

## Case Report

# Management of a 30-year-old pregnant patient with carcinoma breast posted for mastectomy managed by Thoracic Epidural

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## Abstract

Pregnancy, in itself, is a high-risk condition and any procedures performed during any gestation period can prove detrimental for the mother as well as the fetus, hence it becomes a challenge for the anesthetist to choose a mode of anesthesia that can prevent major complications. We witnessed a similar case in our hospital wherein a 30-year-old pregnant patient at 34 weeks gestation with carcinoma breast was posted for mastectomy. Considering all the risks, we managed this case by thoracic epidural successfully. The surgery was uneventful.

## Introduction

Any elective surgeries done during pregnancy pose a risk for both the mother and the fetus. Risk stratification should be done accordingly and a technique that can benefit both of them should be sought. General anesthesia can be avoided in lieu of regional anesthesia like Thoracic Epidural Anaesthesia (TEA), which is safer intra-operatively as well as provides post-operative pain relief.

## Case report

We report a case of a 30-year-old pregnant patient at 34 weeks gestation posted for a right mastectomy in our hospital. She was diagnosed to have carcinoma breast one week prior to surgery. Relevant history was taken and nothing was significant. On examination, no significant presentation was found. Her investigations were within normal limits. According to the American Society of Anaesthesiologists (ASA) grading,

she was graded as ASA 3. A high-risk consent was obtained after explaining the details and risks associated with the procedure.

In the operating room, routine monitors were attached. Basal blood pressure was 110/80 mm Hg, Heart rate was 88/minute, and oxygen saturation of 99%. A preloading of 500 ml Ringer Lactate was given. Under all aseptic conditions, she was given a thoracic epidural block at the level of T6 using an 18G Tuohy's needle in a sitting position. After confirmation, 6 cm of epidural catheter was inserted in the cephalad direction. The patient was made to lie down and 3 ml of 2% lignocaine with adrenaline was injected slowly, then 10ml of 0.5% bupivacaine was injected slowly after 10 minutes. The sensory block level height achieved was T1- T7 level. She was sedated with 25mcg of fentanyl and oxygen was given via face mask at 4 liters. The surgery was uneventful. As she complained of mild pain another 5ml of 0.5% bupivacaine was repeated slowly. The duration of the surgery was 140 minutes. The estimated blood loss was 300ml and no blood transfusion was required. The



patient remained hemodynamically stable and comfortable throughout the surgery. Postoperatively pain management was done with 8ml of 0.125% of epidural bupivacaine every 12 hours and intravenous paracetamol 1gm 8 hourly for 24 hours, then 1gm 12 hourly. The patient resumed oral feeding about six hours post-operatively. The epidural catheter was removed on the 3<sup>rd</sup> postoperative day. The patient was discharged on the 5<sup>th</sup> post-operative day after consulting a gynecologist without any complications.

For ethical purposes, written consent for publication was taken from the patient.

## Discussion

Thoracic Epidural Anaesthesia (TEA) nowadays, has been well established as the anaesthesia of choice for thoracic and upper abdominal major surgeries in high-risk patients providing effective post-operative pain relief as well. The temporary segmental sympathetic blockade provided by TEA is known to mediate its peri-operative effects [1]. Beneficial physiological effects of TEA on gastrointestinal, cardiovascular, and respiratory systems have been well established [2]. Moreover, patients are awake or minimally sedated throughout surgery and airway reflexes are well preserved.

With the increase in the incidence of breast malignant neoplasia, surgical intervention including partial or total mastectomy with axillary lymph node clearance has become the mainstay of treatment. Due to inadequate pain control and the high risk of postoperative nausea and vomiting, general anaesthesia is frequently replaced by TEA, which offers adequate intra-operative anaesthesia and good post-operative analgesia without collateral effects and minimal hospital stay [3,4]. More so, general anesthesia during pregnancy especially in the first trimester is problematic as it can lead to spontaneous abortion, premature deliveries, and low birth weight hence if possible, elective surgery should be avoided [5].

Spontaneous abortion associated with surgeries during pregnancy is more likely due to surgical manipulation and the medical condition that necessitates surgery rather than because of the exposure of anesthesia but considering the high risk, a safer option than general anaesthesia should be sought [6].

In pregnancy, the choice of anesthesia depends upon the type of surgery, its duration, and the trimester in which it is being performed. Since the first trimester is the period of organogenesis and third-trimester surgeries can lead to preterm labor, the safest period is the second trimester [7]. The risk of placental transfer of various anesthetic drugs cannot be negated. Many drugs like benzodiazepines are linked with teratogenicity as well.

The physiological changes occurring during pregnancy involve almost every organ of the body [8,9].

For example, in the respiratory system, there is increased tidal volume and minute ventilation which in turn decreases

PaCO<sub>2</sub>. A higher oxygen consumption together with decreased functional residual capacity leads to a decrease in the safe duration of apnea. Pregnant females have higher baseline blood pressure, cardiac output, and blood volume as compared to their non-pregnant counterparts. A decreased gastrointestinal motility can lead to gastric aspiration. The main objective of any anesthetic technique is to avoid maternal hypoxia, hypercarbia, and in turn fetal asphyxia [10,11].

Thoracic epidural anaesthesia has been known to provide better management and control of physiological changes going on in a woman during mastectomy. A level achieved during thoracic block is adequate for both mastectomy and axillary clearance. A risk of cervical spread and thus phrenic nerve involvement is possible but it has been seen quite rarely. A successful TEA requires an expert anesthetist, especially in high-risk cases such as a pregnant woman [12]. Overall, TEA has been considered as a safe alternative in oncologic breast surgeries providing better patient satisfaction even post-operatively. It is also associated with an early hospital discharge and a low risk of nausea and vomiting as compared to general anesthesia [13].

In our case, since the patient had carcinoma breast, it was mandatory to remove the tumor though she was pregnant. So we used a technique that was less harmful to the fetus and also helpful for post-operative pain relief.

Similarly, Aarti Srivastava et al reported a case successfully done under thoracic epidural anaesthesia for modified mastectomy in a high-risk patient [14].

Rangrez et al reported a case successfully done under TEA for modified mastectomy in an asthmatic patient [15].

## Conclusion

Thoracic epidural anaesthesia is a feasible and safe alternative to general anaesthesia for oncologic breast surgeries, particularly in high-risk patients having comorbidities and a difficult airway. The use of TEA for breast surgery could enhance post-operative outcomes and curtail the overall cost of these procedures. Based on the available evidence, we recommend TEA for major breast surgeries in high-risk patients, though, large randomized controlled trials are the need of the hour.

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