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CASE REPORT

Hypnosis and Transversus Abdominis Plane Block for Brugada Syndrome Anesthesia: A Case Report

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Summary

Brugada syndrome is a distinct form of an arrhythmic disease affecting ionic channels of the heart. We report the anesthetic management of a patient with Brugada syndrome for inguinal hernia repair which was managed satisfactorily with combined light anesthesia, hypnosis with indirect suggestions and transversus abdominis plane block.

Keywords

Anesthesia, Brugada syndrome, Hypnosis, Transversus abdominis plane block

Introduction

Brugada syndrome is a primary electrical disorder affecting ionic channels of the heart and its anesthetic management is essential work because there are a lot of medications prohibited [1,2].

We report the anesthetic management of a patient with Brugada syndrome for inguinal hernia repair which was managed satisfactorily with combined light anesthesia, hypnosis and Transversus Abdominis Plane block (TAP block).

Case Report

White French male patient, 56-years-old, 76 kg, 170 cm, was scheduled for open left inguinal hernia repair. Past surgical history consisted of two orthopedic surgery one under general anesthesia, the other with epidural anesthesia. We could not obtain more information about these anesthesias. Past medical history found a Brugada syndrome but there was no history of angina, syncope and the effort tolerance was about eight Metabolic Equivalents (METS). Family history was negative for Brugada syndrome and for sudden cardiac death. The patient had no history of abnormal clinical bleeding and was not taking any medications. His ASA physical status classification was 2.

Brugada syndrome was diagnostic in 2014 because of a chest pain during night. His investigations were within normal limit except surface electrocardiogram that found ST segments < 1 mm with saddle-type pattern (Brugada type 2). A provocative drug test with intravenous administration of ajmaline induced type 1 ECG morphology with ST-segment elevation > 2 mm).

Because he has a Brugada syndrome type 2 with no history of ventricular fibrillation or syncope and no family history of sudden cardiac death, cardioverter defibrillator was not implanted [1-3].

Monitoring consisted of ECG with continuous ST segment analysis, a pulse oximeter and non-invasive blood pressure measurement. He was connected to Oxygen 2 L/min with nasal cannula and an external defibrillator pads with an external defibrillator was placed. Venous puncture (18G) was performed. After premedication with midazolam (1 mg), a TAP block was performed with 1% lidocaine adrenaline with ultrasound guidance and a total dose of 200 mg was injected. In addition to that, anesthetists nurse started hypnosis giving permissive and indirect suggestions of well-being. Even though

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indirect suggestions may have a relatively ambiguous or indirect connection between the hypnotist's words and the subject's responses, if the connection is not, on some level, implied the desired response will not occur. A moderate degree of sensory isolation was obtained by reducing the volume levels of equipment-related alarms and by dispenses unnecessary conversation.

The surgery began 20 min after the beginning of hypnosis and lasted 40 minutes. Intraoperatively, a total dose of 200 mg of thiopental and 10 mg of sufentanil was given to maintain Ramsay score of 2-3. Paracetamol (1 g) and ketoprofen (100 mg) were administered as prophylaxis.

Moreover, infiltration by the surgeon of 400 mg lidocaine adrenaline was done in the end of surgery. No dysrhythmia or ST-segment elevations were noted during the entire procedure.

At the end of the operation, anesthetists nurse invited our patient to reestablish contact with the operating room environment.

The patient remained in the post-anaesthesia care unit for ninety minutes and then returned to the Intensive Care Unit for oversight. He was discharged from the hospital 24 hours after surgery. No adverse events have been reported.

Discussion

Brugada syndrome is a distinct form of an arrhythmic disease that describes patients with a structurally normal heart at risk for malignant arrhythmias and sudden death. Pathophysiology included a sodium channelopathies which result in a reduction of sodium inflow current, thereby reducing phase 0 depolarization of the action potential and repolarization heterogeneity [1,4]. The association with ventricular arrhythmias and cardiac dysfunction is of concern to the anesthetist because medications routinely used in anesthetic practice may precipitate these events [2,5,6]. A Web site (www.brugadadrugs.org) was developed to ensure up-to-date availability of relevant information.

A lot of case reports have been described the anesthetic management of patients with Brugada syndrome but safe anesthesia in these patients remains controversial [2,4,6]. In additions, there is no consensus which is the best between local or general anesthesia [2,4,6]. Propofol have been associated with the development of arrhythmias in patients with Brugada syndrome however events have mainly described during prolonged infusion [2,6]. Limited dose and duration of Propofol use for maintenance anesthesia and is probably safe [2,6]. However, some authors suggested that combined used of Propofol with others risk drugs may increase the possibility of complications [2].

Thiopental has been described in numerous case reports without problems. Concerning etomidate to our knowledge, there is not report use in Brugada syndrome patients [2,6]. Regarding halogenated anesthetics, sevoflurane might be best since it has no effect on QT length [2,6].

Local anesthetics like bupivacaine, ropivacaine and levobupivacaine have been associated with ECG changes and ventricular tachycardia while some evidence suggests that lidocaine when combined with adrenaline/epinephrine may be used safely in Brugada syndrome [2,6,7].

In our patient, we preferred to do a light anesthesia associated with local anesthesia and hypnosis to avoid arrhythmias and without increasing risk. Combined with local anesthesia, beneficial effects of hypnosis on patients undergoing surgery have been previously described [8,9]. From an Ericksonian perspective "indirect" suggestions are theoretically approached as suggestions which can circumvent the censorship of consciousness to reach the "unconscious" where they can activate dormant potentials [8,10].

During hypnosis, the subject is driven into a state of consciousness and indirect suggestion activated a widespread network, including superior temporal gyrus, frontal and prefrontal cortices, inferior parietal lobule, lenticular nucleus, bilateral anterior insula, and anterioren cingulären cortex [9]. The activations found in the lenticular nucleus, anterior insula, and anterioren cingulären cortex show the emotional dimension of pain modulation. Moreover, the deactivations observed during indirect suggestions in precuneus and superior parietal lobule may imply a loss of self-consciousness and spatial attention, and thus a more passive, or receptive, attitude generating automatisms and mental absorption mechanisms [9].

In our case light anesthesia with hypnosis permitted to maintain a close psychological contact with the patient throughout the surgical procedure and it was safe and effective during open inguinal hernia repair.

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Competing Interest

No external funding and no competing interests declared.

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