

## CORRESPONDENCE

### **The choice of anesthesia for cesarean section in patients with Guillain Barre Syndrome – The dilemma continues**

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Guillain Barre syndrome (GBS) in pregnancy is associated with increased maternal mortality due to respiratory failure.<sup>1</sup> Though the incidence of GBS is low (0.75-2 in 100,000 per year)<sup>2</sup> there are case reports describing anesthesia for a patient with GBS. The review of literature does not show any consensus or guideline for choice of anesthesia and/or safe management of these patients for emergency surgery like cesarean section (CS).

A patient with GBS suffers from ascending paralysis, progressive motor weakness and areflexia. The exact etiology of this syndrome is not known but it usually follows episodes of gastroenteritis or upper respiratory infection, as also in our patient.<sup>3</sup> The characteristic ascending paralysis raises the doubt of this syndrome as it is the most common cause of acute generalized paralysis.<sup>4</sup> Though the uterine tone is maintained and there is no contraindication for normal vaginal delivery in a pregnant patient with GBS,<sup>4</sup> the presence of IUGR and oligohydramnios may lead to the decision for cesarean delivery.

The extent of disease helps guide the decision for general anesthesia or neuraxial block. In all cases postoperative care in intensive care unit is needed. Arterial blood pressure monitoring may be done in anticipation of any fluctuations due to autonomic dysfunction. It is prudent to avoid succinyl choline in these patients due to risk of severe hyperkalemia. Feldman reported sudden cardiac arrest after administration of succinyl choline to a patient with GBS.<sup>5</sup>

Many authors have reported successful neuraxial

block in pregnant patients with GBS. Brooks et al have reported uneventful subarachnoid block in a pregnant patient with GBS who had autonomic dysfunction as well.<sup>4</sup> Alici et al reported uneventful epidural anesthesia for the same patient with GBS twice for two consecutive cesareans.<sup>6</sup> Kocabas et al also opted for epidural anesthesia for pregnant patient with recovering GBS presenting for elective CS.<sup>3</sup>

Wipfli and colleagues have described uneventful subarachnoid block in a tetraparetic elderly patient with decreased respiratory reserve presenting for transurethral resection of prostate.<sup>7</sup> They also reviewed eighteen cases of GBS who received neuraxial block for various surgeries and concluded that there is no causal relationship between neuraxial block and GBS.

On the other hand, Kim et al gave general anesthesia to GBS patient for emergency CS. The patient had worsening respiratory distress and had to be put on mechanical ventilation prior to delivery of foetus.<sup>8</sup>

Patient with GBS when diagnosed early in pregnancy should receive thromboprophylaxis as the incidence of thromboembolism is 1-13% which can cause significant mortality.<sup>9</sup>

Anesthesia for a pregnant patient with GBS is solely the discretion of anesthetist who decides the management depending upon the patient's clinical condition. As the incidence of GBS is very low, there is no prospective randomized trial available and there is paucity of evidence based literature regarding management of such patients.

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## Be flexible with your fixed reservoir bag

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Anesthesia workstations provide anesthesia teams with reliable support during perioperative period increasing efficiency and saving time. Many models of the workstations have the fixed type of reservoir bag with adjustable arm (Figure 1). The fixed adjustable arm is a limiting factor for anesthesiologists mobility and manoeuvrability during induction of anesthesia. We have improvised a simple assembly to address this problem by using components which are readily available in every operating room and enhancing the length of this fixed assembly to make it more user-friendly. A reservoir bag, two plastic connectors and one kink-free PVC tubing are used to make a longer flexible arm with reservoir bag. (Figure 2)

This assembly is easy to use and gives more working space between workstation and operating table especially for procedures to be done in prone position because in those patients induction of anesthesia and tracheal intubation are done on stretcher and afterward patient is turned prone on operating table.



**Figure 1: Fixed arm reservoir bag**



**Figure 2: Improved flexible arm reservoir bag**

## Subdural block – a complication of epidural anesthesia

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A 62-year-old, 185 cm tall, ASA-I male patient was scheduled for right hip bipolar hemiarthroplasty under epidural anesthesia. Epidural space was identified at L2-3 interspace in the sitting position, by loss-of-resistance to air technique using 18-gauge Tuohy needle. There was no problem during needle placement and it was not rotated. Epidural catheter (multiport, closed tip) was inserted through the needle with minimal resistance and fixed at 10 cm mark at skin. After negative aspiration for blood and CSF, 3 ml lignocaine (1.5%) with epinephrine (1:200000) was injected as test dose followed by 8ml (0.5%) bupivacaine.

After 15 minutes, patient could still lift his left leg against gravity and move his right leg though unable to lift it due to injury. His blood pressure decreased from baseline 112/70 to 60/48 mmHg and heart rate from 100 to 80/ minute. His mentation was appropriate and he had no difficulty in breathing or phonation. 100% oxygen, crystalloids and mephentermine 3 mg was administered. Blood pressure transiently rose to 85/60 mmHg, but fell again to 62/50 mmHg, so dopamine infusion was started. The level of sensory block was at T<sub>2</sub> dermatome. SpO<sub>2</sub> remained 99-100% throughout.

We suspected a subdural block. Surgery was not possible in absence of motor blockade and alternative anesthesia was required. We considered it safe to wait for the effect of subdural block to subside before administering general anesthesia to avoid the risk of further myocardial depression in presence of an already high sensory and sympathetic block. The case was postponed. After removing the epidural catheter the patient was shifted to postoperative room with continued fluids

and dopamine infusion. After 2 hours, patient had complete recovery of sensory loss, with BP 110/80 mmHg without vasopressor support.

An unintended subdural drug deposition may occur with an incidence of 0.006%<sup>1</sup> to 17%<sup>2</sup> during epidural anesthesia. Predisposing factors include rough handling, epidural needle rotation in epidural space<sup>3</sup> and previous back surgery.<sup>4</sup> The onset of subdural block is usually slow (15-20 min). The presentation of clinical signs is varied and depends on the spread of local anesthetic. The sensory block is usually high and disproportionate to the volume of drug injected<sup>5</sup>; but in some cases it may be inadequate or completely absent.<sup>2</sup> Sympathetic and motor functions are usually not affected due to the relative sparing of the ventral nerve roots.<sup>6</sup> According to Lubenow's diagnostic paradigm,<sup>4</sup> a negative aspiration and an unexpected extensive sensory block are considered as major criteria. While minor criteria include sensory or motor nerve blockade with delayed onset of greater than ten minutes, a variable motor blockade and sympatholysis out of proportion to the dosage of local anesthetic administered. If both major and at least one minor criterion are met, then a subdural blockade should be considered. Our case met both major and minor criteria confirming the diagnosis of a subdural block. We did not do a radiological confirmation of catheter position as it has risks with no therapeutic benefit.

In case of accidental subdural catheter placement there are no established guidelines for management. Agarwal et al<sup>3</sup> have suggested that the catheter should be relocated to another space. Patient should be reassured, monitored and provided supportive

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treatment. Prior to planning a subarachnoid block in these patients, enhanced cephalad spread of local anesthetic should be anticipated.<sup>7</sup> While administering general anesthesia, succinylcholine should be used cautiously as it may induce severe bradycardia in patients with high sympathetic block.<sup>8</sup>

To conclude, subdural drug deposition is a possible complication of neuraxial block. Its early

recognition and prompt management can avert a catastrophe. In the event of an inadequate or partial effect, anesthesia must be supplemented with extreme caution especially in patients with high sympathetic and sensory block. In elective, non-emergent surgery, it may be prudent to wait for the effect of subdural block to wear off before administering alternative anesthesia.

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