

Anesthetic Technique For Elective Cesarean Section In A Patient With Allergy To Amide Local Anesthetics

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Introduction: Neuraxial techniques are integral elements of analgesic and anesthetic management of obstetric patients. Albeit rare, allergic reactions to LA might be clinically significant, and could constitute a contraindication to the use of some regional anesthetic techniques. Here, we present a case of a pregnant patient with allergy to amino-amide LA who underwent cesarean delivery. This case represented a challenge to the anesthesiologists and highlights the importance of anesthetic planning and mastering of different techniques.

Case presentation: A 35 year-old pregnant patient G1P0 at 38 weeks gestation with a fetus in breech presentation, without significant past medical history and pregnancy complicated by gestational diabetes mellitus, presented to the Department of Anesthesiology referred by her obstetrician due to history of allergy to LA. As a teenager the patient experienced an episode of dizziness and syncope during a dental procedure, prompting skin testing for LA, which was positive for both tetracaine, bupivacaine and lidocaine. The patient didn't recall any symptoms on the spectrum from hives to anaphylaxis to suggest an IgE-mediated reaction.

Evaluation by the Allergy and Immunology Department took place, finding significant dermatographism that complicated interpretation of skin allergy tests. The test for tetracaine was negative, tolerating a subcutaneous challenge up to 0,5 mL. With this information, the patient was labeled as allergic to amide LA and the anesthetic plan for labor and delivery was devised.

Cesarean section was scheduled for 39 weeks of gestation; however, because of ongoing labor, she was admitted for the procedure in an urgent fashion 5 days earlier. The patient was prepared for surgery. Standard ASA monitoring was used and the code cart was readily available. An epidural technique with catheter was performed in the sitting position with midline approach at L3-L4 level. Skin was infiltrated with 3 mL of 3% chloroprocaine. The epidural space was identified with loss of resistance to normal saline and a 20 G catheter was advanced without complications. No test dose was utilized and titration of 3% chloroprocaine up to 20 mL with 100 mcg of fentanyl was done. During the procedure, the sensory level achieved was T4 and she maintained hemodynamic stability. Apgar scores were 8 and 9 at one and five minutes respectively. The patient didn't show any signs of skin allergic reaction or bronchospasm during or after the case. Discharge from the hospital was ordered two days later without maternal or neonatal complications.

Discussion: The prevalence of true IgE-mediated allergy to LA has been estimated to be less than 1% (1). In certain instances, side effects related to LA are often attributed to allergic reactions, and some patients are labeled as allergic to LA without further investigation. Neuraxial anesthesia with LA is the technique of choice for cesarean delivery as it may be

associated with a decreased rate of complications (2). Allergic reactions to LA are more common with amino-ester agents, which are derivatives of para-amino benzoic acid (PABA) (3). On the other hand, there are scarce reports of true allergy to amino-amide LA (4,5). In our case, an updated evaluation by the Department of Allergy and additional testing were warranted in order to accurately establish the diagnosis and to determine whether there was negative testing to specific LA. As a result of those investigations, regional anesthesia with ester-type LA was still a possibility for delivery.

When amide-type LA are contraindicated in the surgical patient, an anesthetic plan including different techniques and medications must be devised and discussed with the surgical team. Neuraxial anesthesia in the context of labor and delivery should be devoid of neurotoxic effects, have a favorable pharmacokinetic profile including rapid onset time and be reliable in terms of level and depth of block with fewer side effects. These anesthetic goals can be achieved with LA and non-LA medications. 2-chloroprocaine is an amino-ester LA with anesthetic profile comparable with lidocaine when used for intrathecal and epidural anesthesia/analgesia, and is an excellent alternative when amino-amide LA are contraindicated (7). Meperidine is a phenylpyridine opioid agonist with local anesthetic properties when injected intrathecally (8), and has been used as a sole agent in spinal anesthesia for cesarean section. The dose of meperidine used in this setting is 75 mg with an expected T4 dermatomal level at five minutes. In this case, epidural 3% chloroprocaine was successfully used with predictable onset and offset times as well as adequate block quality. Preparation for general anesthesia must always take place as backup. Finally, should the patient have required labor analgesia, both a narcotic intravenous PCA technique supplemented by nitrous oxide and combined spinal-epidural, with spinal doses of either meperidine or chloroprocaine and epidural infusion of chloroprocaine, would be reasonable options.

Conclusion: a rare situation like allergy to amino-amide LA poses significant challenges to the anesthesiologist. Knowledge of pharmacologic alternatives and mastering of diverse anesthetic techniques are of utmost importance in this scenario.

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