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Gross Specimen and Histopathology Spotter Method

Practical 01 / Spotter and viva

Aim

Describe a gross specimen or prepared slide using reproducible morphology and justify a likely process.

Principle

Gross and microscopic patterns complement each other. Architecture, distribution and cell changes support interpretation more reliably than colour alone.

Materials and Requirements

- Fixed specimens or de-identified images
- Prepared slides or digital fields
- Ruler and morphology worksheet

Procedure

1. Confirm organ orientation and describe size, external surface and cut surface using supplied measurements.
2. Start with the container or image label, clinical site and specimen type. Place the organ in its natural orientation and verify anterior, posterior and relevant margins with a labelled model.
3. Locate and describe lesions by number, border, colour, distribution and relation to adjacent structures.
4. Measure the teaching lesion in two dimensions using the scale. Describe the cut surface, border and nearby normal tissue and indicate whether the pattern is focal, multifocal or diffuse.

Continue with step 5 on the next page.

Procedure Continued

Gross Specimen and Histopathology Spotter Method

5. At low power assess architecture and at higher power identify key cells, necrosis, inflammation or atypia.
6. Scan the prepared section from normal into abnormal tissue at low power. Select a representative transition zone and note whether the normal architecture is preserved, replaced or distorted.
7. Use higher power to describe cell arrangement, nuclear features, inflammatory composition or necrosis where relevant. Compare a second field before making a provisional identification.
8. Give a provisional interpretation, differential and the finding that most strongly distinguishes the possibilities.
9. Present gross description, microscopic pattern and likely interpretation separately. Point to two discriminating features and document section quality or clinical information that limits confidence.

Precautions

- Handle preserved material under department rules.
- Do not assign clinical stage or cause from one gross view.

Observations and Interpretation

Gross Specimen and Histopathology Spotter Method

Observations and Record

Item	What to record	What it tells you
Gross description	Organ, location and lesion measurements	Establishes objective morphology
Microscopy	Architecture and dominant cell or tissue changes	Supports an underlying process
Interpretation	Likely process and a discriminator	Links morphology to case data

Worked Example

A supplied pale wedge-shaped renal lesion with its base at the cortical surface and microscopic coagulative necrosis supports infarction in the appropriate context.

Result and Interpretation

Give the specimen identification and two visible supporting features before stating the likely diagnosis.

Viva Questions and Answers

What is a useful first step at low power?

Assess overall architecture and locate a representative lesion.

Why describe the lesion before naming it?

The observation can be verified even if the diagnosis remains uncertain.

Inflammation Granulomas and Repair

Practical 02 / Spotter and viva

Aim

Differentiate acute inflammation, chronic inflammation, granulomatous reaction and granulation tissue.

Principle

The predominant cells, pattern and stromal response distinguish inflammatory processes. Granulomas and granulation tissue represent different tissue responses.

Materials and Requirements

- Prepared inflammation and repair slides or teaching micrographs
- Stain controls and case cards

Procedure

1. Review tissue architecture at low power and locate injured, inflammatory and repair zones.
2. Check the organ and stain label, then outline the lesion, viable tissue and any necrosis at low power. Identify the boundary where injury and surrounding response meet.
3. Identify neutrophils, mononuclear cells, epithelioid histiocytes and newly formed capillaries in the appropriate fields.
4. Under higher power record predominant inflammatory cells and distribution. Separate neutrophils from mononuclear cells and distinguish a macrophage aggregate from organised epithelioid granulomas.

Continue with step 5 on the next page.

Procedure Continued

Inflammation Granulomas and Repair

5. Describe necrosis, giant cells or fibrosis where present. Correlate with disease duration and supplied tests.
6. For a granuloma, describe whether necrosis or giant cells are visible and compare adjacent tissue. Use the supplied history and ancillary results to discuss the possible causes.
7. Compare at least one acute inflammatory field with a granuloma and a granulation tissue field.
8. On the repair slide find thin-walled new vessels, spindle cells and loose matrix. Compare earlier granulation tissue with an example showing denser collagen and fewer vessels.
9. Draw a labelled representative field for each pattern with objective magnification. Report the pattern before proposing a cause and identify any feature that would require special studies.

