

1. Advice for Exam Candidates

Introduction

There is no 'secret' or 'technique' that will ensure success in the MRCPATH exam and by far the best way to prepare is to do lots and lots and lots of routine diagnostic and autopsy work in as many busy general and specialist hospitals as you can over the years of your training. You should attend one of the major **diagnostic histopathology courses** and one of the major cytopathology courses close to your exam because they help fill gaps in your knowledge and give you confidence. Going over slide collections is tempting but is often not very helpful because slide collections are made up of fascinomas whereas the exam is made up of routine surgicals.

The examiner is looking for evidence that you will be a **safe** and **effective** pathologist when left to your own devices. *Safe* means that you know your limitations (know when to refer or defer) and have a mature approach to diagnosis i.e. you make diagnoses based on a combination of multiple factors: clinical, constellations of morphological criteria, ancillary results, etc. with due consideration of appropriate differentials and with regard to the consequences of your decisions. Diagnosis by picture-matching or putting undue emphasis on a single feature is not appropriate for consultant-standard candidates. *Effective* means you have sufficient knowledge and experience to be able to make a confident diagnosis in the majority of the cases – anyone can muddle through by sitting on the fence or referring every case – but this can cause harm by means of delayed diagnosis (= delay in getting appropriate treatment) or by causing the patient to undergo unnecessary repeat diagnostic clinical procedures.

As a trainee, try to avoid the comfort of staying in one institution for longer than 18 months. Moving around gives you a broader vision, you learn new 'tricks' from new colleagues and new ways of approaching the same conditions. This builds **breadth of experience** rather than depth – and both are important.

It is vitally important to ensure that you **keep good timing** – many have failed because they haven't given themselves time to answer all the questions or study all the cases. Take every opportunity you get to do mock exams and ensure that you are strict with yourself over timing. Take a watch or clock with you to the exam (but not one with an audible alarm). You are also well advised to check in advance the quality and build of the microscope available in the centre and consider taking your own instrument to the exam: making diagnoses in the pressure of the exam is stressful enough without having to fiddle with an unfamiliar objective turret, field of view, focus mechanism and maladjusted illumination system.

In diagnostic practice, **knowledge** (of what diseases exist and what criteria define them) is more important than a visual memory for pictures. The histopathology of any one disease entity is defined by the presence of a set of morphological (\pm clinical) criteria. Because any one or more of these criteria may dominate in a given instance of that disease, the overall histological *picture* may look dramatically different to a picture of the same disease occurring in another patient – the criteria for making that diagnosis, however, are the same. This is why *pattern matching* for diagnosis is potentially dangerous (pattern matching is only useful to recognise the presence or absence of any individual morphological criterion) and that is why this book concentrates on defining diagnostic criteria rather than illustrations of 'typical lesions'. Knowledge is built up over the years by getting into a habit of reading, teaching and doing. Knowledge is just as important for the practical exam as it is for the written exam – and even more so for real life diagnostic practice. A suggested reading list is given in the 'General Bibliography' of this book (see page xxiv).

There follows some general advice on approaching the practical aspects of the MRCPATH exam. The exam is in the process of changing as postgraduate medical education in the UK also undergoes restructuring towards 'run through' training with a defined curriculum and competency-based assessments. The moves are towards standardisation, centralisation and modularisation. In particular the autopsy component has been separated off from the main exam as autopsy training becomes more specialised. Gynae cytology may eventually also become a separate module. For details of the latest exam structures and what's expected of candidates see the documents posted on the RCPATH website, www.rcpath.org.uk.

At the end of this chapter I suggest a small (and incomplete) list of conditions you should always think about before arriving at a diagnosis (the 'Never Forget Group') and finally, for the desperate, I provide a list of mnemonics found throughout this book.

