

### Introduction

The lateral femoral cutaneous nerve (LFCN) has a variable course, from medial to the anterior superior iliac spine (ASIS) upto 5 cm lateral to the ASIS. Moreover the nerve runs in its own fascial sheath which forms a tunnel that circumferentially surround the nerve. This renders its surgical localization difficult and sometimes very time-consuming. We have adopted preoperative ultrasound (US) wire localization of the nerve in order to facilitate surgical localization.

### Methods

The patients are taken first to US where a high resolution US is performed to localize the ASIS and the LFCN. Then, the patient is prepped and draped, and an interventional radiologist proceeds with the wire localization. The patient is injected with a local anesthetic. A wire is advanced with a needle lateral then deep to the nerve below the inguinal ligament. As the needle is withdrawn, the wire hooks up around the nerve. The patient is then taken to the operating room, he undergoes general anesthesia, and the skin including the wire is reprepped and draped. A skin incision is then made medial to the wire, and the wire is followed until the deep fascia. At that point the wire is seen hooking around the nerve. The deep fascia is opened and the nerve is circumferentially exposed. The wire is removed, and the nerve is decompressed proximally until the inguinal ligament is opened.

### Wire shape after deployment



Figure 1: showing the wire shape after being deployed

### Needle advancement under US guidance



Figure 2: showing the needle used to advance the wire under US guidance.

### Results

Our skin to nerve time ranged from 11 -19 minutes, with an average of about 15 minutes. In one case the localization was wrong, where a cutaneous branch of the femoral nerve was localized. This was easily recognized intraoperatively, we then undermined the incision laterally to find the LFCN and decompress it.

### US

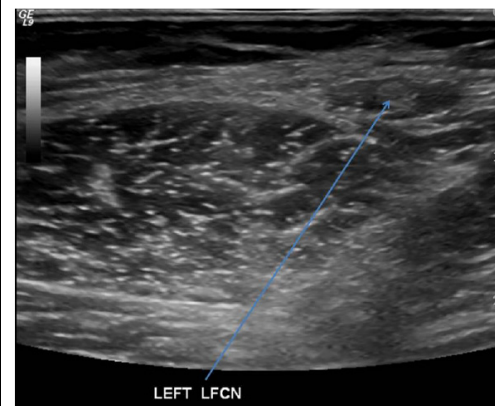
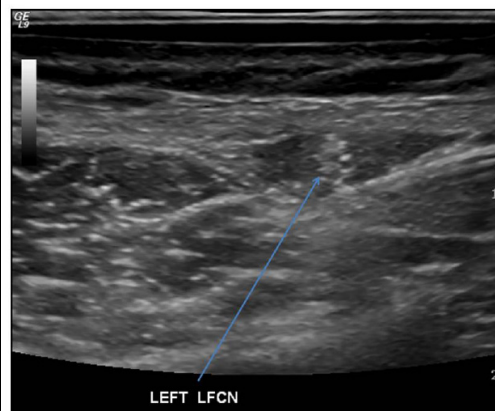


Figure 3: High resolution Ultrasound showing the left lateral femoral cutaneous nerve (LFCN) inbetween the 2 layers of fascia, superficial to the sartorius muscle

### US-2



Figur. 4: Magnified view of figure 3

### Conclusions

High resolution ultrasound is a safe and effective method of preoperative localization of the LFCN.

Operating time could be reduced by using preoperative localization.

### LFCN exposed with the wire around it

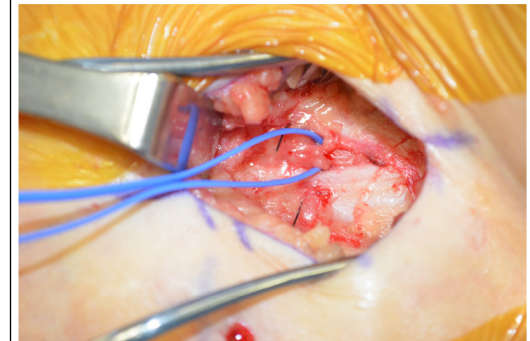


Figure 4: After opening the deep fascia, the LFCN is exposed and the wire is observed around it. The decompression can now be started and the wire removed.

### Learning Objectives

1. Becoming more familiar with the anatomy of the lateral femoral cutaneous nerve
2. High resolution ultrasound is a safe and effective method of preoperative localization of the LFCN
3. Operating time could be reduced by using preoperative localization

### References

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2. Mulvaney SW. Ultrasound-guided percutaneous neuroplasty of the lateral femoral cutaneous nerve for the treatment of meralgia paresthetica: a case report and description of a new ultrasound-guided technique. *Curr Sports Med Rep*. 2011 Mar-Apr;10(2):99-104. PMID:21623291.
3. Üzel M, Akkin SM, Tanyeli E, Koebke J. Relationships of the lateral femoral cutaneous nerve to bony landmarks. *Clin Orthop Relat Res*. 2011 Sep;469(9):2605-11. Epub 2011 Mar 22.