

# Clinical Outcomes and Complications of Peroneus Brevis Allograft Reconstruction

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## INTRODUCTION:

Peroneus brevis (PB) tendon tears are an important cause of lateral ankle pain. When PB tears are irreparable, allograft reconstruction maintains native anatomy and avoids the morbidity of tenodesis and tendon transfer procedures. Current data on allograft PB reconstruction is limited to a few small case series. We sought to retrospectively determine the clinical outcomes and complications in a large series of patients who underwent PB tendon reconstruction with semitendinosus allograft.

## METHODS:

After institutional review board approval, patients with PB tears who underwent tendon reconstruction with semitendinosus allograft at a single tertiary center between March 2010 and January 2020 were retrospectively reviewed. Hospital records, preoperative and postoperative visual analog pain scale (VAS), and complications were evaluated. A phone survey was conducted to assess postoperative patient-reported outcomes (PROMIS scores).

## RESULTS:

Sixty-eight patients (69 feet) including 24 men and 44 women were identified. Mean age at surgery was 51.7 years (range, 23.0-74.0) and mean follow up was 20.4 months (range,3.4-71.4). There was a significant improvement in VAS pain scale postoperatively ( $4.0\pm 2.7$  vs.  $2.4\pm 2.8$ ,  $p=0.0012$ ). Most common complication was sural neuralgia in 18 (26.1%) feet, with only 2 (3%) requiring surgical intervention as most were transient or minimally symptomatic. The allograft failed in 7 (10.1%) feet. Thirty (43%) feet had a prior PB surgery, and no correlation was found between prior surgeries and complications ( $p=0.4$ ). Of the 29 (42.6%) patients available for the phone survey, 25 (86.2%) were employed prior to surgery, of whom 23 (92.0%) were able to return to work. Twenty-five (86.2%) of the 29 did not use an assistive device. Average T-score for physical function and pain interference was  $49.5\pm 9.7$  and  $50.8\pm 9.7$ , respectively. Twenty (69.0%) of the 29 patients reported being satisfied with the procedure.

## DISCUSSION AND CONCLUSION:

This study demonstrated a relatively high rate of postoperative transient sural neuralgia after PB reconstruction with semitendinosus allograft, but the rate of reoperation for this complication was low. Among the subgroup of patients who completed a phone survey, there was a high rate of return to work, low rate of assistive device use, and good patient satisfaction after the procedure. These findings suggest that allograft reconstruction of the PB tendon represents a clinically effective treatment option for irreparable PB tendon tears.

TABLE 1: Complications

Complication	# of feet (%)
Sural Nerve Symptoms	18 (26.1%)
Allograft Failure	7 (10.1%)
Total Infections	5 (7.2%)
• Deep infections	• 2 (2.9%)
• Superficial infections	• 3 (4.3%)
5th metatarsal fractures	3 (4.3%)
Plantar fasciitis	3 (4.3%)
Painful suture anchors	2 (2.9%)
Peroneal Tendinitis/tear	2 (2.9%)
Peroneal Tendinosis	1 (1.4%)