

Surgical Treatment of Painful Nerve Injury after Knee Arthroscopy.

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Abstract

Background; Pain at the surgical site is an important concern, especially in locations of main joints which may resolve important limitations of movement.

Materials and Methods; We present the case of painful dysesthesia after knee surgery for traumatic meniscal rupture in a young lady. She presented with painful dysesthesia, limitation of knee flexion, and severe pain in light touch and pressure on the mid-patellar area of the left knee.

Tinel's sign at the site of surgical scar, dysesthetic area (abnormal sensation) corresponded with the medial reticular nerve at surgical exploration under a microscope.

Results; Microsurgical exploration of the three nerves of medial subcutaneous nerves revealed the branch stuck in the scar. The distal end was internalized subfascial inside the muscle fibers of the medial vastus of quadriceps femoris muscle according to Dellon. The other two were released from adhesions and found to be in anatomical continuity were left in place. Immediate resolution of dysesthesia was referred by the patient and the amplitude of motion was complete at one-month postoperative control. She remains pain-free 4 months from surgery and the area of dysesthesia remains anesthetic at the center.

Conclusions; Surgical identification and rerouting of the distal end of sensitive nerves is an efficient treatment after peripheral nerve injury.

Keywords; painful dysesthesia, Tinel's sign, surgical treatment

Introduction

Increase in number of surgical procedures despite minimal invasive tendency in the surgical approaches has known a constant increase in nerve injuries. This fact is reflected in thicker chapters on this subject in newly written literature.

Iatrogenic lesion of the sensitive nerves in the area of surgery is highly probable in presence of painful dysesthesia immediately after the procedure. Such painful experience alters patient's quality of life with limitations of daily activities, sleep disturbance and medico-legal issues.

Case presentation

We present the successful treatment of a post arthroscopic knee surgery in a 23 y.o. lady who sustained a car accident one year before resulting in meniscal rupture. After a year of unsuccessful conservative treatment for meniscal rupture she underwent arthroscopic surgery for partial meniscal removal with good result in relieving knee pain at stance and walking, but there were dysesthesia and burning pins and needles sensation at light touch and percussion over the surgical scar. *Figure 1*

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Nerve blocks were performed with local anesthetic and cortisone with complete temporary resolution of painful dysesthesia leaving the young patient with anesthesia of the same skin area [2].

Under general anesthesia medial nerves of the subcutaneous distribution were explored and found (cranial to caudal: 1. medial retinacular nerve MRN; 2. medial cutaneous femoral nerve – branch of saphenous nerve; 3. Infrapatellar nerve – saphenous nerve). *Figure 2.*

The MRN was found severed with its stump stuck in the surgical scar. The other two nerves were in continuity after neurolysis and were left in place, MRN was cut near by the scar. *Figure 3*

Together with two smaller fascicles (that were sacrificed distally after infiltration of lidocaine) the stumps were rerouted under the fascia of vastus medialis muscle. The fascial opening was sutured with the nerve loupe not strangulated and creating a wide angle at the entry point into the fascia.

The day after surgery the patient referred no dysesthesia with the light touch and the area of anesthesia interested. The amplitude of motion was complete at one-month postoperative control. *Figure 4*

She remains pain free 10 months from surgery and the area of dysesthesia remains anesthetic at the center. *Figure 5.*

Discussion

This method is first explained by Dellon [1]. Pain at surgical site particularly over the anatomical trajectory of a sensitive nerve should make us consider the possible lesion of that nerve. More so if there is painful dysesthesia in the distal territory of that nerve with a Tinel's sign positive.

We have dealt with similar case in our series of surgical treatment for pain harboring severed sensitive nerves that were not prone to end to end suture or not worth transplanting, since they are usually part of the nerves we harvest for grafting (superficial radial nerve, superficial peroneal nerve, saphenous nerve, digital nerve).

In the present case the patient came to our attention with limited movement of knee flexion and difficulties in wearing pants or any kind of tissue that touched the dysesthetic area of the knee ending in burning pain that stopped her from walking.

We usually noticed that in such cases early diagnosis and treatment leads in fast and more complete relief from painful dysesthesia.

Prevention is the best way by avoiding to place the skin incision over nerve trajectories, which is presumably done from every surgeon of any specialty. But one should consider anatomical variants of these trajectories and we strongly advice to inspect the subcutaneous area before scalpel cut to reach the knee capsule, in this case. Before skin closure a careful inspection of the soft tissue structures

is advisable preferably with surgical loops in order to identify inadvertent involvement of sensitive subcutaneous nerves in the wound. This would allow an in-site repair with end-to-end micro suture whenever both stumps are identified. If the proximal stump is identified alone than the same described technique should be implemented to avoid the pain and more so the experience of movement limitation and chronic painful dysesthesia if left untreated.

Exploration of all three nerves of medial knee innervation and dissection under the microscope permitted to identify the severed nerve stuck in the scar along with the other nerves that needed not more than neurolysis since they were found in anatomical continuity. Only magnification permits thorough exploration of such tiny nerves. Alcohol neurolysis has been described in the literature for chronic arthrosis pain of uncut nerves of the joint, but it should not be indicated as stabilized treatment for injured nerves [3].

Conclusions

Painful dysesthesia after surgery over the skin incision should be surgically explored by nerve surgery experts in order to treat the involved sensitive nerves.

