is prominent evidence of haemorrhage in the tissue. The ragged aspect of the tissue is made-up of cardiac muscle and adipose tissue, consistent with the wall of the atrium. This surgical margin is well clear of the tumour by 6mm.

Interim target diagnosis
Myxoma

Final target diagnosis
Myxoma

Responses
309 responses were assessed as:
- Concordant: 97%
- Minor discordance: 0%
- Differential diagnosis only: 1%
- Discordant: 0%
- Unable to be assessed: 1%

Further information
Clinical correlation required: 16%
Further sections, blocks or special stains required: 28%
Referral required: 9%

Tissue type
50 participants described the tissue with 92% indicating that it was cardiac, endocardial, myocardium or cardiac valve.

Discussion
Concordant responses were those that included the target diagnosis of myxoma.
Minor discordant responses were those of fibroelastoma with thrombus.

Comments

References
Case number        AP09-17
QAP identifier     EX07-230
Specimen           Total Abdominal Hysterectomy
Original identifier HI-07-5002
Age & sex         82 year old female

Clinical notes
Degenerated fibroid ? Malignant.

Macroscopy
A uterus including the cervix with both fallopian tubes and ovaries attached weighing in total 165g. The uterus and cervix together are 95x60x55mm. Most of the cavity of the uterus is filled by partly necrotic, pale tan-white tumour approximately 65x55x45mm which has obliterated the inferior half of the endometrial cavity. Some parts of the tumour are soft and friable but others are firm. It has extensively invaded and replaced the myometrium and in places has extended to within 1mm of the serosal surface.

Microscopy
There is a partly necrotic, cellular biphasic malignant mixed mullerian tumour (carca-sarcoma) occupying most of the uterus. The glandular component resembles a high grade endometrioid adenocarcinoma with cribriform glands and solid nests. The cells have enlarged nuclei with coarse chromatin and central large nucleoli. The sarcomatous component consists of fascicles of pleomorphic malignant spindle cells with oval, enlarged nuclei. Numerous tumour giant cells are seen and the mitotic count is more than 40/10 hpf. The carcinomatous component invades at least 05.mm into a 3mm thick myometrium. The depth of the invasion for the sarcomatous component is difficult to assess since the endometrial/myometrium junction is obliterated, but it appears to involve more than half the thickness of the myometrium with the closest margin being 1mm from the serosal surface. No vascular involvement. There is one paratubal cyst adjacent to each fallopian tube. The cysts are lined by 1-2 layers of attenuated epithelium. The ovaries, fallopian tubes and cervix are otherwise unremarkable. Malignant mixed Mullerian tumour, (carcinoma), invading the myometrium, 1mm from nearest serosal surface. No vascular invasion and no cervix

Interim target diagnosis
Malignant mixed Mullerian tumour

Final target diagnosis
Malignant mixed Mullerian tumour

Responses
309 responses were assessed as:

Concordant 84%
Minor discordance 9%
Differential diagnosis only 2%
Discordant 4%
Unable to be assessed 1%

Further information
Clinical correlation required 13%
Further sections, blocks or special stains required 46%
Referral required 11%

Tissue type
293 participants described the tissue as uterus.

Discussion
Concordant responses were those that included the target diagnosis of malignant mixed Mullerian tumour.
Minor discordant responses were endometrioid adenocarcinoma with leiomyosarcoma/sarcoma.
Discordant responses were those of endometrioid adenocarcinoma/carcinoma, endometrioid adenocarcinoma with leiomyoma, and adenocarcinoma.

Comments
References
Case number: AP09-18
QAP identifier: EX09-199
Specimen: Nape of neck
Original identifier: HI-09-5216
Age & sex: 57 year old male

Clinical notes:
Lipoma

Macroscopy:
A soft round yellow a lobulated lesion 52 x 45 x 41 mm surrounded by a thin capsule of fibrous connective tissue. The cut surface is pale yellow and homogenous in appearance.

Microscopy:
This consists mostly of mature fat cells which are relatively uniform in size with a poorly defined lobulated structure but it also includes multiple areas that consisting of spindle cells with darkly basophilic oval or more elongated nuclei and scanty indistinct pale cytoplasm situated in a fibromyxoid stroma. Within this stroma there are occasional bundles of strongly eosinophilic collagen fibres. The lesion is surrounded by a well-defined fibrous capsule external to which there are some areas of collagenous connective tissue containing an occasional thick-walled blood vessel.

