

3.3 Lower limb

Name: _____ Class: _____ Date: _____

Total: 23 marks

KEY WORDS compartment syndrome

Objective

Map leg compartments and nerves, and read ischaemia from pulses and pain.

1 Key knowledge and worked examples

■ Four compartments, four nerves

Anterior (dorsiflex), lateral (evert), superficial posterior (plantarflex), deep posterior (invert + toes). Common peroneal wraps the fibular neck.

■ Worked example: the two signatures

Foot drop with preserved inversion = peroneal at the fibular neck ✓. Pain on passive stretch + paraesthesia = compartment syndrome (pressure > ~30 mmHg) ✓.

2 Practice

2.1 Which nerve serves eversion, and in which compartment? [3]

2.2 Name the four palpable lower-limb pulses. [3]

2.3 Why does compartment pain worsen on PASSIVE stretch? [3]

3 Exam-style questions

3.1 A runner has a tense, painful calf after a fracture; toes paraesthetic; pain on passive toe extension.

Explain the mechanism (closed fascial sleeve, swelling, capillary shutdown > 30 mmHg). State what is NOT yet lost and why (distal pulses often preserved). State the treatment principle. [7]

3.2 A patient cannot dorsiflex or evert after sitting cross-legged; inversion and reflexes are intact.

Localise the lesion (common peroneal at the fibular neck). Explain the sensory loss pattern (dorsum of foot). Explain why inversion being intact excludes a deep posterior/L5 lesion. [7]

Solutions

2.1

- Superficial peroneal, lateral compartment.

2.2

- Femoral, popliteal, posterior tibial, dorsalis pedis ✓.

2.3

- Stretching the ischaemic muscle tensions it further inside an already pressurised sleeve.

3.1

- Fracture haematoma + swelling in an unyielding sleeve; pressure above capillary pressure (~30 mmHg) stops perfusion.
- Distal pulses persist until late – the obstruction is capillary, not large-artery.
- Treatment: open the sleeve (fasciotomy) – pressure relief, not observation.

3.2

- Common peroneal nerve at the fibular neck (compressed by position).
- Sensory loss on the dorsum of the foot (superficial peroneal territory).
- Inversion is tibial/deep posterior: intact inversion places the lesion outside that compartment – precisely at the subcutaneous fibular neck.