The Royal College of Pathologists
Pathology: the science behind the cure

FRCPath Part 2 Examination in Histopathology

SHORT CASES SPRING 2016

COMMENTARY

1. **Female age 50. Lesion in left breast, gradually increasing in size. Core biopsy.**
   Fibroadenoma with epithelial hyperplasia

   Mean 2.17/5

   In the opinion of the examiners this breast core biopsy was from a conventional fibroadenoma showing epithelial hyperplasia of usual type. There was considered to be no epithelial atypia and the stromal cellularity was felt to lie within the acceptable range for a fibroadenoma. The architectural features were also felt to be those of a benign fibroadenoma.

   This case prove to be unexpectedly difficult to candidates and the majority of candidates discussed a differential diagnosis of fibroadenoma and benign phyllodes tumour and were unable to come to a conclusion, many categorising the lesion as a fibroepithelial lesion of uncertain malignant potential and grading the lesion as B3.

   To gain a basic pass marked candidates are expected to make a confident diagnosis of fibroadenoma. Equivocation and grading as B3 was marked down slightly as a borderline fail. Any clearly malignant diagnosis or diagnosis of a primary stromal neoplasm was regarded as a clear fail.

   This case was difficult to add further value to, but candidates making more confident and clinically helpful diagnosis were given additional marks.

   A small number of candidates misinterpreted the usual type epithelial hyperplasia as atypical ductal hyperplasia, ductal carcinoma in situ or in situ lobular neoplasia.

2. **Male, age 45. HIV positive. Non-resolving pneumonia. Also history of night sweats and weight loss. Open lung biopsy.**
   Pnemocystis jiroveci pneumonia and lymphoma

   Mean 2.54/5

   This case included two obvious and separate pathologies, but with a common aetiology. The clinical history was helpful.

   To gain a pass mark candidates had to observe the characteristic features of pneumocystis pneumonia and also raise suspicion of lymphoma, noting the presence of abundant atypical lymphocytes. Candidates mistaking the pneumocystis pneumonia for pulmonary alveolar proteinosis did not lose marks.

   Borderline fails were awarded to candidates identifying only one of the two pathologies. Clear fails were awarded to candidates who failed to note either pathology and who made other diagnoses.

   Candidates who added value by suggesting appropriate special stains and immunohistochemistry were awarded additional marks, as were candidates who made valid clinicopathological correlations. Candidates noting the need to exclude other infective conditions were also given additional marks.

   This question was answered well by many candidates, with many correctly observing both lesions and offering a reasonable strategy to confirm the diagnoses. A significant minority of candidates found only one lesion. Only a few candidates failed to note both lesions or suggested inappropriate malignant diagnosis involving other tumour types.

3. **Male age 51. Abnormal omental fat noted at repair of incisional hernia. Biopsied.**
   Fat necrosis

   Mean 2.65/5

   This straightforward case was chosen as an example of an unexpected per-operative finding which any pathologist might be expected to interpret in routine practice.

   Pass marks were awarded to candidates who gave a competent description of fat necrosis and arrived at a confident and correct diagnosis. Candidates who were able to make clinical correlation with the history of incisional hernia and likely entrapment were awarded additional marks, as were candidates giving better than average descriptions of the lesion. Candidates who considered other appropriate causes of fat necrosis were also given additional marks.

Candidates lacking confidence and equivocating as to the diagnosis or indicating the need to undertake immunohistochemical stains to confirm the diagnosis were marked down slightly. Malignant diagnoses were regarded as clear fails.

The majority of candidates answered this question well, with many adding some additional value by correctly identify the likely aetiology. A small number of candidates were able to describe the morphological changes but did not recognise these as fat necrosis and suggested alternative benign diagnosis. Very occasional candidates offered dangerous malignant diagnoses: these were regarded as egregious errors and marked as clear fails.

4. Male, age 78. Lesion scalp: part solid, part cystic. Excised.
Proliferating pilar tumour

Mean 2.48/5

This case was chosen as a good example of a skin lesion which might be encountered by any pathologist working in a District General Hospital. Proliferating pilar tumours are regularly encountered in routine practice and it is important that these lesions are not misdiagnosed as squamous cell carcinomas.

Pass marks were awarded to candidates able to give a competent description, appreciate the pilar nature of the lesion and arrive at a diagnosis of proliferating pilar tumour or a differential diagnosis favouring this lesion. Additional marks were awarded to candidates adding additional value by stating that excision is not complete, understanding the histogenesis of these lesions and indicating knowledge of epidemiological factors.

