

Pain

Neurolysis for meralgia paresthetica: an operative series of 45 cases

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Abstract

Background: Failure of symptom relief after neurolysis for meralgia paresthetica (MP) is reported frequently, yet systematic outcome analysis is limited in the modern literature. The present operative series of 45 cases aims to address this issue.

Methods: From 1996 to 2000, all patients who had neurolysis for MP by our senior author were enrolled in the study. Nerve entrapment was confirmed preoperatively by electrophysiological studies or a positive response to local anesthetic and steroid injection. Attention to the anatomical variability of the lateral femoral cutaneous nerve was made during nerve exploration. Decompression of the nerve was performed at the level of the iliac fascia, the inguinal ligament, and the fascia of the thigh distally. The outcome of surgery was assessed 6 weeks after the procedure followed by 3 monthly intervals if symptoms persisted. Telephone interviews were conducted to assess long-term results.

Results: Forty-five decompressive procedures were performed in 42 patients over the 5-year period. The average duration of symptoms was 31 (2.5–180) months. All patients were followed for an average of 4.1 years. Complete and partial symptom improvements were noted in 33 (73%) and 9 (20%) cases, respectively. No recurrence was reported. Analysis of clinical variables demonstrated that the duration of symptoms preoperatively did not affect the rate of complete symptom relief, but obese patients (body mass index > 30) was 6 times more likely to have (odds ratio 6.16, $P = 0.04$) incomplete relief after surgery at long-term follow-up.

Conclusion: High success rate was recorded in our series of 45 cases. Prolonged duration of symptoms did not preclude favorable outcome but obesity had a negative association with good outcome.

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Keywords:

Lateral femoral cutaneous nerve; Entrapment neuropathy; Meralgia paresthetica; Surgical decompression; Treatment outcome

1. Introduction

The lateral femoral cutaneous nerve (LFCN) is a sensory branch of the lumbar plexus supplying the anterolateral aspect of the thigh. Entrapment at its pelvic exit has been known to cause a characteristic syndrome of dysesthesia over its sensory territory since 1878 [11]. The term meralgia paresthetica (MP) was first coined by Roth [9] in 1895. However, despite these early accounts of MP, the volume of literature on the surgical management and outcome of this condition has been small (Table 1) [5,7,8,10]. Symptomatic relief expected of neurolysis has not been consistently

reported in the literature. No systematic outcome analysis has been conducted. The present review, therefore, aims to address these issues. We report on the long-term results of neurolysis for MP from our collected series of 45 cases. The efficacy of neurolysis and the factors important to successful outcome are the focus of the discussion.

2. Materials and methods

Over a 5-year period between 1996 and 2000, all patients who underwent neurolysis by our senior author for MP were included in this study. These patients were referred by neurologists or general practitioners with distressing symptoms notwithstanding conservative management for some weeks to months. These nonoperative measures included advice on weight loss, avoidance of local physical constrict-

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Table 1
Summary of literature search on operative series of neurolysis for MP

First author	Year	n	Mean age (y)	Diagnostic criteria	Symptom duration (mo)	Follow-up (y)	Symptom improvement	%
MacNicol [7]	1990	25	45	C	23 (4-60)	5.5 (2-15)	15	60.0
Edelson [5]	1994	21	9.8	LA	24 (2-84)	3.17 (2.08-5)	19	90.5
Nahabedian [8]	1995	23	37	E	32 (6-108)	0.75 (2.75)	22	95.7
van Eerten [10]	1995	10	40	C, E	49 (6-360)	3.83 (0.83-12.9)	6	60.0

C indicates clinical; E, electrophysiological; and LA, local anesthetics.

ing factors, usage of nonsteroidal antiinflammatory drugs, and injection of steroid and local anesthetics. The duration of symptoms and relevant physical findings were documented for each individual patient preoperatively. The diagnosis was affirmed by either electrophysiological studies or positive response to injection of steroid and local anesthetics.