Precautions

• Use fixed material and de-identified images.

• Avoid calling every necrotising granuloma tuberculosis.

Observations and Interpretation

Inflammation Granulomas and Repair

Observations and Record

Item	What to record	What it tells you
Acute inflammation	Predominant cells and exudate	Supports acute reaction pattern
Granuloma	Epithelioid histiocytes and necrosis if visible	Prompts a cause-specific differential
Repair	Capillaries, fibroblasts and matrix	Supports granulation tissue or scar

Worked Example

An organised cluster of epithelioid histiocytes around necrosis is a necrotising granulomatous pattern. Aetiology requires clinical and laboratory correlation.

Result and Interpretation

Name the most supported pattern and one additional observation or result needed to assess cause.

Viva Questions and Answers

What predominates in many acute exudates?

Neutrophils commonly predominate.

How does granulation tissue differ from a granuloma?

Granulation tissue contains new vessels and repair stroma. A granuloma is an organised macrophage-rich inflammatory reaction.

Haematology Haemoglobin Cell Counts and Differential

Practical 03 / Teaching laboratory

Aim

Perform an approved simulated haematology count and assess a CBC against the smear and control records.

Principle

A count is quantitative, while a film reveals cell morphology and artefacts. Agreement between them helps validate interpretation.

Materials and Requirements

- Simulated analyser output and chamber data
- Prepared smear and microscope
- Instrument flags and QC worksheet

Procedure

1. Confirm identity, anticoagulant and possible clot or collection problems using the teaching record.
2. Match the teaching tube and request by two identifiers. Review fill, mix, collection time and reported instrument status. Hold results from a flagged or unsuitable specimen in the scenario.
3. Review haemoglobin, RBC, WBC, platelet counts and analyser flags. Calculate or check a supplied chamber count.

Continue with step 4 on the next page.

Procedure Continued

Haematology Haemoglobin Cell Counts and Differential

4. Note each value with units and age-appropriate interval. For the chamber calculation mark the counted squares and volume, use the stated dilution and compare the result with the supplied duplicate.
5. Select a representative smear zone, identify cells and calculate a differential and relevant absolute count.
6. Scan the feathered area at low power for clumps, then select the monolayer with well-distributed cells. Classify consecutive fields systematically and record unexpected morphology or platelet clumps.
7. Add the white cell tallies, divide each by the total and express the differential as a percentage. Multiply the selected fraction by total WBC to obtain its absolute value.
8. Compare the film with the analyser and flag inconsistent results for qualified review.
9. Reconcile the film description, count and analyser flags. Document possible interference and which item should be repeated, reviewed or urgently reported through the teaching workflow.

Precautions

- Use prepared or synthetic material and the adopted counting method.
- Do not ignore platelet clumping or a specimen identity discrepancy.

Observations and Interpretation

Haematology Haemoglobin Cell Counts and Differential

Observations and Record

Item	What to record	What it tells you
CBC	Hb, RBC, WBC and platelets with units	Quantifies cell concentrations
Differential	Counted cells and percentages	Derive absolute counts
Film	Morphology and clumps or artefact	Checks limitations of automated results

Worked Example

A teaching CBC has WBC 12,000/µL and lymphocytes 25%. Absolute lymphocytes are 3,000/µL. Compare that absolute value with the appropriate interval.

Result and Interpretation

Report an evidence-based CBC impression with the relevant flag, smear check and clinical context.

Viva Questions and Answers

Why review a smear when the analyser flags a count?

Morphology, clumps or other artefacts can explain the result.

How do you get an absolute differential count?

Multiply total WBC by the corresponding decimal fraction.

Peripheral Smear in Microcytic and Macrocytic Anaemia

Practical 04 / Spotter and viva

Aim

Recognise morphological patterns of microcytic and macrocytic anaemia and plan appropriate correlation.

Principle

Indices define average size and haemoglobin content. A representative film adds shape, size variability and white cell morphology.

