

## Efficacy of IPACK block in pain management of knee osteoarthritis. First data from a retrospective study

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### Abstract

#### Introduction

The most indicated treatment to manage patients with knee osteoarthritis (KOA) is a multimodal approach embracing educational, physical, and pharmacological interventions. Pharmacological approaches consist of non-steroidal anti-inflammatory drugs via oral or topic administration, steroids, and local anesthetic injected on site imaging guided.

Recently, the interspace between the popliteal artery and the capsule of posterior knee (IPACK) block has been demonstrated to provide effective post operative analgesia after knee surgery, alone or in combination with abductor canal block for a muscle strength sparing strategy. The aim of this report is to show the analgesic efficacy of IPACK block in seven patients with KOA and functional limitation. The IPACK block is a muscle strength-sparing technique that consists of an infiltration of local anesthetic into the interspace between the popliteal artery and the posterior capsule of the knee meant to be used as an alternative analgesic supplement to the femoral or adductor canal blocks to cover the posterior knee pain. The simplicity and safety are the advantages of this technique. We present a successful IPACK block used for analgesic purpose in seven patient presenting knee osteoarthritis pain with functional limitation and reduced quality of life.

#### Methods

Data from the first seven patients consecutively admitted to our Academic Hospital of Avezzano (Italy), were retrospectively analyzed. Patients aged 60-85 years-old underwent to unilateral ultrasound (US) guided IPACK block as a pain support relief before knee surgery.

A high-frequency US linear probe (10-18 MHz) was placed in the popliteal fossa, with patient in prone position by respecting aseptic conditions. The probe was moved from cranial to caudal direction until the two heads of the gastrocnemius muscle were visualized. After the identification of the popliteal artery and sciatic nerve, a 20-gauge, 100 mm needle was inserted from lateral to medial direction, via the in-plane approach. Herein, 20 mL of 0.25% Levobupivacaine combined with triamcinolone were injected. At the end of procedure knee mobility and pain (using VAS) were assessed at 30 minutes, 2, 12, 24, and 48 hours, and after 1 week during ambulatory visits in our Pain Unit. Acetaminophen 1000 mg three times a day per os was administered in case of pain > 4 on VAS.

#### Results

The patient did not require analgesic drugs for a week after block. Dermatome sensation due to tibial and common peroneal nerve was guaranteed. No weakness or motor loss involved. Decreased of posterior knee pain was reported, with significant improvement with the quality of life.

#### Discussion and Conclusion

IPACK block is a simple and safe alternative analgesic technique to provide a superior quality analgesia in the popliteal area of the knee and in this report, we would like to introduce a new field of application for this block such as bridge to surgery to improve the patient's quality of life in the meantime.

The use of the IPACK block with antalgic purpose, ensured a good analgesia and no complications. We significantly improve the quality of life of those patients, and this gave us the reward that we need to keep going with this project.

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