The Diagnostic Slides

Short Surgical Pathology Cases (usu. 20 cases)

- You get 9 minutes to write a structured report for each one: ① description, ② diagnosis, ③ clinical comment. You don't need all three for straightforward cases (obviously, ② is essential).
- Avoid lists of stains – if you feel the need for further stains or procedures always state why each stain is needed and what you would expect to see (i.e. how it will help you decide amongst the differentials). In the set of 20 surgical short cases it would be unusual to put in a case that needs lots of extra stains / procedures to arrive at a preferred diagnosis (this is the point of the long cases).
- Avoid lists of differentials and always attempt to give a preferred diagnosis. If your confidence level in your preferred diagnosis is low, say so, and discuss the most likely alternatives with reasons for and against. It is highly frowned upon for a differential to span the benign – malignant divide. This is clinically a useless position for a pathologist to maintain. If you are really stuck in this decision it may be a case you will have to 'refer for second opinion' but you can't do this too often (see below).
- Use formal language in your reports without anecdotes or use of 'note style' writing. For example: 'On this section alone my preferred diagnosis is X rather than Y. However, my degree of confidence is not high and, given the importance of making the distinction between X and Y in this case, I would like to ...' [continue, for example, with one of the following]:
 - '... examine further levels to look for [state the features that will help]'
 - '... perform a Congo red for amyloid to substantiate the H&E findings'
 - '... refer the case for a second opinion'
 - '... further sub-classify the lesion by making reference to a major dermatopathology textbook [or, better still, state a precise reference]'.
- An exam pass-standard candidate should be able to give a preferred or definite diagnosis for most of the 20 cases (*at least 17 of the 20 as a general rule of thumb*).

Long Surgical Pathology Cases

- These will be something like a renal, bone marrow trephine or liver biopsy with special stains or a tumour with special stains. Special stains may include tinctorial, immuno & EM \pm macro photo.
- Compose a formal and structured report as you would normally do in routine practice. Give your preferred diagnosis \pm a limited differential with reasons (as described for the short cases above).
- Show the examiner that you are able to interpret the significance of the special stains: positivity, negativity, strength / grade and distribution / pattern of staining, artefactual changes, etc.
- You may get an unexpected result in the specials – the examiners are trying to see how you cope, e.g. a probable follicular lymphoma with a negative CD10 stain.
- You may get an impossibly difficult case – this is deliberate and you are not expected to give the diagnosis but the examiner wants to see how you handle something you can't do. This will be where your experience and judgement – or lack of it – will really show.

Cytology

- Gynae short cases: at the end of your report you should give an appropriate recommendation for management based on the patient's age and previous smear history. State if inadequate and why.
- Non-gynae short cases should result in clear and unambiguous results. State if inadequate and why.
- For the long cases bear in mind problems of interpreting special stains and ensure you have the necessary controls.
- Make sure you are aware of (and familiar with) the common pitfalls: atrophic smear *vs.* severe dyskaryosis, decoy cells in urine *vs.* malignant cells, etc., etc., etc.

The Viva Voce and Macroscopic Pathology exam

- Display effective communication skills: address the questioner, look them in the eye, don't mumble, use clear expressive and articulate language, don't waffle and don't fight.
- If you don't know the answer to a question be honest and up-front. Say you don't know about that particular thing but what you do know is... [something closely related to the question] – and let the examiner stop you if they want to. Don't use 'politician speak' or weasel words to try and 'fool' the examiner: the examiner will not be fooled – and neither will they be impressed.
- The *viva* is part of an OSPE with a strict marking scheme so you cannot use it to admit 'mistakes' you made in the practical (\therefore there's no point discussing the cases with your fellow candidates).

The Autopsy

General

- This will be done on a separate day to the rest of the exam and possibly at a different centre.
- You will be allowed up to 3 hours to conduct the autopsy (excluding presentation and write-up).
- Review the notes and *consent form* and write a summary: age, date of death, clinical history.
- Conduct a risk assessment (use the local form / questionnaire where available).
- Ask the examiner about arrangements for contacting clinicians / students to attend the presentation.
- Discuss any special requirements anticipated (e.g. X-rays for neonates, microbiology, FS facilities).
- Do not criticise the instruments – although ask for others if required.
- On external examination: check identity, check for LNP and – ! – remember to check the back of the body.
- Health and safety is very important, slackness here can easily fail you:
 - maintain an orderly instrument layout and demonstrate safe handling of them
 - be clean and tidy at all times
 - do not leave pools of blood in the body cavities – rinse and sponge out.