Materials and Requirements

- Annotated microcytic and macrocytic teaching films
- CBC indices and supplied iron and vitamin results

Procedure

1. Read Hb and MCV using the stated patient context and laboratory interval.
2. Set up a case worksheet with Hb, haematocrit, MCV and any red cell distribution width supplied. Verify dates and check whether recent treatment or transfusion may affect the pattern.
3. Use the monolayer to compare cell size and central pallor and document anisopoikilocytosis.
4. Locate the monolayer at low power and then inspect several fields at the taught objective. Use nearby small lymphocyte nuclei for approximate size comparison where appropriate.

Continue with step 5 on the next page.

Procedure Continued

Peripheral Smear in Microcytic and Macrocytic Anaemia

5. Look for pencil cells or target cells in the microcytic example and macro-ovalocytes or neutrophil hypersegmentation in the macrocytic example.
6. Describe shape and pallor before suggesting a diagnosis. Compare the tendency toward a large central pale area in the microcytic example with large oval cells in the macrocytic example.
7. Scan sufficient fields for hypersegmented neutrophils or other white cell changes and record how often the characteristic forms occur in the inspected fields.
8. Relate film and CBC to supplied ferritin, inflammation markers or B12 and folate evidence as appropriate.
9. Write a morphology conclusion supported by two findings. Add the case's relevant iron or vitamin results and specify one missing result that would change the interpretation.

Precautions

• Avoid diagnosing deficiency from morphology alone.

• Interpret ferritin in the context of inflammation.

Observations and Interpretation

Peripheral Smear in Microcytic and Macrocytic Anaemia

Observations and Record

Item	What to record	What it tells you
Cell size and pallor	MCV, central pallor and variation	Supports the descriptive category
Distinctive feature	Pencil cells, target cells or macro-ovalocytes	Guides the differential
Corroboration	Relevant iron or vitamin test	Supports cause assessment

Worked Example

Low MCV, hypochromia and low ferritin support iron deficiency in a fictional case. Similar microcytosis with different iron studies requires a broader differential.

Result and Interpretation

Present the morphological category, supporting features and one confirmatory or discriminating test.

Viva Questions and Answers

Why inspect white cells in macrocytosis?

Hypersegmented neutrophils can support a megaloblastic pattern.

Can thalassaemia trait cause microcytosis?

Yes. The CBC, iron results and haemoglobin analysis help distinguish it.

Haemolytic Anaemia and Haemoglobinopathy Spotters

Practical 05 / Spotter and viva

Aim

Compare haemolysis markers and blood films from sickle cell disease and thalassaemia teaching cases.

Principle

Haemolysis can increase reticulocytes, LDH and indirect bilirubin and lower haptoglobin. Film findings and haemoglobin analysis refine the cause.

Materials and Requirements

- Prepared sickle cell and thalassaemia films
- Fictional CBC, reticulocyte and haemoglobin analysis reports

Procedure

1. Review Hb, MCV, reticulocytes and specimen context including recent transfusion.
2. Match the film, CBC and haemoglobin analysis to the same fictional patient. Note age, family history, treatment and dates of any recent transfusion before reading the result.
3. Identify target cells, sickled forms or other characteristic findings in selected marked fields.
4. Examine a monolayer and compare several fields. Describe size and shape changes and confirm whether elongated curved forms, target cells or fragments are reproducible and distinct from artefact.
5. Review LDH, bilirubin and haptoglobin patterns with the case history.
6. Compare reticulocytes, indirect bilirubin, LDH and haptoglobin with the supplied intervals and chronology. Identify results that may have other explanations or need repeat assessment.
7. Check the haemoglobin analysis method and pattern and state what further evidence is needed for diagnosis.
8. Review chromatogram or electrophoresis fractions and any instrument comments. Record the fraction values and consider how transfused cells or the method might alter the observed distribution.
9. Give the best supported pattern, a plausible alternative and the confirmation required in the scenario. Flag a concerning film finding promptly to the supervisor.

Precautions

- Use prepared slides and no live blood manipulation for this review.
- Record recent transfusion and method limitations.

