Suprainguinal ligament approach for surgical treatment of meralgia paresthetica

Technical note


Division of Neurosurgery, The University of Texas Medical Branch, Galveston, Texas, and Department of Neurosurgery, University of the Orange Free State, Bloemfontein, Republic of South Africa

For relief of meralgia paresthetica the authors have developed a suprainguinal ligament approach for decompression of the lateral femoral cutaneous nerve of the thigh. This proximal approach offers an alternative to the standard infraligament methods. Its chief advantage is that identification of the nerve trunk is easy and accurate. This avoids the tedious dissection involved in looking for small distal branches with their variable location. Lysis is easily performed, and angulation of the nerve in the iliac fossa is avoided. With this method, poor operative results can usually be eliminated.

Key Words: • meralgia paresthetica • suprainguinal ligament approach • lateral femoral cutaneous nerve • nerve decompression • surgical approach

Meralgia paresthetica is a clinical syndrome resulting from entrapment of the lateral femoral cutaneous nerve of the thigh in the inguinal region. In the early stages, conservative management is indicated, with attempts being made to eliminate obvious causes. Weight reduction, injection of local anesthetic agents together with steroids, or removal of tight binders and corsets can provide lasting relief. Surgical therapy should only be resorted to in patients with persistent or very severe pain, and only a small minority of patients will come to surgery.

The aim of surgery is to decompress the trapped nerve in the inguinal region. Keegan and Holyoke have presented a detailed anatomical study of this region, and they were the first to suggest sectioning the inguinal ligament and medial transposition of the nerve for treatment of meralgia paresthetica. Since then, various authors have described methods to perform this apparently easy procedure. Although operative treatment is expected to give relief of symptoms in almost all cases, failures occur frequently. Difficulty in identifying the nerve at operation and in performing adequate decompression might partially be blamed for this.

We describe an alternative to the standard infraligament decompression methods: the suprainguinal ligament approach.

Anatomical Description

A diagram showing the location of the lateral femoral cutaneous nerve of the thigh is shown in Fig. 1. This is a purely sensory nerve that arises from the second and third lumbar nerves of the lumbar plexus. It then emerges from the lateral border of the psoas major muscle and runs obliquely forward and inferiorly across the iliacus muscle beneath the iliac fascia. The nerve trunk lies behind the fascia iliaca, but it is incorporated within the fascia immediately proximal to its point of exit into the thigh. In this location it is still the main nerve trunk and it is thick and easily identifiable.

The nerve usually enters the thigh beneath the inguinal ligament immediately medial to the anterosuperior iliac spine, even though this important operative relationship is extremely variable. The nerve may pass beneath the ligament or between the two roots of the attachment of the ligament to the iliac bone, in effect piercing through the ligament. Although the nerve is usually located just medial to the superior iliac spine, it may be found more medial, and an anatomical variant of the nerve branching from the femoral nerve may be found even further medial than normal. On its entry into the thigh, it may run superficial to or pierce the sartorius muscle for a variable course. The nerve is deep...
Decompression of lateral femoral cutaneous nerve

We believe that there are certain disadvantages in these techniques. Identification of the nerve in this infrainguinal ligament region can be very difficult and sometimes impossible. This can lead to a superficial dissection, very time-consuming for an inexperienced operator. As we stated, the reason for this is that the lateral cutaneous nerve follows a variable course as it pierces the inguinal ligament and runs into the thigh. If the nerve is in the muscle substance, it can be exceptionally difficult to identify. Furthermore, only branches of the nerve are found in this area, not the actual trunk. We believe that misidentification of this nerve is the main reason for operative failure in this condition. Once the nerve is identified, it might be difficult to perform a complete lysis, since it is difficult to dissect proximal to the inguinal ligament in the area where the iliacus fascia can invest the nerve before it pierces the inguinal ligament. If a transposition is to be performed, an inadequate proximal lysis of the nerve can result in angulation, with poor results.

Suprainguinal Ligament Approach

Because the key to successful surgical decompression lies in accurate identification of the nerve, we devised an approach from proximal to the obstruction: the suprainguinal ligament approach. By this technique it is possible to identify the nerve trunk in the iliac fossa. The surgery is performed under general anesthesia. A 2-cm long horizontal skin incision is made parallel and 1 cm superior to the inguinal ligament just medial to the anterosuperior iliac spine (Fig. 1). This is followed by a small incision first dividing the external oblique aponeuroses then splitting the muscle fibers of the internal oblique and transversus abdominis muscles. Only a very small exposure is necessary to identify the posterior abdominal wall, well inferior and lateral to the peritoneum. Use of the operating microscope is of considerable benefit in distinguishing the nerve and performing the lysis. The nerve trunk beneath the iliac fascia is then identified with ease, as it is constant in its proximal course to the entrapment point. The nerve trunk is also much larger at this point than are the more distal branches in the thigh. With the nerve under microscopic vision, lysis can be performed by tracing the nerve distally and generously dividing all fascial bands that may actually or potentially constrict the nerve. This dissection can be carried into the thigh until there is sufficient room around the nerve and constriction can no longer be seen or felt. The nerve is held down by the iliacus fascia just proximal to the ligament, and therefore it is important to decompress this area until no angulation in the iliac fossa is present.

Transposition of the nerve to a more medial position can be performed with ease after the nerve is freed in the iliac fossa as well as in the thigh, and angulation will not be a problem. It is more important to divide all constricting fibrous bands than to purposely alter the course of the nerve. However, after decompression,

J. Neurosurg. / Volume 70 / March, 1989
the nerve will automatically attain a more medial course. The nerve should not be divided. With this approach, lysis can be performed very adequately and will prevent the side effects of a neurectomy. The muscle fibers of the internal oblique and transversus abdominis muscles are approximated, and the rest of the wound is closed in the usual fashion. There have been no complications with this approach. A potential problem, namely the development of a hernia through the potential defect, has not occurred in long-term follow-up studies of our patients.

References


Manuscript received June 6, 1988.
Address reprint requests to: E. Francois Aldrich, M.D., Division of Neurosurgery E-17, The University of Texas Medical Branch, Galveston, Texas 77550.