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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.

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