Observations and Interpretation

Haemolytic Anaemia and Haemoglobinopathy Spotters

Observations and Record

Item	What to record	What it tells you
Film	Characteristic shape and size findings	Supports a differential
Haemolysis panel	Reticulocytes and biochemical markers	Assesses increased red cell destruction
Haemoglobin analysis	Fractions and transfusion history	Supports classification with clinical context

Worked Example

A fictional film has sickled cells and target cells with an HbS-containing profile. Recent transfusion can affect fractions, so confirm the context before classifying genotype.

Result and Interpretation

Explain why no single cell shape or one screening result settles the subtype.

Viva Questions and Answers

What does a reticulocyte rise suggest?

Increased marrow response when the marrow can respond.

Is every target cell due to thalassaemia?

Target cells also occur in other haemoglobinopathies and liver disease.

Blood Grouping Compatibility and Transfusion Records

Practical 06 / Teaching laboratory

Aim

Interpret forward/reverse ABO, RhD, antibody screen and compatibility records in a simulated blood bank case.

Principle

Transfusion safety begins with uninterrupted patient and product identification. ABO grouping, antibody screening and compatibility testing answer separate questions.

Materials and Requirements

- Non-biological blood bank trainer and simulated reaction table
- Fictional patient request and unit label
- Compatibility checklist

Procedure

1. Check identifiers on request, specimen, result and product label. Stop the scenario if any identifiers conflict.
2. Pair the teaching specimen, request and compatibility form. Compare component identification, type and requirement with the simulated order and escalate any mismatch before the compatibility exercise.
3. Read forward ABO, reverse ABO where appropriate, and RhD controls. Flag any discrepancy before proceeding.
4. Record each agglutination reaction and strength in its own row. Compare the forward cell group with the serum grouping where applicable and verify validity of the RhD and other required controls.

Continue with step 5 on the next page.

Procedure Continued

Blood Grouping Compatibility and Transfusion Records

5. Review the antibody screen and crossmatch method and results. Identify the responsibility for unresolved or emergency issues.
6. Follow the training record in order from antibody screen through unit selection and compatibility testing. Identify the patient sample, donor unit and final authorised compatibility entry.
7. Demonstrate the bedside check with the training unit and case wristband under supervision. Verify order, consent, identity, component number, compatibility, special requirements, expiry and baseline observations.
8. If a reaction is suspected, stop the simulated transfusion and call for help. Assess airway, breathing and circulation and monitor vital signs. Keep IV access without flushing the existing blood line. Use separate access when needed under the facility procedure.
9. Repeat the identity checks. Notify the responsible clinician and transfusion service and retain the mock component, tubing and records for review.
10. Record what was administered or withheld, time, observations and person informed. Compare the unit number with the record before closing the scenario.

Precautions

- Use only training products in the station.
- Real reactions or compatibility decisions require the authorised clinical and transfusion service pathway.

Observations and Interpretation

Blood Grouping Compatibility and Transfusion Records

Observations and Record

Item	What to record	What it tells you
Patient and unit identity	Matched identifiers and dates	Prevents mistransfusion
ABO/RhD and screen	Valid reactions and historical comparison	Documents grouping and antibody information
Compatibility	Crossmatch result and authorisation	Supports issue only under the approved protocol

Worked Example

In a fictional adult specimen, forward grouping suggests A but reverse grouping is discordant. Hold the routine simulated issue and refer the discrepancy to the blood bank.

Result and Interpretation

Present an identity-first compatibility assessment and specify the unresolved issue or authorised decision.

Viva Questions and Answers

What is the goal of crossmatching?

To assess compatibility between a selected red cell unit and the intended recipient under the relevant method.

Can a known group replace identity checking?

Identity verification is still required at each relevant stage.

Liver Function Viral Serology and Jaundice

Practical 07 / Report and data interpretation

Aim

Interpret a jaundice case using bilirubin fractions, enzyme patterns, synthetic function and hepatitis serology.

Principle

Marked transaminase elevation and disproportionate cholestatic enzyme elevation suggest different patterns. Serology adds information about exposure, immunity or infection depending on the marker combination.