Borderline fails were given to those candidates lacking confidence, equivocating between benign and malignant diagnoses. Clear fails were given for confident diagnoses of malignancy, or for diagnoses of pilar cyst NOS (and failing to appreciate the proliferative nature of this lesion).

This case was answered adequately by most candidates, with a few managing to add value and score additional marks. A minority of candidates offered inappropriate diagnoses of malignancy by diagnosing squamous cell carcinoma or trichilemmal carcinoma. Some candidates made inappropriate benign diagnoses, including pilomatricoma.

5. Male age 28. Left testicular enlargement. Orchidectomy.
Embryonal carcinoma testis

Mean 2.49/5

This case was chosen as a good example of embryonal carcinoma of testis and the case gave candidates an opportunity to gain additional marks by indicating appropriate immunohistochemistry and correlating with clinical and epidemiological observations. In the opinion of examiners this was not a mixed germ cell tumour.

To gain a pass mark candidates had to give a competent description and arrive at a differential diagnosis of embryonal carcinoma or a differential diagnosis favouring this diagnosis. Additional marks were awarded to candidates able to indicate appropriate immunohistochemistry and suggest relevant clinical tests.

Candidates who diagnosed other forms of germ cell tumour were given borderline fails. Inappropriate diagnoses of lymphoma or seminoma were marked as a clear fail.

This case was generally well answered and the majority of candidates passed this question, with many adding significant value to their answers. A significant minority of candidates lost marks by inappropriate observation of other germ cell elements and a few candidates made confident diagnoses of pure seminoma of classical type.

6. Male age 44. Small bowel intussusception. Resection of polypoid lesion small bowel.
Inflammatory fibroid polyp.

Mean 2.34/5

This case was chosen as a good example of a relatively uncommon gastrointestinal lesion which may present acutely and be encountered in routine DGH practice.

Basic pass marks were awarded to candidates giving an adequate description of the lesion and arriving at the correct diagnosis or a differential diagnosis favouring the correct diagnosis.

Additional marks were given to candidates suggesting appropriate immunohistochemistry to confirm the diagnosis and exclude other possibilities. Candidates indicating an understanding of the origin and likely neoplastic nature of these lesions were also given additional marks.

Borderline fails were given to candidates offering broad differential diagnoses without favouring the correct diagnosis, or making confident diagnoses of GIST, leiomyoma or benign neural tumours. Other malignant diagnoses were given clear fails.

This case was well answered by a small majority of candidates. Many candidates resorted to broad differential diagnoses without a favoured diagnosis, and one or two candidates favoured inappropriate diagnoses of lymphoma or Langerhans cell histiocytosis.

7. Male, age 80. Polypoid lesion, tip of tongue. Excisional biopsy.
Hyperplastic candidiasis, tongue

Mean 2.65/5

This case was chosen to test candidates' powers of observation and their ability to correlate aetiology and pathological changes. Fungal spores and hyphae were clearly visible on each of the slides used for the exam.

Pass marks were given to candidates noting the fungi and giving an adequate description of the associated squamous hyperplasia. Additional marks were given to candidates indicating the need for specific fungal stains and making appropriate clinicopathological correlations.

Borderline fails were awarded to candidates who did not observe the fungal elements but arrived at as benign diagnosis. Clear fails were given to occasional candidates who described dysplasia or malignancy.

This case was answered well by most candidates, and many also added significant value with appropriate use of special stains and by drawing appropriate clinicopathological correlations. A few candidates failed to observe the fungi. Occasional candidates made inappropriate diagnoses of malignancy or vascular neoplasia.

8. Female, age 55. Well-defined opacity detected in lower outer quadrant left breast. Excisional biopsy.
Intraduct papilloma breast

Mean 2.62/5

This case was regarded by examiners as a good example of an intraduct papilloma which could have been reported without further immunohistochemical stains.

Pass marks were given to candidates correctly diagnosing intraduct papilloma. Additional marks were given to candidates offering more complete descriptions and advising appropriately on further management of the case.

Borderline fails were given to candidates identifying atypical hyperplasia or giving broad differential diagnoses. Clear fails were given for inappropriate diagnoses of malignancy.

Candidates answered this case very well, and the great majority passed the question, with many adding considerable value to their answers. A small minority lacked confidence and resorted to

differential diagnoses, or saw atypical hyperplasia. One or two candidates made inappropriate diagnoses of malignancy.

9. Female age 76. Vulval erosion. Punch biopsy.
Extramammary Paget's disease

Mean 3.12/5

This was a straightforward example of extramammmary Paget's disease affecting the vulva.

