The Maclean's technique: A novel approach to spinal anesthesia

The Editor,

Subarachnoid blocks are routinely performed by anesthesiologists in various surgical and endoscopic procedures. Correct identification and puncture of the subarachnoid space determines the success and failure of the technique.[1] Multiple attempts and difficult access to the subarachnoid spaces is a frequent problem that may lead to numerous complications like postdural puncture headache, transient neurological symptoms.[2] However, trauma to neural structures or a spinal hematoma can cause permanent neurological deficits.[3]

Conventional positioning for spinal or epidural anesthesia is when the patient lies laterally on the table with maximum flexion of the spine, hips, and the knees (fetal position) this is when the patient has a wide open interspinous space. But this kind of positioning is impractical in every single case,

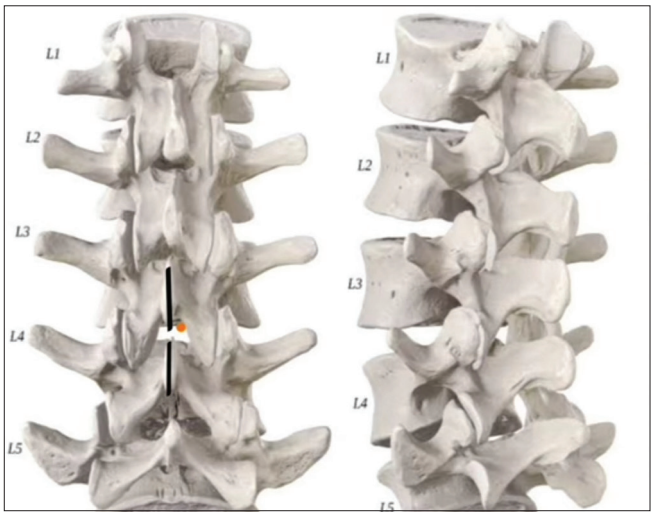

Figure 1: Solid black line- spinous process, gap- interspinous space, orange dot- Maclean's point

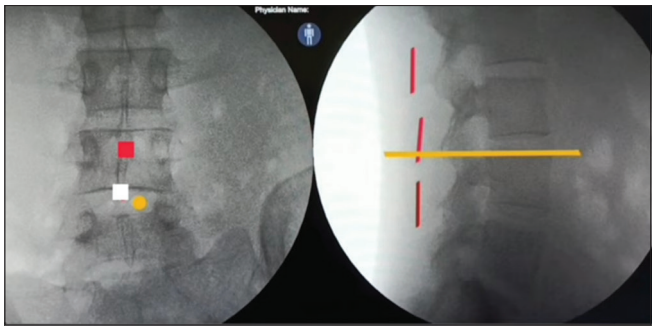

Figure 2: Radiological image depicting the Maclean's Point (yellow dot), drawing a line through it (lateral image), a direct path to subdural space (yellow line) can be seen

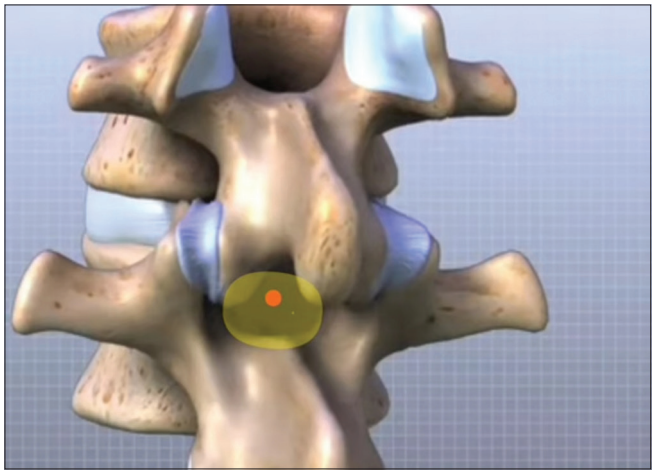

Figure 3: Lumbar spine is slightly tilted to the side. Shaded yellow area with red dot shows the Maclean's Point.

Figure 4: Highest and Lowest Point of Spinous Process (LPSP) is palpated and spinal needle is inserted 0.5 cm lateral to LPSP

for example, in patients with trauma, fracture neck of femur, proximal femoral fracture, and sometimes in obstetric and obese patients, it is almost impossible to get the legs flexed.

Of course spinal anesthesia can be performed at ease with extended legs. In such situation, the patient is made to lie in lateral decubitus position with hips and knees extended.

The idea of successful subarachnoid block with extended legs is by identifying the highest and lowest points of the spinous process and to go about 0.5 cm paraspinous level at the lower border of the spinous process (Maclean's point) perpendicular to reach the subarachnoid space [Figures 1-4].

This could be done conventionally by gently palpating the lumbar spinous process with the pulp of the finger from above downward to identify the lowest point of the spinous process. The needle entry is then made about 0.5 cm lateral to the midline at the lowest point of the spinous process (Maclean's point) to get into the desired space. An ultrasound could also be used to identify, measure, and mark the spinous process, thereby aiding a successful block in obese patients.

Thereby, Maclean's technique could prove as a novel and useful technique where the patients are not able to flex their lower limbs for subarachnoid blocks.

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Conflicts of interest

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