Materials and Requirements

- Teaching liver chemistry, coagulation and viral marker reports
- Case history and supplied imaging result

Procedure

1. Record timeline, symptoms, medication history and the test units. Look for concerning illness and involve the supervisor promptly.
2. Build a time line for symptoms, drug or supplement exposure, relevant travel and the laboratory dates. Check that results belong to the same case and use the printed limits.
3. Compare bilirubin fractions and ALT and ALP relative to their method limits. Review INR and albumin in context.
4. Compare direct and total bilirubin in matching units. Calculate ALT and ALP as multiples of their upper reference limits and compare the predominance with the supplied clinical findings.

Continue with step 5 on the next page.

Procedure Continued

Liver Function Viral Serology and Jaundice

5. Review INR, albumin and the trend with the clinical record. Note possible non-hepatic influences on individual tests and which findings increase the urgency of review.
6. Interpret the exact supplied viral markers and examine whether timing or a confirmatory test is needed.
7. Write the name of each viral antigen, antibody or nucleic acid test before interpreting it. Combine the markers on the relevant case chart and identify when repeat or confirmatory testing is needed.
8. Compare a cholestatic case with a predominantly hepatocellular one and formulate a targeted follow-up question.
9. Give a short report with timeline, dominant biochemical pattern, particular serology finding and next step. Flag abnormal coagulation or deteriorating status through the supervised pathway.

Precautions

- Do not infer obstruction from one laboratory value.
- Interpret coagulation values with anticoagulant and other relevant clinical context.

Observations and Interpretation

Liver Function Viral Serology and Jaundice

Observations and Record

Item	What to record	What it tells you
Injury pattern	ALT, AST and ALP relative to limits	Supports interpretation of injury pattern
Function and fractions	INR, albumin and direct bilirubin	Add severity and context
Serology	Marker, date and combination	Distinguishes an exposure or immunity pattern from unresolved disease

Worked Example

Fictional anti-HBs positive, total anti-HBc negative and HBsAg negative is consistent with vaccine-associated immunity in the appropriate context. Verify the full panel and history.

Result and Interpretation

Summarise the likely biochemical pattern, the supported serology interpretation and any urgent concern.

Viva Questions and Answers

What does HBsAg suggest when confirmed?

Current hepatitis B infection, with timing and other markers informing the phase.

Why compare ALT and ALP to their own limits?

The raw numbers use different reference distributions and cannot be compared directly.

Renal Function Urine Sediment and Proteinuria

Practical 08 / Report and data interpretation

Aim

Interpret a kidney panel and integrate urinalysis, sediment and protein measurements.

Principle

Kidney function assessment combines trends, urine findings and clinical timing. A single creatinine and eGFR do not determine chronicity.

Materials and Requirements

- Fictional renal panels and urine reports
- Prepared images of cells, casts and crystals
- Case chronology

Procedure

1. Compare current and prior creatinine, eGFR, electrolytes and urine output. Identify whether the trend is acute or persistent.
2. Align creatinine, eGFR, electrolytes and urine output by date and compare baseline. Note whether concurrent acute changes limit interpretation of the reported eGFR.
3. Review dipstick and microscopy results together and distinguish cells, casts and crystals in prepared images.

Continue with step 4 on the next page.

Procedure Continued

Renal Function Urine Sediment and Proteinuria

4. On the teaching sediment identify epithelial cells and red or white cells first. Examine the outline and contents of the cast examples and record crystal shape at the supplied magnification.
5. Compare the sediment findings with its dipstick, collection method and any notes about contamination. Mark uncertainty if the field or sample quality is limited.
6. Interpret albumin-to-creatinine ratio using its reported units and consider contamination and repeat testing.
7. Read the albumin and creatinine units before assigning a category and compare with repeat values under similar conditions. Note factors such as acute illness that could affect a single result.
8. Summarise the likely pattern and identify any potassium, low urine output or other red flag that needs rapid review.
9. Present the time course, most important urine finding, supporting blood results and outstanding question. In the high-risk scenario give a direct handover with time and action required.

Precautions

- Use supplied sediment images and validated reports.
- Report potentially critical abnormalities using the facility escalation pathway.