Evisceration

- Consider taking ascitic fluid for culture if there is intra-abdominal sepsis.
- Remember to check for pneumothorax.
- The MTO may remove the cranium but you could be expected to remove the brain.
- Remove the diaphragm intact by cutting it flush with the thoracic wall.
- After removing the organs, clean the inside and outside of the body and check the inside of the rib cage for fractures (haemorrhage) and check for scoliosis / crush fractures of the spine.
- Ask if it is routine to remove the femur. [*NB*: This is not expected in the current MRCPATH exam.]
- Ask if you are expected to fix the brain (the preferred option) or dissect it fresh.

Organ Systems

- Show the examiner you have a good-quality dissecting technique: open both iliac veins down to the femorals at the level of the great saphenous vein; keep the pericardium (and display it); assess the skull thickness for Paget's disease; don't spill gastric contents or bile (open these structures into containers); don't leave part of the right atrium behind (you will have trouble demonstrating the SA node when asked). Also, it is generally not good if the examiner opens the 1st part of the duodenum for you to reveal the ulcers you missed! Remember the carotid and *vertebral* arteries (at least inspect the intracranial portions of the vertebrae [the current MRCPATH doesn't require a full dissection]).
- Show that you can think of things relevant to the clinical history or PM findings: remember the lymph nodes, bone marrow and tonsils in patients with lymphoproliferative disease; be prepared to comment on the renal arteries in someone with HT; take CSF by syringe from the 3rd / 4th ventricle for microbiology if there is reason to suspect meningitis or brain abscess.
- Show you have a good knowledge base: know your normal weights and measures, be prepared to discuss specialist dissection techniques and their indications (inflation of the lungs, vertebral arteries, conducting system, middle ear, etc.), issues of health and safety, consent and the Law (e.g. the Human Tissue Act, the Coroner's rules and when to refer a case to the Coroner), macro staining methods (for MI, amyloid, iron, etc.), toxicology, the future of autopsy (minimally invasive, radiologically assisted, sub-specialised, etc.), mortuary design and other topical issues.

Presentation and Writing a Report

- Periodically clean, dry and arrange the organs and instruments during the presentation.
- Start with the history then, in order: cause of death in ONS format → predisposing pathology → other major findings → trivia. Avoid lists of negatives. Demonstrate good interpretative skills.
- Be slick (e.g. you should be able to demonstrate the coronary arteries swiftly) and point specifically to pathology with a probe. Your manual dexterity (throughout the autopsy) is part of the assessment.
- Demonstrate good communication skills and show a good rapport with the clinicians.
- After presentation write the report and block index (ask the examiner for details – some may allow you to dictate). Remember to put the cause of death in the ONS format (for those over 28 days old) and do not use modes of dying as a substitute for a cause of death (see Chapter 25: Autopsy).

The Frozen Sections Exam

- Give a clear and unambiguous answer that will help the management – not a detailed report / diagnosis.
- If you are really stuck, you may ‘defer to paraffin’ but do this once too often and you will fail. Although in real life there is the possibility of requesting further levels on a FS or more tissue from the surgeon, the cases chosen for the exam are unlikely to require this.
- Remember FS artefacts (e.g. the lack of lacunar cells in NSHL or Orphan Annie nuclei in PTC) and be prepared to mention the possibility and utility of imprint cytology.

