Anesthesia in Brugada syndrome (BrS): problems and pitfalls – case series

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Introduction

Rare autosomal dominant disease	Mutation of ion channels of the cardiac conduction system	Specific ECG changes and susceptibility to ventricular arrhythmias
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Perioperative pharmacological and physiological changes may be a trigger

The purpose of this study is to review the anesthetic management and perioperative outcomes of patients with BrS treated at our institution.

Methods

Retrospective chart review of anesthetic records; 2012-2016.

Patients with BrS or type 1 Brugada ECG pattern.

Data collected: administered drugs, ST segment alterations and occurrence of complications.

Results

Patients Characteristics		Frequency
Patients identified		13
Inclusion criteria	BrS diagnose	7
	Type I ECG pattern	13
ASA physical status	III	13
Gender	Male	9
	Female	4
ICD		3
Patients Characteristics	Median	σ
Age	58	12

Table 1 – Patients characteristics

Procedure		Frequency
Total of procedures		17
Anesthesia type	General	7
	Regional	3
	MAC	7
Timing of surgery	Day surgery	5
	Eletive	9
	Urgent	3
Post-anaesthetic care	PACU	9
	Intermediate	8

Table 2 – Procedures characteristics

Propofol	Fentanyl	Midazolam
Paracetamol	Ondansetron	Ketorolac
Tramadol	Rocuronium	Ropivacaine
Etomidate	Droperidol	Dexamethasone
Diclofenac	Ephedrine	Topic lidocaine
	Sufentanil	

Table 3 – Administered drugs

There weren't any significant changes in blood pressure, heart rate, ST-segment, or other ECG alterations either intraoperative and postoperative period.

Discussion

- Because of the low prevalence of BrS and the absence of prospective studies, current guidelines for anesthetic management of these patients derive from theoretical models based on disease pathomechanism and observations from case reports and series.¹
- We report the safe use of anesthetic agents that theoretically are associated with possible complications, e.g. propofol, neostigmine and local anesthetics.
- Other triggers, including surgical insult, vagal tone, electrolyte abnormalities and hypertermia may worsen ST elevation, a finding that is suspected to result in an increased risk of ventricular arrhythmias.²
- Despite the generally favorable outcomes specific concerns remain, and more studies about anesthetic drugs and molecular biology are necessary to choose the optimal drugs and anesthetic approach in these patients.

Conclusion

- BrS accounts for 4% of all sudden deaths and up to 20% of sudden deaths in patients without structural cardiac defects.
- Expert consultation and careful management of triggers are essential to reduce potential morbidity and mortality.

References:

1. Kloesel, B. et al. Anesthetic management of patients with Brugada syndrome: a case series and literature review. Can J Anaesth. 2011. 2011;58:824-836.
2. Sorajja, D. et al. Brugada syndrome and its relevance in perioperative period. Ann Card Anaesth. 2015;18:403-413.
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