Nevertheless, I believe that regional anesthesia has a role that is not limited only to analgesia, opioid sparing effect or to direct and indirect anti-tumor properties, but it may impact patient's outcome and survival in many other ways in the context of ''enhanced recovery after surgery'', namely contributing to perioperative hemodynamic stability by modifying general anesthesia management, with optimized analgesia without LA epidural administration.

Informed consent from the patient

Patient gave consent for the anesthetic management and interventions. The technique is not a novel intervention. In fact, it is only described an ultrasound image of a patient, as an example. The patient gave written consent for the publication of the image, with anonymized case details.

According to the national law, and to the hospital rules no approval is needed by the hospital ethics committee for the publication of case reports, as long as patient has given authorization for the publication of his anonymized clinical details.

Conflicts of interest

The author declares no conflicts of interest.

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Methylenetetrahydrofolate Reductase deficiency and anesthesia: importance of a detailed preoperative evaluation

Deficiência de metiltetrahidrofolato redutase e anestesia: importância de uma avaliação pré-operatória detalhada

Dear Editor,

Methylenetetrahydrofolate Reductase is an important enzyme responsible for homocysteine and folate metabolism.[1] The deficiency of this enzyme is described as an autosomal recessive disorder that results in increased homocysteine levels in the body well known as Methylenetetrahydrofolate Reductase (MTHFR) deficiency.[1] These patients are basically classified in homozygous, less commonly seen, and heterozygous, the most prevalent variation.[1] MTHFR gene mutation have limited capacity to use the essential nutrient folate which sets off a chain reaction that would culminate in premature atherosclerosis and consequent ischemic insults.[1] The complete mechanism is not completely understood, even though hyperhomocysteinemia presents hypercoagulable properties and has been associated with endothelial dysfunction. The detection of the mutation is usually observed after an unexplained thrombotic event in a previously ''healthy patient''. After the diagnosis, family members should be oriented to be genetically screened for this mutation.

If undetected, the patient is at high risk of complications during and after exposure to Nitrous Oxide (N_2O). The utilization of nitrous oxide is frequent in the operating room as a second gas and commonly used by dentists in their clinics. Methionine synthase is the enzyme responsible for the reaction that transforms homocysteine to methionine.[2] Nitrous oxide inhibits this enzyme resulting in elevated levels of homocysteine.[2] The accumulation of homocysteine, well known as hyperhomocysteinemia, increases the risk of venous and arterial thrombosis up to six times compared to the general population.[2] A detailed preoperative evaluation and investigation of past medical history, including family history, is the most valuable tool to diagnose a rare disease such MTHFR deficiency. An unexpected ischemic insult without diagnosis is greatly suspicious and the utilization of nitrous oxide should be avoided, especially because the prevalence of MTHFR deficiency is not known but certainly underestimated. The common use of N_2O should be reviewed due to the risk of undiagnosed population with MTHFR deficiency and possible devastated consequence of its utilization. Patients should be followed up closely in the postoperative period regardless of whether or not N_2O was used due to the susceptibility of the patients for ischemic

insults. Volatile agents such as sevoflurane and Total Intravenous Anesthesia (TIVA) can be safely used in patients with an MTHFR deficiency.[2]

We are not advocating the elimination of the nitrous oxide from the operating room. Neither suggesting that all patients should be genetically screened for MTHFR deficiency. This letter's intention is only to remind every single anesthesia provider, including myself, that the most important preoperative assessment will never be an imaging test neither an expansive laboratory result, but a great conversation with the patient aiming for a detailed and always important past medical history.

Conflicts of interest

The authors declare no conflicts of interest.

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Three blocks including Pericapsular Nerve Block (PENG) for a femoral shaft fracture pain

Três bloqueios, incluindo o bloqueio pericapsular (*Pericapsular Nerve Block* — PENG), para dor em fratura da diáfise femoral

Dear Editor,

Most of the femoral fracture patients suffer from extreme pain in preoperative period and are exposed to high doses of opiates which have severe adverse effects. Femoral shaft fractures count 2%–6% of all femoral fractures.[1] PENG (Pericapsular Nerve Group) block is a new published block technique (2018) and mostly used for hip surgery in the literature.[2] The main neural targets of this block are the articular branches of obturator, accessory obturator and femoral nerves. Herein, we report the successful use of three blocks in the preoperative period for a femoral shaft fracture pain in a post-polio sequelae patient.

A 51 year-old patient (182 cm, 80 kg) with a fracture extending towards to the head of the femur (Fig. 1) had a complain of severe pain (NRS: 10/10). Therefore, a PENG block was performed using 20 mL of 0.25% bupivakain. Local anesthetic was injected into the musculofascial plane between the psoas muscle anteriorly and the pubic ramus posteriorly (Fig. 2). The pain score was decreased to NRS: 7/10 approximately 3 min later than the block performed. Later, fascia iliaca compartment block was performed using 30 mL of 0.25% bupivakain. The pain score was NRS: 5/10 in 5th min after the second block. And the last performed block was femoral block using 20 mL of 0.25% bupivakain. The pain score was assessed only 4/10 just after the third block and in operation theatre 1 h later. We preferred general anesthesia for the patient because the polio is a relative contraindication for spinal anesthesia.[3] Patient had general anesthesia with 100 mg tramadol for postoperative analgesia at the end of the operation. In the 24 h follow-up, there was no pain score more than 3 while sitting and lying position. The patient received only 1 g paracetamol two times and did not need any opiate use.

In the literature, PENG block is mostly recommended for hip fracture pain, however it is also a very effective method for the femoral shaft fracture pain control.

Figure 1 The fracture extending towards to the head of the femur.