

Provocative Challenge Testing And Subsequent Successful Epidural Analgesia In A Morbidly Obese Patient With Known Local Anaesthetic Hypersensitivity

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Citation

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Abstract

A 54 year old morbidly obese patient with suspected allergy to Lidocaine was posted for abdominal hysterectomy. She was additionally hypothyroid and had a grossly deranged PFT. A low thoracic epidural procedure with Bupivacaine infusion for intra and post-operative pain relief was planned. Provocative challenge with incremental doses of Bupivacaine were used for skin testing which yielded negative results. We went with the epidural technique and subsequently small epidural doses of the local anaesthetic were consistent with our skin test findings. Adequate analgesia was obtained using incremental dosing. Finally at the end of the procedure, we could actually extubate the patient on table. The post operative period was uneventful.

Conclusions: Allergy to local anaesthetics is rare. However it is necessary that health professionals do take extra precautions in strongly suspected cases.

INTRODUCTION

Adverse reactions to local anesthetics are rare (1) and are usually because of the paraben or sulfite preservatives in them. Allergy to local anesthetics has for a long time been considered a pseudo-allergic or anaphylactoid reaction (2). We present a case with known hypersensitivity to local anaesthetics who underwent provocative challenge testing with preservative free (PF) Lignocaine as well as Bupivacaine before a successful epidural analgesia ensued.

CASE REPORT

A 54 year old morbidly obese (MO) (body weight-110kgs, height-155cm, BMI-45.8), hypertensive, diabetic, hypothyroid and asthmatic patient was admitted to our hospital with acute onset breathlessness. On initial examination she was conscious, oriented but was very much distressed and orthopneic. She was hemodynamically stable. Chest auscultation revealed decreased breath sounds with varying degrees of bronchospasm and few crepitations in bilateral lung fields.

She was admitted in the ITU and initial treatment was started with nebulised Salbutamol and antibiotics.

Abnormal findings in investigations included a RBS of 170

mg/dl, glycosylated-Hb of 8.7%, serum creatinine of 1.7 mg/dl and serum potassium of 6 mEq / litre, which was corrected. Chest X-ray revealed bilateral basal pneumonitis. The 12 lead ECG showed poor progression of R wave. The echocardiogram revealed an EF of 50%, mild LVH and moderate PAH (systolic-50mmHg). Urine examination was positive for proteinuria. The ABG analysis revealed primary respiratory acidosis. She required a BiPaP support at night time during the initial ten days of stay in the ITU. Over

the next one month she had recurrent episodes of respiratory distress which was consistent with acute LRTI complicating her primary respiratory condition (COPD). Judicious use of antibiotics and adequate respiratory care helped her condition to stabilize gradually over one month.

During the course of her hospital stay she was diagnosed with long term perimenopausal dysfunctional uterine bleeding, refractory to conservative therapy, and a plan for total abdominal hysterectomy with bilateral salpingo-oophorectomy was made.

A thorough preoperative check-up was done which revealed additionally a definite history of severe allergic reaction to Lignocaine and a grossly deranged spirometry which showed a combined obstructive and restrictive disorder. She

had been exposed to Lignocaine as a local anaesthetic injection at age 24 during her first child birth just prior to episiotomy when she suffered a severe hypotensive episode and sudden onset breathlessness. A second episode was documented at age 34, when she underwent a dental extraction procedure under Lignocaine infiltration analgesia. This time she suffered a transient respiratory arrest. A third episode was encountered when she was advised Lignocaine jelly to cope with dyspareunia at age 46. This time she had extensive rash, excoriation and pruritus vulvae.

The anaesthetic plan was difficult to decide upon. Her spirometry and co-morbid conditions were more in favour of an epidural analgesia, yet she was allergic to Lignocaine and possibly to other local anaesthetics too. We decided to test her sensitivity to both Lignocaine and Bupivacaine and if possible go ahead with a low thoracic epidural combined with general anaesthesia. After fasting for 12 h, an IV canula and standard intraoperative monitors were placed. Subcutaneous injections of PF 1% Lignocaine as well as 0.25% Bupivacaine were administered (in two different limbs) beginning with 0.1 mL, followed by 0.5-mL, 1.0-mL, and 2.0-mL doses. The test doses of Bupivacaine were only started on another limb after the Lignocaine test was complete. The patient was observed for 15 min after each injection for clinical signs of allergic reaction which however was not seen. We apprehended that proper positioning for thoracic epidural in the awake state would be difficult and so proceeded with the general anaesthetic first comprising of Propofol, Fentanyl, and Atracurium. Difficult airway was predicted but since bag – mask ventilation after induction was adequate we proceeded with the relaxant. Intubation was relatively easy. The epidural was placed in between T 12 and L 1 in lateral position. Incremental doses of 0.25 % Bupivacaine were administered epidurally. No adverse reaction of any form was noted. The procedure was otherwise uneventful. We could actually extubate the patient on table. Pain relief in the immediate and subsequent post-operative period was satisfactory.

DISCUSSION

Our patient had a convincing history of local anaesthetic hypersensitivity. So we decided to test it with PF Lignocaine as well as Bupivacaine. We continued the procedure with Bupivacaine since it has longer duration of action. The safety and utility of provocative challenge testing has been well established^(3,4,5). We followed the methodology of

Chandler et al.⁽⁶⁾.

General anesthesia in MO patients generates much more atelectasis than in nonobese patients⁽⁷⁾. Epidural analgesia (EDA) should be considered in obese patients undergoing midline laparotomy to improve postoperative spirometry⁽⁸⁾. A large reduction of FVC occurs after lower abdominal surgery than after non-abdominal surgery on the first day after operation⁽⁹⁾. The decrease in lung volume is thought to be related to pain and abdominal muscle spasm. Postoperative respiratory function is significantly more impaired in obese patients. As our patient was at high risk for postoperative pulmonary dysfunction owing to multiple factors, ensuring adequate pain relief was crucial. Our decision to carry on with provocative skin testing and subsequent epidural Bupivacaine turned out to be fruitful as the patient had a safe and uneventful recovery.

In the end, we conclude that true allergy to local anaesthetics is rare. In such cases where adequate pain relief using local anaesthetics is thought to improve patient outcome, a prior history of suspected allergy to local anaesthetics should not deter the anaesthesiologist from a provocative challenge test which in most cases have proven to be negative⁽¹⁰⁾.

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