

Case Report

Involvement of the Lateral Femoral Cutaneous Nerve as Source of Persistent Pain After Total Hip Arthroplasty

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Abstract: This report describes a situation in which the lateral femoral cutaneous (LFC) nerve was the source of incisional pain in a patient after a total hip arthroplasty. The painful scar was denervated by an approach that resected just the posterior branch of the LFC nerve. This was done through an incision near the anterior superior iliac crest, avoiding any potential exposure of the implant. One of the 3 patients reported here had a coexisting meralgia paresthetica that was treated by the same operative approach. The orthopedic surgeon should include the LFC nerve as an origin of persistent pain after total hip arthroplasty. **Key words:** hip arthroplasty, pain, lateral femoral cutaneous nerve.

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Total hip arthroplasty (THA) has proven extremely successful at relieving pain originating from the hip joint [1-5]. Persistent pain after THA is most commonly due to malalignment, loosening, or infection [6-8]. Evaluation of the patient after these sources of pain have been eliminated is difficult. A neural origin for this persistent pain should be entertained.

Experience with treatment of persistent pain after total knee arthroplasty has demonstrated that the origin of this pain can be due to neuromas of either

the joint afferents or the cutaneous nerves [9-12]. For example, the infrapatellar branch of the saphenous nerve crosses the vertical incision used for the total knee arthroplasty. Concerning the hip, pain resulting from a damaged lateral femoral cutaneous (LFC) meralgia paresthetica is known to result after harvesting iliac crest bone for grafting [13,14]. Other sources of pain from variations in the anatomy of the LFC nerve have been described as well [15]. This article describes our experience with the LFC nerve as it relates to the incision used for THA. We have found that pain referred to the incision after THA can be due to neuroma formation within the scar, compression of the LFC nerve at the anterior superior iliac crest, or both. Three patients with this problem are presented, each of whom had their pain successfully treated by resection of the posterior branch of the LFC nerve.

Case Report 1

A 76-year-old man had a 6-year history of pain at the site of his THA incision. He had his first THA in 1993. That prosthesis required revision 1 year later,

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which was complicated by a 3-year history of infection. The THA was converted to a Girdlestone procedure. In 1996, a revision THA was performed, which gave good anatomic correction of the deformity. Unfortunately, in the immediate post-operative period, pain referred to the incision became apparent. The trigger spot in the incision was relieved by local anesthetic or anesthetic plus steroid injections given every 4 to 6 months for several years. When these injections became less effective (after more than 15 injections over 6 years), neuropathic and narcotic medications were required. Radiographic study continued to demonstrate the prosthesis to be well positioned and without evidence of loosening or infection. Despite this, the patient attempted to continue with his work, which required much ambulation, as the patient is the

director of a tennis center. He slept either supine or lying upon his contralateral hip for the past 5 years. Finally, activities of daily living became intolerable because of the pain, and consultation with a peripheral nerve surgeon was initiated. There was no significant medical history (no history of diabetes) and, in particular, no history of neuropathy. Findings from electromyographic and nerve conduction studies were negative. There was a 1-cm limb length discrepancy on this side.

The physical examination showed a well-healed scar in the lateral upper thigh with a discrete trigger spot (Fig. 1A). The LFC nerve was tender when palpated just medial to the anterior superior iliac crest on the surgical (left) side, but not on the contralateral side. There was a slight decrease in perception of moving touch over the anterior and

