ORTHOVERSE · HIGH-YIELD CARD

Compartment Syndrome and Fasciotomy

Interactive simulator
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HIGH-YIELD

- The leg has four compartments: anterior, lateral, superficial posterior, deep posterior; all four must be released.
- Delta P = diastolic pressure minus compartment pressure; Rockwood adult threshold is delta P at or below 30 mm Hg.
- Edinburgh protocol: fasciotomy when delta P is at or below 30 mm Hg for more than 2 hours with rising pressure.
- Pain out of proportion and pain on passive stretch are early signs; paralysis and absent pulse are late.
- A palpable distal pulse does not exclude ACS; absent pulse and pallor are late signs.
- The deep posterior compartment requires deliberate entry via the medial incision; the lateral incision does not reach it.
- The superficial peroneal nerve exits the fascia approximately 10 cm above the lateral malleolus.
- In children, normal resting pressure is higher; use the three A's and do not apply the adult threshold directly.
- Fasciotomy wounds are never closed primarily; second-look at approximately 48 hours.
- If the clinical picture is clear, Campbell states pressure measurement is not required before fasciotomy.

PITFALLS

- A single lateral leg incision leaves both posterior compartments unreleased; always use the two-incision technique.
- Primary closure of fasciotomy wounds is forbidden; the skin becomes a constricting band and pressure may remain high.
- Applying the adult 30 mm Hg threshold directly to a child ignores their higher normal resting pressures.

NUMBERS TO KNOW

Delta P fasciotomy threshold, Rockwood adults	30 mm Hg
Duration of low delta P before Edinburgh fasciotomy	2 hours
Second-look after fasciotomy	48 hours
Lateral incision distance anterior to fibula	2 cm
Medial incision distance posterior to tibial border	1 to 2 cm
Superficial peroneal nerve fascia exit above lateral malleolus	10 cm
Normal resting compartment pressure in children	13.3 to 16.6 mm Hg
Normal resting compartment pressure in adults	5.2 to 9.7 mm Hg



Figure. Pressure mode: compare the compartment pressure with the diastolic pressure, case by case.

FURTHER READING

Rockwood and Green's Fractures in Adults, 10th edition: ch 17 (compartment syndrome).
Rockwood and Wilkins' Fractures in Children: ch 6 (compartment syndrome in children).
Campbell's Operative Orthopaedics, 15th edition (2026): ch 79 (compartment syndrome and fasciotomy).

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