Observations and Interpretation

Renal Function Urine Sediment and Proteinuria

Observations and Record

Item	What to record	What it tells you
Renal trend	Creatinine and reported eGFR over time	Allows assessment of trajectory
Urine findings	Cells, casts and protein or albumin	Helps localise the process
Safety	Potassium and urine output context	Guides pace of escalation

Worked Example

A fictional rise in creatinine from 0.9 to 1.8 mg/dL over a short interval calls for review of timing, volume status, medicines and obstruction. An isolated reported eGFR does not establish chronic kidney disease.

Result and Interpretation

State the renal and urine pattern, evidence of chronicity if present and the question that needs follow-up.

Viva Questions and Answers

What does a red cell cast support?

A renal origin of haematuria and possible glomerular involvement when appropriately identified.

Why check the urine ACR units?

mg/g and mg/mmol differ and are used with different category thresholds.

CSF and Meningitis Report Interpretation

Practical 09 / Report and data interpretation

Aim

Interpret cell counts, glucose, protein and microbiology in an anonymised cerebrospinal fluid report.

Principle

CSF patterns overlap. Cell type and number, paired glucose, protein, appearance and microbiology contribute to a time-sensitive assessment.

Materials and Requirements

- Simulated CSF reports with paired serum glucose
- Clinical timelines and supplied microscopy or molecular results

Procedure

1. Confirm the collection time, clinical context, prior antimicrobial exposure and paired serum glucose.
2. Verify the specimen source and paired blood glucose time. Review prior treatment and the clinical onset and confirm whether opening pressure and tube sequence were recorded.
3. Review white cells and differential, red cells, protein and the CSF-to-blood glucose relation.
4. Tabulate appearance, counts, predominant cell type, protein and both glucose values. Calculate the ratio with matched units and flag red-cell contamination or incomplete sampling information.
5. Compare bacterial, viral and other teaching patterns and check available direct detection results.
6. Compare neutrophil and lymphocyte patterns with paired glucose and protein. Relate the microscopy or nucleic acid result to timing and discuss how prior therapy can affect the yield.
7. Consider trauma during collection, immunosuppression or early disease when findings conflict. State what additional case information or report would help reconcile the pattern.
8. State the concerning findings and the need for urgent supervising-team review of suspected meningitis.
9. Present the concerning findings, likely pattern, uncertainty and immediate communication. Document the receiving team and time of handover in the simulated record.

Precautions

- Use reports only for this station.
- A reassuring single CSF parameter cannot safely exclude a serious infection.

Observations and Interpretation

CSF and Meningitis Report Interpretation

Observations and Record

Item	What to record	What it tells you
Cell profile	Total count and predominant cells	Supports a pattern without determining cause alone
Chemistry	Protein and glucose relative to blood	Adds discriminating information
Aetiology	Direct results, timing and treatment history	Explains confirmation limits

Worked Example

CSF glucose 30 mg/dL and paired blood glucose 100 mg/dL give a ratio of 0.30. In a febrile patient with neutrophilic pleocytosis, this is concerning and requires urgent evaluation.

Result and Interpretation

Communicate the CSF pattern, relevant uncertainties and the need for immediate clinical review when indicated.

Viva Questions and Answers

Why pair CSF glucose with blood glucose?

Absolute CSF glucose depends in part on systemic glucose.

Can a negative stain exclude infection?

Sensitivity, specimen timing and prior treatment affect detection.

Leukaemia Coagulation and Marrow Records

Practical 10 / Spotter and viva

Aim

Recognise abnormal white cell patterns and interpret platelet and coagulation data.

Principle

Abnormal morphology suggests hypotheses that require lineage and other confirmation. Platelet number, PT and aPTT examine different aspects of haemostasis.

Materials and Requirements

- Prepared films and marrow micrographs
- Fictional CBC, clotting and lineage summaries

Procedure

1. Compare normal mature white cells with atypical or blast-like cells in supplied fields.
2. Scan the prepared film at low power, then select well-spread fields. Describe atypical cells by size, chromatin, nucleoli and cytoplasm and compare with representative mature cells.
3. Record number and morphology and examine whether other lineages are affected in the CBC.
4. Verify which atypical forms recur across representative fields and record their locations. Review the current and previous Hb, white count and platelet count to identify affected lineages.
5. Compare PT and aPTT with the laboratory intervals and review medicines, specimen fill and platelet count.
6. Match the coagulation results with sample timing, tube fill, medicine history and clinical context. Identify which result may be unreliable and which bleeding finding requires prompt escalation.
7. Suggest a relevant confirmatory test and distinguish urgent notification from definitive diagnosis.
8. Review the supplied marrow morphology and the role of confirmation by flow cytometry or related testing. Separate what the available findings show from the classification still pending.
9. Prepare an urgent-result message with critical values, specimen quality and concern. State which result or test the responsible team must follow.