To gain a pass mark candidates had to give a competent description of the lesion and make a confident diagnosis of extramammary Paget's disease or offer a differential diagnosis and an indication of the immunohistochemical stains required to confirm a diagnosis of extramammary Paget's disease.

To add value candidates had to indicate the immunohistochemical stains required to prove the diagnosis. Additional marks were given to candidates indicating a deeper knowledge of the role of immunohistochemical staining in distinguishing between vulval and bladder/ anus origin.

The case was answered adequately by all candidates and many candidates managed to add significant value to their answers.

10. Male age 54. Lesion right post nasal space. Biopsied.
Nasopharyngeal carcinoma

Mean 2.52/5

This case was chosen as a good example of a nasopharyngeal carcinoma. The case offered candidates an opportunity to add value to their answers by suggesting appropriate immunohistochemical investigations and demonstrating an understanding of the epidemiology and natural history of the condition.

Candidates were awarded a pass mark for giving a good description of the lesion and making a diagnosis of nasopharyngeal carcinoma or a differential diagnosis favouring this diagnosis. Candidates could add value by indicating appropriate further pathological investigations to confirm the diagnosis, and indicating a knowledge of epidemiology and clinical behaviour.

Borderline fails were given to candidates using inexact or outmoded terminology (lymphoepithelioma), or resorting to broad differential diagnoses without a favoured diagnosis. Clear fails were awarded to candidates making a confident diagnosis of lymphoma or benign lesions.

This case was answered well by most candidates, but a significant minority lost marks by using outdated terminology or resorting to broad differential diagnoses. Occasional candidates made inappropriate diagnoses of lymphoma.

11. Male age 41. Haematuria. Needle core biopsy of mass left loin.
Renal cell carcinoma

Mean 2.72/5

This case was chosen to test the ability of candidates to arrive at a diagnosis on a needle core biopsy. Candidates were given a helpful history.

To gain a pass mark candidates had to provide an adequate description and arrive at the correct diagnosis or a differential diagnosis favouring the correct diagnosis.

Additional marks were given to candidates suggesting appropriate immunohistochemistry to confirm, and indicating a knowledge of Fuhrman grading. Borderline fails were awarded to candidates whose answers lacked confidence or precision.

Most candidates answered this question very well, with a majority adding some value to their answers.

12. Male, age 77. Lesion scalp. Punch biopsy
Spindle cell melanoma

Mean 2.51/5

This was an intentionally difficult case, set to consider the ability of candidates to evaluate a spindle cell neoplasm of skin. There were some clues in the lower epidermis which might alert candidates to the likely melanocytic nature of the lesion: it would however be regarded as good practice to confirm this diagnosis immunohistochemically.

The marking scheme was set to reward candidates considering malignant melanoma in a differential diagnosis whilst at the same time considering other forms of spindle cell neoplasia of skin and using an appropriate panel of immunohistochemical markers to determine the final diagnosis. Candidates gained additional marks by indicating an appropriate and complete immunohistochemical panel or by providing a better than average description, noting the changes in the lower epidermis that might raise suspicion of malignant melanoma. Candidates favouring melanoma and noting the need to establish BRAF status were also rewarded.

Candidates whose approach was over-confident and who did not consider the need for immunochemical staining were marked down. Candidates arriving at confident diagnosis of other forms of spindle cell neoplasia of skin without immunohistochemical staining were given clear fails, as were candidates arriving at benign diagnoses.

Despite being a difficult case candidates answered this question well, with the majority achieving pass marks and a significant proportion of candidates also adding value. A few candidates lost marks by unfocused differentials, inappropriate immunohistochemistry (not including stains to consider the possibility of melanoma) and also over-confident diagnosis of other forms of cutaneous neoplasia.

13. Female age 38. Itchy purple lesion, left wrist. Biopsy.
Lichen planus

Mean 2.55/5

This was a straightforward case, set to consider the ability of candidates to evaluate an inflammatory process in a skin biopsy. Lichen planus is a common disorder, encountered in routine practice in most DGH Pathology Departments.

To gain a pass mark candidates were expected to identifying the correct inflammatory pattern (lichenoid) and to give a differential diagnosis including lichen planus.

Additional marks were given to candidates making a confident diagnosis of lichen planus and giving better than average description. Candidates indicating some clinical knowledge of lichen planus were also given additional marks, especially those candidates correlating clinical signs and symptoms with the histology.

Candidates describing an inflammatory lesion without noting the lichenoid nature of the process were given borderline fails. Clear fails were given to candidates who did not recognise this as an inflammatory dermatosis, to candidates arriving at malignant diagnosis and to candidates making confident diagnoses of blistering skin disorders.

