Anatomic Study of Injury Risk to the Posterior Femoral Cutaneous Nerve During Proximal Hamstring Repair

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Disclosures

- We have no disclosures relevant to this study
  - James Dreese MD participates in the speakers bureau for Zimmer Biomet Sports Medicine
Background

• Proximal hamstring injuries are being diagnosed with increasing frequency
• Surgical repair is recommended for complete avulsion of the common hamstring insertion at the ischial tuberosity
• The posterior femoral cutaneous nerve (PFCN) is at risk for injury during surgical exposure of the proximal hamstring tendon
Background

• The PFCN lies lateral to the ischial tuberosity and proximal hamstring tendon, making it visible during the surgical approach required for proximal hamstring repair or ischial tuberosity avulsions.

• The perineal branch of the PFCN often crosses in the surgical field.
Purpose

• To determine the variations in the location of the PFCN and its branches relative to the surgical approach to the proximal hamstring origin.
Methods

• Fifteen fresh-frozen hip-to-knee human cadaveric specimens were dissected in prone position.
• Skin and subcutaneous tissues were reflected to expose the gluteal and hamstring musculature.
• The distances between the ischial tuberosity, lateral border of the hamstring, PFCN, perineal branch of the PFCN, and descending femoral branch of the PFCN were measured with digital calipers.
• Measurements were repeated 3 times and averaged.
Results

• In these specimens, the PFCN lay directly on top of the sciatic nerve and was easily visible during the surgical approach to the proximal hamstring.

• The PFCN was 30.5 ± 11.4 mm lateral to the central tip of the ischial tuberosity.

• The average longitudinal distance to where the descending cutaneous branch began to cross the hamstrings was 83.3 ± 21.3 mm.

• The PFCN was nearest to the inferior border of the gluteus maximus 45.7 ± 13.6 mm lateral to the ischial tuberosity.
Results (cont.)

• The average longitudinal distance from the tip of the ischial tuberosity to where the perineal branch began to cross over the hamstrings was 24.1 ± 15.0 mm.

• Four specimens (26%) had two distinct perineal cutaneous nerves.
1st Perineal branch of PFCN
2nd Perineal branch of PFCN
Descending femoral cutaneous nerve
Conclusions

• The PFCN was in close proximity to the surgical approach for repair of the proximal hamstring. The perineal branch often crossed the surgical field transversely.

• There is a great degree of anatomic variability in the exact location of these cutaneous nerves.