3.5 Abdomen

Name: _____ Class: _____ Date: _____ **Total: 23 marks**

KEY WORDS referred pain

Objective

Use the nine-region grid and the three gut territories to localise visceral pain.

1 Key knowledge and worked examples

■ Grid and supply

Nine regions; coeliac (foregut), superior mesenteric (midgut), inferior mesenteric (hindgut).

■ Worked example: the referral map

Foregut T5–9 epigastric; midgut T10–12 umbilical; hindgut L1–3 hypogastric ✓. Appendicitis: umbilical first, right iliac second (parietal join) ✓.

2 Practice

2.1 Which artery supplies the transverse colon to its distal third? [3]

2.2 To which band does gallbladder pain refer? [3]

2.3 Above the pectinate line, is bleeding typically painful? [3]

3 Exam-style questions

3.1 A patient has sudden epigastric pain radiating to the right shoulder tip.

Place the organ by territory and band. Explain the shoulder referral (phrenic C4 shared segment). Predict what imaging would show and why the pain localises poorly at first. [7]

3.2 A patient has painless fresh bleeding per rectum.

Use the pectinate line to argue the source is likely above it. State the artery of the hindgut and its major branch at risk. Explain why painlessness itself narrows the differential. [7]

Solutions

2.1

- Superior mesenteric (midgut ends at the distal transverse colon).

2.2

- Foregut band (T5–9) – epigastric.

2.3

- No: visceral supply above the line carries no sharp pain.

3.1

- Gallbladder: foregut/coeliac territory → epigastric band.
- The shoulder tip is C4 via the phrenic nerve: the gallbladder's inflamed peritoneal surface shares the segment.
- Early visceral pain is midline and dull (shared segment); imaging (ultrasound) localises the organ the band only bands.

3.2

- Painless fresh bleeding implies visceral supply: above the pectinate line.
- Inferior mesenteric artery; its superior rectal branch.
- Below the line, somatic innervation would make bleeding painful – painlessness itself argues the source is visceral.