This case was answered well by most candidates with many managing to add some value by better than average descriptions or clinical correlations. A minority of candidates failed to notice the lichenoid nature of the inflammatory infiltrate and a small number of candidates made inappropriate diagnoses of blistering skin disorders and neoplasia. The most common error was to fail to note the lichenoid nature of the inflammatory infiltrate and favour a diagnosis of discoid lupus erythematosus.

14. Female age 65. Chronic abdominal pain. Sub-total pancreatectomy.
Chronic pancreatitis

Mean 2.64/5

This case was considered by examiners to be a good example of uncomplicated chronic pancreatitis, and the case was included to examine the ability of candidates to recognise the histological process and confidently exclude neoplasia.

Pass marks were given to candidates indicating a diagnosis of chronic pancreatitis and giving a good basic description of the process. Additional marks are given to candidates considering possible aetiology and making appropriate clinicopathological correlation. Additional marks were also given to candidates who could confidently exclude the possibility of chronic sclerosing pancreatitis on the basis of the histological findings. Borderline fails were given to candidates lacking confidence in the diagnosis or resorting to immunohistochemistry to exclude other diagnoses. Clear fails were given to candidates diagnosing neoplasia.

This case was answered well by the majority of candidates, with many adding some value to their answers. Many candidates suggested chronic sclerosing pancreatitis and imagined features of this condition: in the opinion of examiners there were no plasma cells and there was no onionskin fibrosis. Candidates over-stating these features were not penalised but candidates who confidently excluded the possibility of chronic sclerosing pancreatitis were given additional marks. A very small number of candidates preferred inappropriate malignant diagnoses.

15. Female, age 48. Subcutaneous lesion left ankle. Excised.
Neurilemmoma

Mean 2.36/5

This case was set to consider the ability of candidates to recognise diagnostic features in a difficult spindle cell neoplasm of soft tissue which retained some features of neurilemmoma, complicated by other degenerative features. This is a problem which will be encountered by many pathologists in routine practice.

Pass marks were awarded to candidates able to identify the features of neurilemmoma and give a competent description of the various histological changes. Additional marks are given to those candidates giving a better than average description and making a confident final diagnosis, indicating the need for appropriate immunohistochemistry.

Fail marks were awarded to candidates arriving at malignant diagnosis. Borderline fails were given to candidates offering broad differential diagnoses of benign lesions without a preferred diagnosis, or diagnosing other benign connective tissue neoplasms, especially myofibroblastic lesions.

This case was answered variably by candidates. A majority of candidates arrived at the correct diagnosis and some added value by offering good descriptions and appropriate use of immunohistochemistry. A significant minority of candidates were misled by the histological features and arrived at inappropriate malignant diagnoses. A few candidates lacked confidence and resorted to extensive differential diagnoses. There was a common tendency to over-state the vascular elements and conclude that this was a vascular neoplasm.

16. Male age 42. Enlarged lymph node distal mesentery, adjacent to appendix mass.
Necrotising granulomatous lymphadenopathy

Mean 2.67/5

This case was chosen to assess the ability of candidates to diagnose and investigate necrotising granulomatous lymphadenopathy in an abdominal context. The history included the helpful information that the lymph node came from distal mesentery, adjacent to an appendix mass.

To gain a pass mark candidates had to give a competent description of non-coalescing necrotising granulomata with central necrosis and peripheral palisading. Candidates also had to indicate the need for appropriate special stains to consider the possibility of tuberculosis.

Borderline fails were awarded to candidates favouring a diagnosis of Crohn's disease (the necrotising nature of the granulomatous process would be unusual in Crohn's disease). Clear fails were awarded to any candidates considering malignant diagnoses or failing to consider the important differential diagnosis of tuberculosis.

Additional marks were given to candidates offering a better than average description and also considering the case in the clinical context. The history and anatomical location should have raised the possibility of Yersinia infection and the better answers considered the need for serological testing to consider this possibility.

Candidates generally answered this question well: the great majority passed and many added significant value to their answers. A few candidates indicated a preference for Crohn's disease or failed to indicate the need to exclude tuberculosis.

17. Female, age 29. Post-coital bleeding. Large polyp removed from cervix. Eight week history of amenorrhoea.
Benign isthmic polyp with pregnancy associated changes

Mean 2.31/5

This case was chosen to consider the ability of candidates to consider a polypoid lesion of the cervix in the clinical context. The clinical history indicated clearly the age of the patient (at the peak of the reproductive life) and also gave the helpful history of amenorrhoea. In this context a good pathologist would be considering the possibility that the patient might be pregnant.