Interim target diagnosis:
Spindle cell lipoma (benign)

Final target diagnosis:
Spindle cell lipoma (benign)

Responses:
310 responses were assessed as:
- Concordant: 69%
- Minor discordance: 25%
- Differential diagnosis only: 1%
- Discordant: 4%
- Unable to be assessed: 1%

Further information:
- Clinical correlation required: 9%
- Further sections, blocks or special stains required: 28%
- Referral required: 10%

Tissue type:
166 participants described the tissue with 97% describing it as connective tissue such as adipose tissue and 3% as skin.

Discussion:
Concordant responses were those that included the target diagnosis of spindle cell lipoma.
Minor discordant responses were those of lipomas with other than spindle cell lipoma (eg angiofibrolipoma, atypical lipoma, angiomyxolipoma, lipoblastoma, fibrolipoma, myxoid lipoma, pleomorphic and myxoid spindle cell lipoma).
Discordant responses were those of liposarcoma.

Comments:

References:
Case number  AP09-19  
QAP identifier  EX05-112  
Specimen  Upper lip  
Original identifier  05H-1319  
Age & sex  28 year old female  

Clinical notes  
Mucous retention cyst upper lip.  

Macroscopy  
A firm pale grey nodule 12x9x9mm with a homogeneous cut surface with some attached fibrous tissues.  

Microscopy  
The nodule consists of a circumscribed solid neoplasm enclosed by a fibrous capsule. Some parts are cellular and consist of medium-sized cells with a small amount of eosinophilic cytoplasm arranged in sheets, irregular groups or trabeculae. Occasionally with formation of small glandular structures. Nuclei are irregularly oval with finely stippled chromatin. Other areas are myxoid or chondroid and sparsely cellular.  

Interim target diagnosis  
Pleomorphic adenoma  

Final target diagnosis  
Pleomorphic adenoma  

Responses  
310 responses were assessed as:  
Concordant  98%  
Minor discordance  2%  
Differential diagnosis only  0%  
Discordant  0%  
Unable to be assessed  1%  

Further information  
Clinical correlation required  6%  
Further sections, blocks or special stains required  18%  
Referral required  3%  

Tissue type  
289 participants described the tissue with 44% indicating that there was a minor salivary gland present, 29% that is was mucosal tissue and 13% that it was from the lip.  

Discussion  
Concordant responses were those that included the target diagnosis of pleomorphic adenoma. Minor discordant responses were those of chondroid syringoma.  

Comments  

References
**Clinical notes**
Testicular mass

**Macroscopy**
A testis 55x37x35mm and weighing 74g with attached spermatic cord 75mm long and 20mm in diameter at its distal end. In the inferior pole there is a well-defined pale grey homogenous nodule 30x28x28mm containing an ill-defined central haemorrhagic area. It extends to within 1mm of the surface of the testis and 5mm from the rete testis. The surrounding testicular tissue is tan coloured and homogenous.

**Microscopy**
The body of the testis is extensively involved by a cellular neoplasm in which the cells are arranged in sheets. These are composed of cells of three types which are small, intermediate and large. In many nuclei the chromatin has a spirme pattern. Mitoses are frequent, prominent and many are atypical. There is some intratubular extension of the tumour but no involvement of the tunica albuginea or the rete testis. In the adjacent testis spermatogenesis is evident in uninvolved seminiferous tubules.

**Interim target diagnosis**
Seminoma of spermatocytic type

**Final target diagnosis**
Seminoma of spermatocytic type

**Responses**
309 responses were assessed as:
- Concordant: 75%
- Minor discordance: 1%
- Differential diagnosis only: 1%
- Discordant: 22%
- Unable to be assessed: 1%

**Further information**
- Clinical correlation required: 11%
- Further sections, blocks or special stains required: 46%
- Referral required: 11%

**Tissue type**
303 participants described the tissue as testis.

**Discussion**
Concordant responses were those that included the target diagnosis of seminoma of spermatocytic type.
Minor discordant responses were those of atypical seminoma.
Discordant responses were seminomas other than spermatocytic (including anaplastic, classical and pure) and hepatoid yolk sac tumour.

**Comments**

**References**