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Editorial

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Is it Possible to Perform Spinal Anesthesia for Surgery with the Patient Standing?

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Editorial

In a recent Editorial the different puncture positions and all the local anesthetic solutions for spinal anesthesia was shown [1]. Spinal puncture can be performed in four positions: sitting, lateral decubitus, ventral decubitus, and on some orthopedic tables where there is a space between the buttocks and the chest, in the supine position [1]. Most schools of anesthesiology prefer to teach the neuraxial (epidural or subarachnoid) approach with puncture in the sitting position, neglecting the other various positions. There is another school that begins teaching the approach with puncture in the lateral decubitus position and later teaches puncture in the sitting position and in the prone position [1]. This school is familiar with the indication for hemi-spinal anesthesia, unilateral and posterior [2].

The injection of a non-isobaric local anesthetic (hyperbaric or hypobaric) should induce unilateral spinal anesthesia in patients in a lateral decubitus position, already posterior spinal anesthesia only be obtained with hypobaric solutions injected into the jackknife position [2]. Unilateral spinal anesthesia increases the patient's level of satisfaction by having only one lower limb blocked and the other without any degree of blockage. Likewise, when performing posterior spinal anesthesia in the position to undergo surgery, the level of satisfaction increases because there is no degree of motor blockage in either lower limb or if proprioception in the hallux is assessed, it will be noticed that it is present. In another article we showed that spinal anesthesia is much more than the injection of local anesthetic hyperbaric in the sitting position [3].

Magnetic resonance imaging (MRI) is one of the best ways to evaluate the spine, hips and buttocks. MRI is one of the best ways to evaluate the spine, hips and buttocks. In 2003, the first device for evaluating MRI with the patient standing was launched [4]. Low-dose EOS® imaging is an innovative slot-scanning radiograph system providing valuable information in patient functional positions standing, sitting and even squatting positions [5]. Gluteal prosthesis surgery is performed in a standing position. The technique uses simplified limits of dissection with reference to the fixed anatomical structures as bones of the gluteal region to construct the implant pocket [6].

The ventral position for puncture for spinal anesthesia for anorectal surgeries with hypobaric local anesthetics are ignored by most anesthesiologists and allows the patient without any degree of motor block and the presence of proprioception in the hallux [7]. Likewise, the implantation of gluteal prosthesis, gluteal filling, liposuction or correction of gluteal asymmetries and irregularities of the gluteal region under spinal anesthesia can perfectly replace the use of epidural anesthesia, which insufficiently blocks the sacral roots.

Each type of surgery and each type of patient deserves spinal anesthesia according to the needs of the procedure. If anesthesiologists have not been trained to perform the puncture in the prone position and are familiar with the lateral puncture, it is perfectly possible to inject the hypobaric solution into this position and immediately place the patient in the prone position. This has occurred with some patients who were operated on using this technique, in a preliminary study that we are beginning, with success for the surgeon and satisfaction for the patient.

The hypobaric solution of any local anesthetic has not yet been released by any laboratory worldwide, probably explained by the little use of the technique. Thus, the hypobaric solution can be obtained by diluting the isobaric local anesthetics solution with water. Any local anesthetic presented as an isobaric solution can be transformed with the addition of water into a hypobaric solution.

Proprioception is important not only for maintaining body balance, but also for the vestibular system (set of organs in the inner ear) and the visual system, which are essential for staying upright [8]. Proprioception plays an important role in maintaining dynamic joint stability, the influence of injury on proprioceptive acuity, and neuromuscular control [9]. Motor blockade of the lower limbs

during spinal anesthesia prevents the patient from standing or even walking. In a retrospective study of the sensitive spinal anesthesia technique with hypobaric solution and ventral decubitus puncture for anorectal surgeries in jackknife position, it showed rapid onset of action, sensory level below T12, without any degree of motor block and proprioception in 75% of patients, no cardiocirculatory changes and no neurological complications [10]. Examination of proprioception after posterior spinal anesthesia in the hallux of both feet allows confirmation that the patient will be able to stand and even walk and be operated in the standing position (Figure 1).

Figure 1: Assessment of Proprioception in the Hallux

Gluteal filling, correction of gluteal asymmetries and irregularities, and cellulite release under neuraxial anesthesia have required a change in position during the procedure for better surgical results. Spinal anesthesia, when properly understood and applied, is very versatile and can be used for this purpose. The best approach for posterior spinal anesthesia is to perform the subarachnoid block in the prone position (Figure 2). However, anesthesiologists unfamiliar with this position may perform the puncture in the lateral decubitus position and place the patient in the prone position immediately after injection of the hypobaric solution.

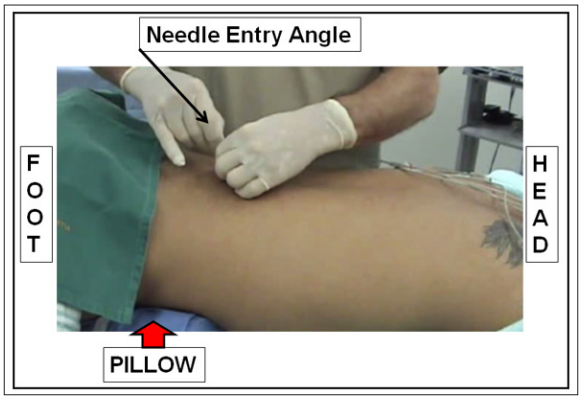

Figure 2: Prone Position and Needle Entry

After installation of posterior spinal anesthesia, the patient will be infiltrated to perform correction of gluteal asymmetries and irregularities after placing the patient standing up and supporting herself on the surgical table (Figure 3). Possibly, with the acquisition of a surgical table that allows the patient to be placed standing up, it will be the future to not need to place the patient next to the surgical table (Figure 4).

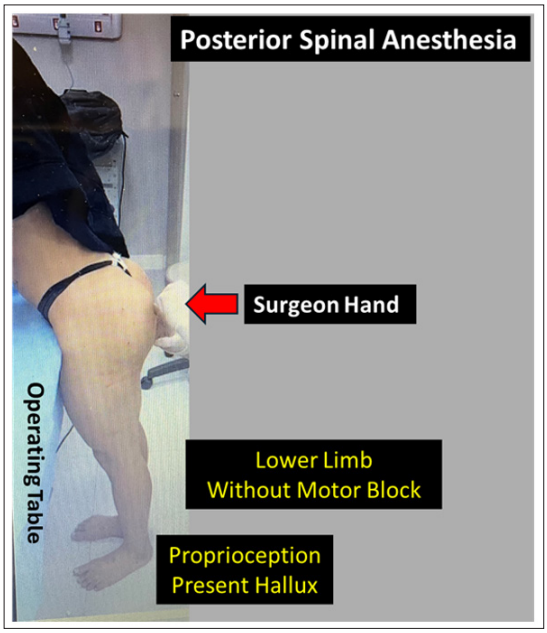

Figure 3: Patient Standing on the Surgical Table Receiving Gluteal Filling

Figure 4: Surgical Table with the Possibility of the Patient Standing

The evolution of anesthetic procedures has required more and more sophisticated anesthetic techniques. The anesthesiologist has two clients: the patient first and the surgeon who will perform the procedure. To provide satisfaction to the patient, it is necessary to know what the surgeon needs to perform his procedure. We cannot have the same spinal technique for different surgical procedures. Therefore, it is essential that anesthesia schools start to practice the different positions for puncturing the subarachnoid space, demonstrating all its benefits, safety and comfort, with patient satisfaction.

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