



ANAESTHETIC APPROACH IN HYPOTHYROIDISM IN EMERGENCY SURGERY: A CASE REPORT

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ABSTRACT In anaesthesia practice, patients with pathologies of thyroid gland and the other endocrine systems are frequently experienced. Multiple organs as well as cardiovascular system are influenced in patients with thyroid gland dysfunction during the urgent surgery. We present our anaesthetic experience for exploratory laparotomy for ectopic pregnancy in a case whose hypothyroidism had been recognised initially during preoperative assessment. The patient was given low dose of spinal anaesthesia with bupivacaine and fentanyl with co-loading of fluids to prevent hypotension despite abrupt hypotension.

KEYWORDS :

INTRODUCTION

Thyroid disease is common; the prevalence is higher in women and with increasing age. Thus, a significant number of patients who are undergoing surgery may have concomitant thyroid disease. Although most patients with well-compensated thyroid disease do not need special consideration prior to surgery, patients who have a newly diagnosed thyroid disorder around the time of surgery require a discussion of the risks and benefits of proceeding with surgery.

Case Report

A 29-year-old female was presented to emergency department with complaint of pain abdomen right side. The patient was morbid obese. The patient had symptoms of hypotension and bradycardia. The patient was resuscitated with one litre of Ringer's lactate and mephentermine bolus and shifted to Radiology department for USG. USG examination showed visible ruptured ectopic pregnancy. Two unit of blood arranged and patient shifted to Anaesthesia operation room for exploratory laparotomy. Two wide bore cannulas of 18-G were taken and all standard monitoring attached and routine blood investigations were made. On ECG monitoring of low voltage, electrical activity was found with SPO₂ 99%, HR 90, BP 110/60 mmHg.

Pre-anaesthetic examination in operation theatre revealed hypothyroidism (TSH 73.4 µIU/ml) with T3 (1.03 ng/ml) and T4 (7.5 µg/dl). The patient was on thyroxine 50 µg tablet.

Spinal anaesthesia was given with low dose of bupivacaine 2.4 cc + 20 µg fentanyl. Abrupt hypotension was noted with BP 40/30 mmHg. Bolus doses of mephentermine with fluid resuscitation was done; however, there was no increase in BP. Immediately dopamine infusion with dose of 5 µg/kg/min started to increase BP. Surgery was done on dopamine infusion. Post-surgery, the patient was stable (BP 100/60) and shifted to anaesthesia ICU with dopamine infusion. Medicine consultation was taken and the patient's thyroxine dose was increased to 1.4 µg/kg. With the increased dose of thyroxine, dopamine doses were decreased and stopped on 4th day post-surgery. Subsequently, the patient was shifted to Gynaecology ward.

DISCUSSION

Hypothyroidism is an important clinical situation which develops result from thyroid hormone deficiency due to autoimmune disorder (hashimoto thyroiditis), thyroidectomy, treatment with radioactive iodine or antithyroid drugs, iodine deficiency and hypothalamo-hypophyseal axis impairment (secondary hypothyroidism).¹

According to basal TSH level, the hypothyroidism is categorized as; Subclinical, moderate and severe hypothyroidism.¹ In severe hypothyroidism, serum TSH level is significantly higher and free T4 level is depressed. In this case, TSH were severely high but T3 and T4 levels were normal.

In our case, we preferred spinal anaesthesia with low dose local

anaesthesia to minimize the complications of anaesthesia.² The patient suffered from hypotension during surgery.³ Continuous dopamine administration was needed to maintain normal blood pressure. After endocrinology consultation, although the patient diagnosed as hypotensive, there was no evidence in support of hypothyroidism because she had no discomfort such as edema, chill sensation, or slow response. However, conditions of the patient were improved after treatment dopamine infusion as well as the increased dose of thyroxine.

CONCLUSION

Despite administration of low dose spinal anaesthesia with bupivacaine and fentanyl, with co-loading of fluids, we were unable to prevent severe hypotension. The treatment for hypothyroidism should be made before surgery to prevent any such complication. However, for emergency surgeries, we should be ready with all the gears.

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