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Case Report

Interventional and multimodal pain rehabilitation in a child with meralgia paresthetica☆

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Abstract Meralgia paresthetica is a chronic pain syndrome that is extremely rare in the pediatric population. It is manifested by hypesthesia or pain in the distribution of the lateral femoral cutaneous nerve (LFCN) and is typically caused by entrapment as the nerve passes deep to the inguinal ligament. This sensory mononeuropathy is rare in children and diagnosis is typically delayed, often leading to prolonged functional impairment and unnecessary medical testing. A 9-year-old girl presented to the pain clinic with a 6-week history of right anterolateral thigh pain first noticed after a nontraumatic cheerleading practice. Comprehensive laboratory and radiographic evaluation by multiple prior specialists revealed no clear nociceptive source of pain. History and examination were consistent with a diagnosis of idiopathic, compressive meralgia paresthetica. Conservative management including physical therapy was followed for 2 weeks with only mild improvement noted. To facilitate physical therapy, an ultrasound-guided LFCN block was performed which confirmed the diagnosis by providing complete analgesia. The patient reported overall 25% improvement from multimodal therapy at another 2 weeks. A second LFCN block was performed with complete resolution of symptoms and restoration of function. The patient remains pain-free and has returned to walking, running, and competitive sports. The primary goal of pediatric chronic pain management, regardless of pain etiology, is early restoration of function to avoid prolonged absence from school, sports, or other productive activities and limit the psychological burden of chronic disease.

1. Introduction

Meralgia paresthetica (MP) is a peripheral mononeuropathy typically caused by entrapment of the lateral femoral cutaneous nerve (LFCN). MP in children is typically idiopathic, but cases have been reported after posterior spinal fusion, sports injuries, and obesity [1]. This condition is very uncommon in the pediatric population and may therefore be unrecognized and improperly treated in children. We describe the case of a child with idiopathic MP that was successfully treated with an interventional and multimodal pain

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rehabilitation regimen that has not previous been described in cases of pediatric MP.

2. Case description

A 9-year-old, 34-kg healthy girl presented to our pediatric pain clinic with a 6-week history of right anterolateral thigh pain. She first noticed the pain after cheerleading practice. This was a seemingly normal practice with no inciting fall or injury. The next morning, she reported pain in her right proximal thigh that radiated distally but stopped sharply at her knee. This progressively worsened over several weeks. Evaluation by a pediatrician, sports medicine physician, and an orthopedic surgeon revealed no infection, fracture, soft tissue disease, or other nociceptive pain generator. Laboratory tests and radiologic studies, including thigh magnetic resonance imaging, were largely nondiagnostic. A brief antibiotic course was prescribed for a mildly increased erythrocyte sedimentation rate.

Specifically, pain was constant, 8/10 in severity, burning in character, with no associated motor dysfunction. Pain was located at the proximal anterolateral thigh and radiated distally, stopping roughly 4 cm above her knee (Fig. 1). There was no radiation medially, posteriorly, above the inguinal ligament, or below the knee. Pain was occasionally worse with activity, and there were no significant alleviating factors. Light touch or an outdoor breeze reproduced pain. Physical examination was significant only for exquisite static mechanical allodynia, to the point of guarding, in the affected area without trophic sudomotor or vasomotor changes. External anatomy, motor function, and reflexes were normal. A diagnosis of idiopathic meralgia paresthetica was given. Gabapentin 100 mg twice daily was started and increased to 200 mg twice daily over 2 weeks. Meloxicam elixir 4.5 mg daily was also prescribed. The child was enrolled in a physical therapy program that focused on strengthening techniques such as bridging, hip extending, and quadriceps stretching. Improvements were modest at 2 weeks, and an ultrasound-guided LFCN block was scheduled to restore function in this active child.