To gain a pass mark candidates had to give an adequate description and indicate the correct basic diagnosis of pregnancy related changes in a benign polyp. To gain additional marks candidates had to identify likely isthmic origin, given the presence of both cervical and endometrial elements. Candidates could also add value by seeking clinical confirmation of pregnancy and correlating the histological appearance of the lesion with likely pregnancy.

Borderline fails were given to those candidates who diagnosed a benign lesion but failed to appreciate that the patient was likely to be pregnant. Clear fails were given to candidates making inappropriate confident diagnoses of malignancy: in the context these were regarded as egregious errors.

Candidates answer this question rather poorly and many candidates failed to note that the patient might be pregnant: only just over half of the candidates correctly identified that the patient was likely to be pregnant. Approximately one quarter of candidates added value by seeking clinical correlation. A significant minority of candidates made egregious malignant diagnoses which would have had significant implications for the patient.

18. Female, age 57. Mass right side of neck.
Paraganglioma

Mean 2.75/5

This case was chosen as a good example of a paraganglioma arising in a common anatomical location. The case was considered to be straightforward by the examiners.

Pass marks were awarded to candidates arriving at the correct diagnosis of paraganglioma/chemodectoma, or a differential diagnosis favouring this diagnosis. Candidates also had to give an adequate description of the lesion.

Additional marks were given to candidates indicating appropriate immunohistochemical investigations. Candidates could also gain marks by noting the presence of embolisation material within the lesion and offering comments regarding epidemiology, association with multiple endocrine neoplasia syndromes and indicating awareness that prediction of the metastatic potential of paragangliomas is not possible on the basis of histology alone.

Borderline fails were given to candidates lacking confidence and resorting to broad differential diagnoses without a favoured diagnosis. Fail marks were given to candidates diagnosing metastatic malignancy or thyroid/parathyroid neoplasia, or categorically indicating that this is a benign lesion.

This case was answered well by nearly all candidates and many added significant value by indicating appropriate immunohistochemistry or indicating an understanding of the other associations of this lesion. Only a small proportion of candidates failed, mainly by offering inappropriate diagnoses of other forms of neoplasia.

19. Male, age 27. Dyspnoea. CT scan shows multiple nodules in both lungs. Smoker. Open biopsy right lung lower lobe.
Langerhans cell histiocytosis

Mean 2.74/5

Although a relatively rare lesion, candidates coped well with this good example of Langerhans cell histiocytosis.

To gain a pass mark candidates had to give an adequate description of the lesion and offer a differential diagnosis of non-neoplastic pulmonary lesions, including Langerhans cell histiocytosis. Additional marks were given to candidates able to make a confident diagnosis of Langerhans cell histiocytosis or indicate this as a favoured differential diagnosis. Further marks could also be gained by indicating appropriate immunohistochemistry and appreciating the significance of the history of smoking.

Borderline fails were awarded to candidates offering a differential diagnosis of benign conditions without mention of Langerhans cell histiocytosis. Clear fails were awarded to any candidates making malignant diagnoses.

The question was answered well by nearly all candidates with many adding significant value to their answers. A minority of candidates failed to mention Langerhans cell histiocytosis as part of other benign differentials.

20. Male, age 57. Colonoscopy for investigation of altered bowel habit. Polyp removed from sigmoid colon.
Traditional serrated adenoma

Mean 2.42

This case was chosen as a good example of a traditional serrated adenoma and aimed to assess the ability of candidates to assess and diagnose large bowel polyps, and their awareness of serrated neoplasia. The examiners note several recent publications on serrated neoplasia in the colon and the increasing awareness of the different forms of serrated polyp.

Basic pass marks were awarded to candidates offering a confident description of the lesion and correctly diagnosing a traditional serrated adenoma or providing a differential diagnosis favouring traditional serrated adenoma.

Additional marks were awarded to candidates indicating an understanding of the natural history and molecular biology of traditional serrated adenomas and making useful suggestion is as to clinical follow-up.

Borderline fails were awarded to candidates diagnosing the lesion as an adenomatous polyp or favouring other forms of serrated neoplasia. Borderline fails were also awarded to candidates lacking confidence and offering a list of differential diagnoses without favouring the diagnosis of traditional serrated adenoma. Clear fails were awarded to candidates making malignant diagnoses or indicating that the lesion was a simple hyperplastic polyp.

Just over half of the candidates answered this question adequately. Many candidates preferred diagnoses of other forms of serrated neoplasia or resorted to broad differential diagnoses without a favoured diagnosis.