

症 例

Anesthetic Management for a Patient with Wolff-Parkinson-White Syndrome undergoing Tonsillectomy

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We present here a patient with Wolff-Parkinson-White (WPW) syndrome, who was anesthetized with propofol during palatine tonsillectomy.

Case

A palatine tonsillectomy was planned for a 33-year-old 165 cm and 59 kg, female with chronic tonsillitis. Preoperative examination indicated no specific findings except for the WPW syndrome detected by electrocardiogram (Fig.). Based on a more detailed examination using a Holter electrocardiogram, she was diagnosed as having WPW syndrome.

Anesthetic management

No preanesthetic medication was administered to the patient. After establishing the venous line on the left forearm, 0.025 mg of fentanyl was administered intravenously and target controlled infusion was carried out to obtain a target blood concentration of propofol of 3 $\mu\text{g/ml}$. Vecuronium (3 mg) was also administered intravenously to facilitate tracheal intubation. Anesthesia was maintained using fentanyl (total amount of 0.1 mg), propofol (target blood concentration of 3-4 $\mu\text{g/ml}$), nitrous oxide and oxygen. In addition to local administration of 1 % lidocaine containing epinephrine (5 $\mu\text{g/ml}$) around the tonsil, disopyramide was continuously administered intravenously at 200 mg/h to avoid tachyarrhythmias. Delta wave was apparent from the induction to the end

of anesthesia, but perioperative hemodynamics were relatively stable. Postoperatively, disappearance of the muscle relaxant action of vecuronium was confirmed and the patient was extubated without antagonizing the muscle relaxant effect, and returned to her ward.

Discussion

Sadowski and Moyers¹⁾ established that successful anesthetic management of the WPW syndrome and its variants depends on avoiding tachyarrhythmias by suppression of sympathetic stimulation and is predicted upon understanding the electrophysiologic and clinical manifestations. Therefore, we avoided using atropine as the preanesthetic medication as well as for reversal of the muscle relaxant.

Although a report showed that the delta wave was disappeared following propofol administration²⁾, it is considered that propofol does not affect the refractory periods of the atrioventricular node, right ventricle and accessory pathway³⁾. We could administer propofol safely for the induction and maintenance of anesthesia. In addition to propofol, fentanyl and nitrous oxide were also used to maintain anesthesia. Neither fentanyl nor nitrous oxide had a modifying effect on the refractory periods of the accessory pathway⁴⁾.

Patients with WPW syndrome may have two major types of arrhythmias: atrial flutter fibrillation or atrioventricular reciprocating tachycardia. Atrial flutter fibrillation can be life-threatening in patients with short anterograde refractory periods of the accessory pathway, since it may deteriorate to ventricular fibrillation. Disopyramide have beneficial effects on

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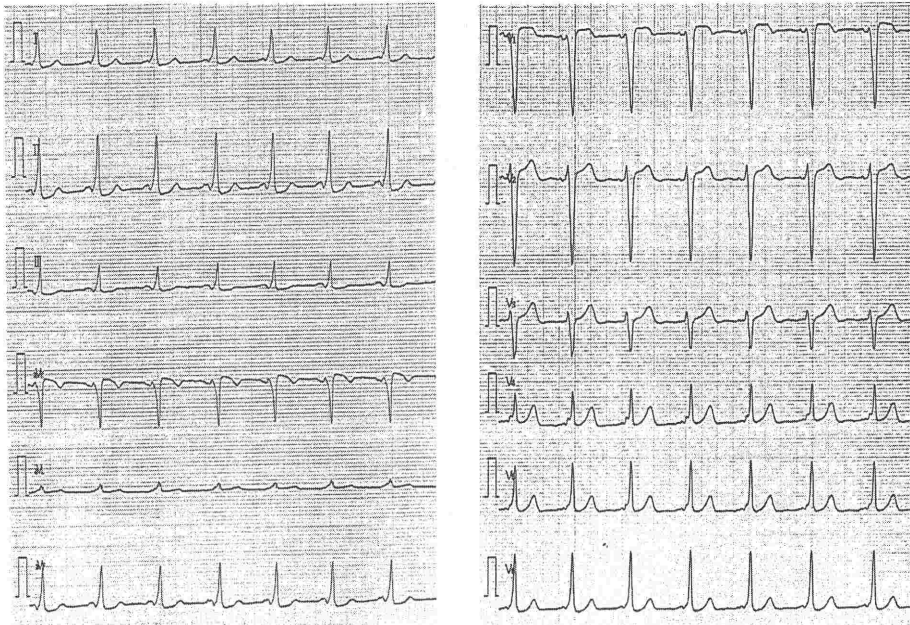


Fig. Preoperative 12-lead electrocardiogram showing Wolff-Parkinson-White syndrome.

accessory pathway conduction in patients with WPW syndrome^{5,6}). Because local administration of lidocaine containing epinephrine around the tonsil may lead to tachycardia, disopyramide was continuously administered to prevent it. However, disopyramide is useful and safe in patients with normal ventricular function who have atrial fibrillation and a predominant ventricular response over an accessory atrioventricular pathway⁵⁻⁸). Therefore, prophylactic administration of disopyramide may have little effect.

Conclusion

A patient with WPW syndrome was anesthetized with target controlled infusion of propofol during palatine tonsillectomy without any sequelae.

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