Surgical exploration is solicited as soon as the pain is unresponsive to conservative treatment before it becomes a burden for the patient.

Dellon's technique is proven to be resolute in case only the proximal stump is identified stuck in the scar.

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Figure 1- Surgical scar after arthroscopic surgery

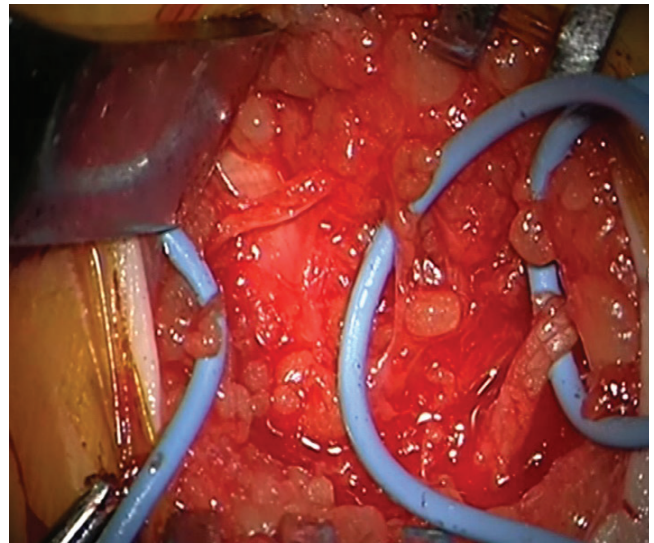


Figure 2 Exploration of regional nervous System

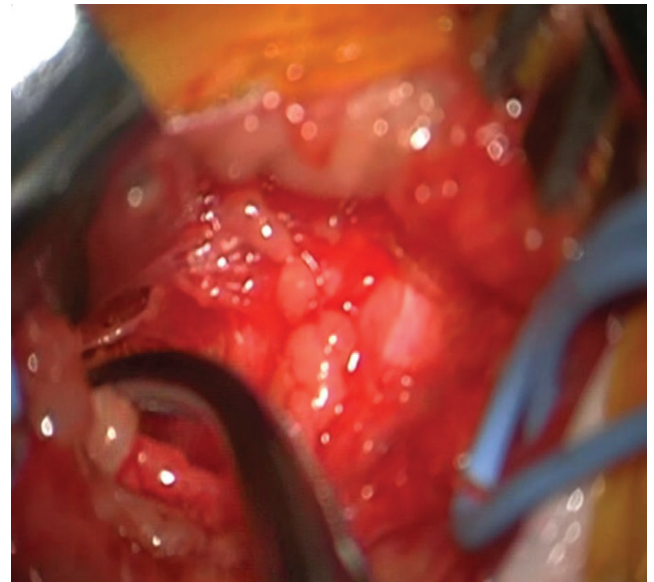
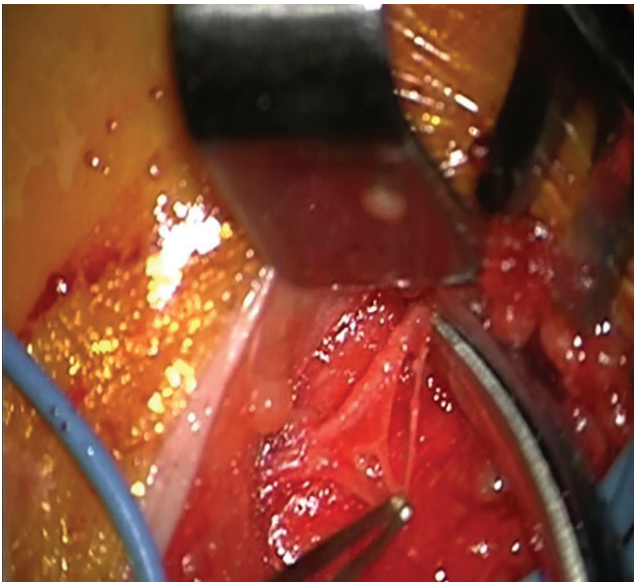


Figure 3, 4 Part of Surgical exploration

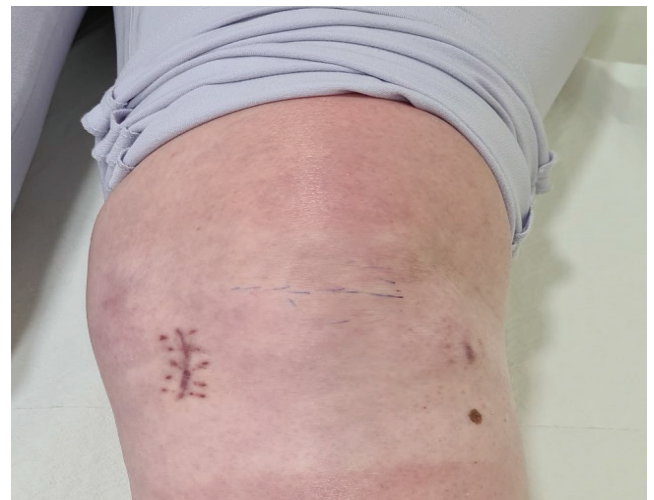


Figure 5, 6 She remains pain free 10 months from surgery