

Isokinetic functional outcomes of open versus percutaneous repair following Achilles tendon tears

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Introduction/Purpose: Rupture of the Achilles Tendon (AT) is frequent in young recreational athletes. Conservative management, open surgery and percutaneous/minimally invasive approaches are all advocated, and conflicting data are available. This study compared functional and anthropometric outcomes of patients who underwent open or percutaneous repair.

Methods: A retrospective comparative study, in which 38 patients underwent open and percutaneous techniques to manage AT ruptures. For functional assessment, the calf circumference of both injured and uninjured legs was evaluated. Isokinetic testing included total plantar flexion work, peak plantar flexion torque, total dorsiflexion work peak and dorsiflexion torque. The Achilles Tendon Rupture Score (ATRS) and the America Orthopedic Foot and Ankle Score (AOFAS) were evaluated at a final minimum follow-up of 12 months.

Results: No major complications were observed. The average time to return to sport was 9 months. AOFAS and ATRS values did not differ statistically between groups. Isokinetic variables and circumference were similar in the operated and non-operated limb in both groups, and did not differ either when comparing open and percutaneous repair.

Conclusion: Open and percutaneous repair of a torn Achilles tendon produced similar functional outcomes.



Fig1 (left) – Percutaneous approach

Fig2 (right) – Open approach

Table 3 – Isokinetic analysis

Isokinetic Variables	Surgical Technique				p-value
	Open		Percutaneous		
	Operated leg	Non-Operated leg	Operated leg	Non-Operated leg	
<i>Peak torque</i>					
Concentric	179.4 (48.4)	188.9 (46.1)	126.4 (21.0)	127.9 (26.3)	0.654
Eccentric	202.0 (53.8)	211.8 (48.4)	135.9 (19.4)	138.8 (23.4)	0.365
<i>Work</i>					
Concentric	45.1 (16.6)	47.8 (12.0)	146.4 (31.7)	165.8 (43.6)	0.789
Eccentric	58.0 (19.1)	60.9 (13.9)	171.9 (42.7)	176.3 (57.9)	0.323