Precautions

- Do not assign leukaemia lineage from cell size alone.
- Review sample quality before interpreting an unexpectedly prolonged clotting time.

Observations and Interpretation

Leukaemia Coagulation and Marrow Records

Observations and Record

Item	What to record	What it tells you
Peripheral blood	Cell morphology and proportions	Flags a possible marrow or reactive process
Marrow or lineage report	Documented pattern and confirmation method	Supports classification
Coagulation	PT, aPTT and platelets	Defines the pattern requiring investigation

Worked Example

A fictional CBC flags possible blasts alongside anaemia and thrombocytopenia. Confirm the smear promptly and refer for the appropriate haematology assessment.

Result and Interpretation

Give a descriptive impression and a reasoned next test or escalation.

Viva Questions and Answers

What is a blast flag?

An analyser alert that prompts review and confirmation.

What do PT and aPTT reflect?

Different portions of the measured coagulation system under their assay conditions.

Systemic Pathology Organ and Tumour Spotters

Practical 11 / Spotter and viva

Aim

Use organ-specific gross or microscopic findings to compare common benign, inflammatory and malignant processes.

Principle

Tissue invasion and altered architecture are central clues in tumour assessment. Organ-specific patterns and supporting tests guide classification.

Materials and Requirements

- De-identified gastrointestinal, liver, lung, cardiovascular, renal and reproductive teaching specimens or images
- Prepared breast, thyroid, bone and skin slides or digital fields

Procedure

1. Identify the organ and specimen type and describe lesion distribution, consistency or visible invasion as supplied.
2. Orient each specimen and note whether it is an intact organ, slice, excision or biopsy. Mark side where known, locate the lesion and document dimensions from the supplied scale.
3. Compare organised architecture with disorganisation and atypia on the image. State the limits of the view.

Continue with step 4 on the next page.

Procedure Continued

Systemic Pathology Organ and Tumour Spotters

4. Compare expected architecture with what is visible at the lesion edge and centre. Record circumscription, necrosis or invasion when the view supports it, then verify at higher power.
5. Rotate through organ pairs such as cirrhotic liver and steatosis, lung consolidation and tumour, and benign breast lesion and invasive carcinoma.
6. At each paired station choose one gross and one microscopic discriminator. Examples include nodular fibrosis versus fatty change in liver or orderly glands versus infiltrating atypical glands in breast.
7. For the assigned tumour image identify the relationship to surrounding tissue and any supplied margin or node information. Keep observations separate from staging that requires a full record.
8. For each spotter record two discriminators, one relevant clinical feature and a confirmation or staging question.
9. Give a concise response per tag with organ, lesion pattern, evidence and remaining diagnostic information. Check that specimen labels and sketches are traceable to the correct case.

Precautions

- Treat teaching images as selected views.
- Use anonymised examples and avoid concluding stage from a spot image.

Observations and Interpretation

Systemic Pathology Organ and Tumour Spotters

Observations and Record

Item	What to record	What it tells you
Organ and lesion	Site and two visible features	Supports a defensible identification
Differential	Closest mimic and discriminating clue	Explains the reasoning
Further assessment	Sampling, stain or clinical staging question	States what morphology alone cannot settle

Worked Example

On a supplied thyroid image, true papillary architecture plus characteristic nuclear findings supports consideration of papillary carcinoma. Review the whole section and the report before classifying.

Result and Interpretation

Build a labelled spotter record with observations and purpose-specific confirmation.

Viva Questions and Answers

Why assess invasion?

It helps distinguish relevant benign, in situ and invasive processes.

What helps differentiate a mimic?

A specific visible feature supported by the specimen and clinical context.

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