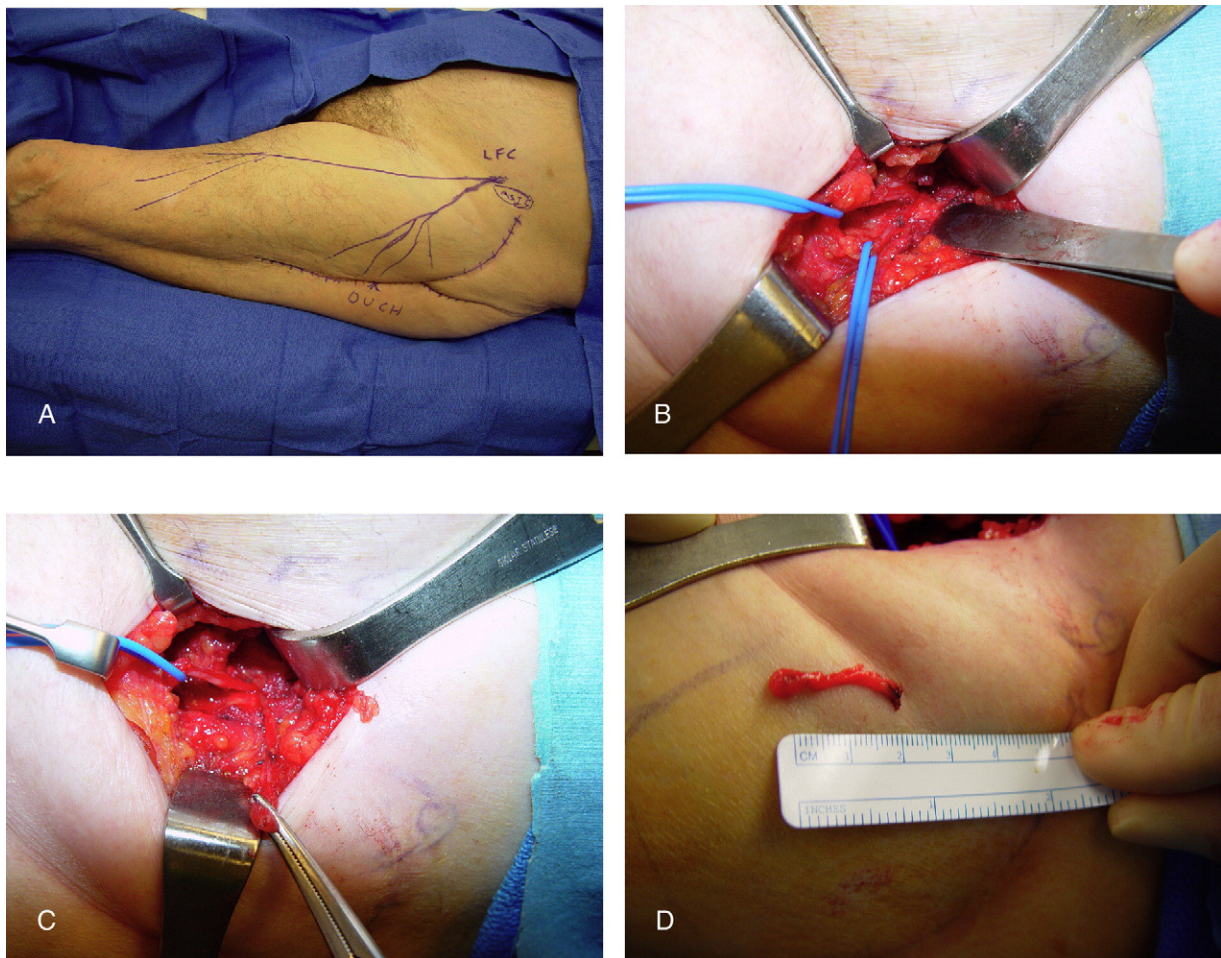


Fig. 1. (A) In the first patient, the physical examination showed a well-healed scar in the lateral upper thigh with a discrete trigger spot. The traditional anatomic course of the LFC nerve is outlined, with an anterior and a posterior branch. (B) Intraoperative view. Vessel loop is around the anterior and around the posterior branches of the LFC nerve as it exists from its location within the inguinal ligament just anterior to the anterior superior iliac spine. This bone is located beneath the handle of the forceps. (C) The clamp holds the proximal end of the divided posterior branch of the LFC nerve. The anterior branch is preserved, and a neurolysis proximally into the retroperitoneum must be done. (D) The excised portion of the posterior branch is demonstrated. Note the cauterized proximal end, where the nerve has been cauterized to prevent bleeding.

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