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Acute reaction to erroneous injection of adrenaline to the patients with hyperthyroidism

Beuy Joob^{1*}, Viroj Wiwanitkit²

¹Sanitation 1 Medical Academic Center, Bangkok Thailand

²Visiting Professor, Hainan Medical University, China

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ABSTRACT

Hyperthyroidism is an important endocrine disorder that can be seen around the world. In this disorder, the patient is usually hyperstimulate and palpitation. The effect of thyroid hormone is the explanation. A similar effect can be seen due to adrenaline reaction. In general, the use of adrenaline in the case with hyperthyroidism has to be carefully done. In the present case study, the authors present a case of acute reaction to erroneous injection of adrenaline to the patients with hyperthyroidism.

1. Introduction

Thyroid hormone is an essential hormone for every human being. It helps normalize the metabolism. However, over level of the hormone can result in clinical problem called hyperthyroidism. Hyperthyroidism is an important endocrine disorder that can be seen around the world. In this disorder, the patient is usually hyperstimulate and palpitation^[1,2].

The effect of thyroid hormone is the explanation. In physiology, a similar effect can be seen due to adrenaline reaction^[3,4]. In general, the use of adrenaline in the case with hyperthyroidism has to be carefully done.

In the present case study, the authors present a case of acute reaction to erroneous injection of adrenaline to the patients with hyperthyroidism.

2. Case report

The indexed case is a male patient, aged 45 years old, with underlying uncontrolled hyperthyroidism. The case visited to an anti-aging clinic asking for treatment of allergic problem. The patient was ordered dexamethasone intramuscular injection for management. Nevertheless, the in charge practitioner performed incorrectly injection.

The intramuscular injection of 1 ampule of adrenaline was done instead. Suddenly after injection, the patient developed severe headache. His blood pressure shot up to 230/200 mmHg and his heart rate was up to 120/min. The clinical feature of this case seems to be acute thyroid storm. The patient was managed by resting and giving antihypertensive drug. The patients get recovery within 20 min after intensive care.

*Corresponding author: Beuy Joob, Sanitation 1 Medical Academic Center, Bangkok Thailand.

E-mail: wiroj@yahoo.com

3. Discussion

The use of adrenaline injection is mainly for critical case such as cases required cardiopulmonary resuscitation or cases with anaphylaxis. For the patients with hypothyroidism, there are few reports on using adrenaline injection.

Sarnoff and Cope firstly raised the issue on injection of adrenaline in hyperthyroidism and mentioned for high awareness in usage^[5]. In fact as a potent vasoconstriction, it is recommended not to use adrenaline for the patients with uncontrolled hyperthyroidism^[6]. A great increase in blood pressure is the serious concern and can result in fatality^[6].

In the present report, the use of adrenaline is by human error. There is a previous case report on accidental injection of adrenaline by the patient and result in finger gangrene^[7]. However, the present case is by medical personnel. This can be called a medical disorder or iatrogenic complication.

The patient developed the symptoms of thyroid storm. Luckily the control of severe blood pressure can be done. Lesson learned from this case include a) awareness of drug to be used in injection must be a rule, b) the antihypertensive therapy can effectively control the side effect of adrenaline injection and c) thyroid storm can be triggered by use of adrenaline.

Conflict of interest statement

We declare that we have no conflict of interest

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