At operation, under general anesthesia, a transverse incision was made 1 cm below the anterior superior iliac spine (ASIS) along the skin crease. Dissection was carried out down to fascia lata to expose the nerve under loupe magnification. Particular attention was paid to its anatomical variability. Complete lysis was achieved by freeing the nerve at 3 levels: (1) the tendinous arc from the iliac fascia, (2) the inguinal ligament anteriorly and a sling of fascia posteriorly, and (3) distally the deep fascia of the thigh along each division (Fig. 1). With hemostasis obtained, the wound was closed in 2 layers. A subcuticular absorbable suture was used for skin closure. The patient was discharged home on the same day.

The outcome of the surgery was assessed in follow-up visits in 6 weeks after the procedure. Results were graded according to a 3-tiered ranking: complete, partial, or no relief as adopted in other series [5,7,8,10]. Complete relief was deemed achieved when the chief complaints had completely resolved. Partial relief was defined as when part of the symptoms had resolved or were resolving while some symptoms persisted. No relief was scored when there was no change or worsening in the symptoms. For those patients not achieving complete relief, successive follow-up visits would be arranged in 3-month intervals for further assessment. For those who did not have ongoing follow-up, telephone interviews were conducted to assess long-term results. Univariate and multivariate analyses were performed to evaluate the potential significance of age, sex, duration of symptoms preoperatively, follow-up time, and presence of obesity (body mass index [BMI] > 30) in predicting the outcome of surgery. Commercial software (SPSS version 10) was used for statistical analysis. A *P* value of less than 0.05 was considered significant.

3. Results

Forty-five decompressive procedures (29 left, 16 right, *P* > 0.05) were performed in 42 patients (21 males, 21 females) from 1996 to 2000. The age of the patients ranged from 20 to 79 years with a mean of 53 ± 13 (standard deviation) years. The duration of symptoms averaged $31 \pm$

46 months (range 2.5 months to 18 years). Eighteen (40%) patients were noted to have a BMI of greater than 30. Twenty-seven cases (60%) had confirmative somatosensory-evoked potential testing and 3 (6.7%) had nerve conduction studies. Eight cases (18%) had previously temporary symptom relief from infiltration of local anesthetics and steroid. Seven cases (16%) presented with strong clinical findings, and further diagnostic investigations were deemed unnecessary.

Intraoperatively, the LFCNs were all found to emerge medially from the ASIS with constriction at the inguinal ligament. However, in one case, the LFCN was located more than 5 cm inferomedial to the ASIS (Fig. 2). Other

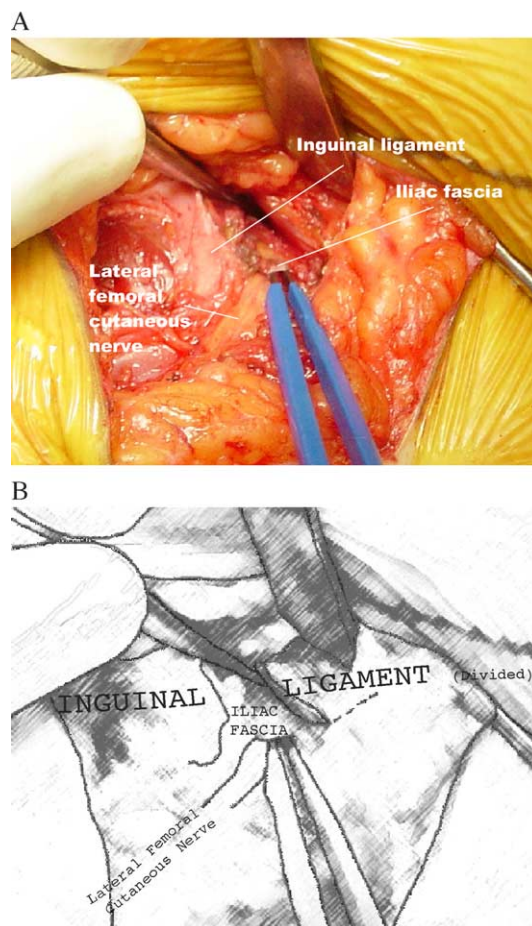


Fig. 1. A, Decompression of the LFCN at 3 levels: the iliac fascia, the inguinal ligament, and the deep fascia of the thigh (not shown). B, Schematic drawing illustrating the LFCN emerging from the substance of iliac fascia after division of the inguinal ligament.

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