The ‘Never forget’ Group

Don’t make a diagnosis until you’ve considered the following – the mnemonic, ‘CAMMeLS’, will help you to remember:

- Chemotherapy / radiotherapy / inflammatory atypia
- Amyloid
- Melanoma (1° / 2°)
- Metastatic / 2° carcinomas (e.g. RCC metastatic to mucosae, skin or bone)
- Leukaemia: CLL, chloroma / ‘granulocytic sarcoma’ (AML / CGL)
- Sarcoid / Crohn’s (incl. extra-intestinal Crohn’s) / reaction to malignancy: when faced with true epithelioid granulomas

Mnemonics

Mnemonic Index

Condition/entity	Mnemonic	Chapter
‘Never forget’ group of diseases	CAMMeLS	Chapter 1: Advice for Exam Candidates
Atheroma (complications of)	CUT	Chapter 6: Vascular
Abbreviated list of T-cell / NK lymphomas:	THE PSALM	Chapter 10: Lymphoreticular
Morphological types of myoepithelial cells:	SPEC	Chapter 11: Alimentary Tract
Neuroendocrine cell tumours:	EDGE	Chapter 11: Alimentary Tract
Causes of malabsorption:	FIDLES BV	Chapter 11: Alimentary Tract
Drug effects in the small bowel	VACU	Chapter 11: Alimentary Tract
Drug effects in the large bowel	PUMICE	Chapter 11: Alimentary Tract
Hepatocellular carcinoma variants:	PC STAGS	Chapter 12: Liver, Biliary Tract and Pancreas
Nephrotic and nephritic syndromes:	POH / OHO	Chapter 15: Renal Medicine
Causes of 2° membranous GN:	SIND	Chapter 15: Renal Medicine
Causes of 2° FSGN:	S.H.I.P.	Chapter 15: Renal Medicine
Causes of nephrotic syndrome	DASHIN	Chapter 15: Renal Medicine
Infiltrating lobular carcinoma of the breast:	CAST	Chapter 18: Breast
MEN 1 (Wermer’s syndrome):	All the ‘P’s	Chapter 19: Endocrine
Painful lumps in skin / subcutis:	TEABAGSPEND	Chapter 20: Skin
Leukocytoclastic vasculitis (associations):	MAID	Chapter 20: Skin
Blistering diseases of the skin:	PERHEPS	Chapter 20: Skin
Distribution of bullous pemphigoid:	WOLF	Chapter 20: Skin
Epidermolysis bullosa acquisita (associations):	ABC	Chapter 20: Skin
Carcinomas metastatic to bone:	The 5 ‘B’s	Chapter 22: Osteoarticular
Albright’s syndrome:	All the ‘P’s	Chapter 22: Osteoarticular
Sarcomas positive for cytokeratins (CK):	PEARLS	Chapter 21: Soft Tissues
Malignant fibrous histiocytoma (MFH):	MAGIC Skin	Chapter 21: Soft Tissues
Kaposi sarcoma (clinical types):	CELTA	Chapter 21: Soft Tissues
Kaposi sarcoma (classical type):	WIELDA	Chapter 21: Soft Tissues
Kaposi sarcoma (endemic type):	SMACS	Chapter 21: Soft Tissues
Kaposi sarcoma (lymphadenopathic type):	RAW	Chapter 21: Soft Tissues
Kaposi sarcoma (transplant associated):	LAFS	Chapter 21: Soft Tissues
Kaposi sarcoma (AIDS associated):	MDM	Chapter 21: Soft Tissues
Causes of shock	CHAOS	Chapter 25: Autopsy

Exam Advice

5

Bibliography

Stamp, G.W.H. and Wright, N.A. (1990) *Advanced Histopathology*, 1st edn, Springer-Verlag, Berlin & Heidelberg.

Weir, J., Benbow, E.W. and McMahon, R.F.T. (2004) How to pass and how to fail the MRCPPath in histopathology part 2, *ACP News* (Winter 2004), 39–43.

Web sites

www.rcpath.org.uk (accessed April 2006) *MRCPPath Part 2 examination – Autopsy module: Guidelines for examiners and candidates* (2004), Royal College of Pathologists.