

PERFUSION PRESSURE AS A DETERMINANT OF THE NEED OF FASCIOTOMY IN ACUTE COMPARTMENT SYNDROME OF THE EXTREMITIES

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ABSTRACT

Background

Compartment syndrome is a clinical state of increased tissue pressure within a closed space resulting in compromised local circulation and subsequent dysfunction of the enclosed myoneural elements. Delay in diagnosis and treatment for several hours may result in permanent disability. Intracompartmental pressure monitoring would identify the patients who would benefit by early fasciotomy and prevent grave complications.

Material and Methods

144 limbs were studied (72 affected and 72 control). Intracompartmental pressure and perfusion pressure were measured by indigenous saline infusion device.

Results

Perfusion pressure <13 mm Hg in patients of electric burn arriving as early as 6 hrs required amputation. Patients with multiple fractures of the lower limb who arrived within 8-20 hours with perfusion pressure <22 mm Hg were managed by early fasciotomy but later landed in amputation. Patients having perfusion pressure >50 mm Hg with no neural deficit were conserved. When the compartment pressures rose beyond 45 mm Hg and perfusion pressure fell below 25 mm Hg with partial or no neural deficit, fasciotomy was indicated and performed in 51 patients. All patients improved clinically and the decrease in compartment pressure was 45% to 60%.

Conclusions

Intracompartment pressure monitoring serves as a guideline to decide between conservative management and fasciotomy. Perfusion pressure <25mm Hg is a definite indication for fasciotomy. Ignorance may lead to amputations, paresthesias and later on Volkmann's Ischaemic Contracture.

KEYWORDS: Compartment Syndrome, Fasciotomy, Intracompartmental Pressure Measurement, Perfusion Pressure