The child was given moderate sedation by an independent anesthesia team. A broadband linear array ultrasound probe was placed at the medial border of the right anterior superior iliac spine and rotated in a parallel position to the inguinal ligament. Probe was then swept inferiorly. The fascia lata (FL) and fascia iliaca (FI) were noted easily with confirmation of femoral nerve and vessels medially. A very small caliber LFCN was noted in plane between FL and FI adjacent to a minor vascular bundle representing branches of the superficial circumflex iliac artery system. Color Doppler was used to fully differentiate vascular structures from the target nerve. A 22 G echogenic needle was placed in-plane and advanced lateral to medial, and the fascial plane between FL and FI was pierced (Figs. 2 and 3). A solution of 7.5 mL of 0.5% ropivacaine + 1:200,000 epinephrine + 3 mg betamethasone was injected easily with positive circumferential spread noted on dynamic image. An appropriate loss of sensation in the right LFCN distribution with complete resolution of presenting pain was noted in the recovery area. The patient was maintained on her medication regimen, and daily physical therapy was resumed.

At her 1-month follow-up visit, the patient was progressing well in PT, and pain reduction to 4/10 was seen. A second LFCN block was performed in the identical manner as above.

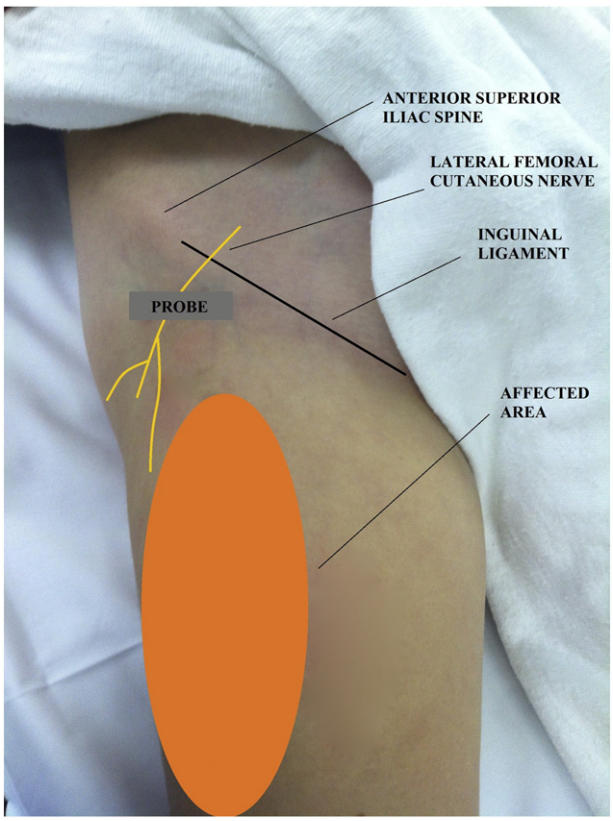

Fig. 1 A photograph showing the patients right anterior thigh and the distribution of pain.

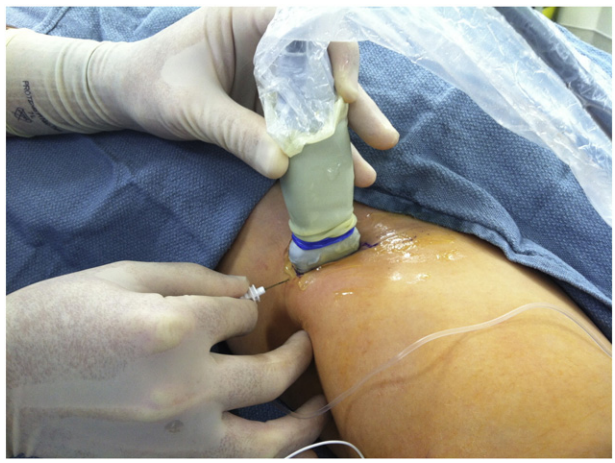

Fig. 2 Orientation of the ultrasound probe and insertion site of needle.