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Incidence of Bradycardia in Premedicated and Non – Premedicated Patients Undergoing Inguinal Hernia Surgery.

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ABSTRACT

Incidence of bradycardia during surgery was studied in two groups of patients: the study group which received premedication with atropine and the control group which did not receive any anticholinergic premedication. 80 patients were included in the study. The incidence of bradycardia was 20% in the control group and zero in the study group. The main side effect of atropine observed was dry mouth which occurred in 55% of patients in the study group. To study the incidence of bradycardia in inguinal hernia surgeries and the role of atropine premedication in preventing the same.

Keywords: bradycardia, inguinal hernia, atropine

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INTRODUCTION

Bradycardia is the most common serious life threatening cardiovascular complication that occurs intraoperatively [1]. The reason for this phenomenon is vagal stimulation. The peritoneum is rich in vagal nerve endings. Stretching of the peritoneum can occur in inguinal hernia surgery when the contents of the hernial sac are explored or when they are replaced into the abdominal cavity. This most commonly leads to bradycardia, arrhythmias such as heart block, bigeminy, idioventricular rhythm can occur [2]. Atropine being an anticholinergic, blocks the effects of vagal stimulation. In the heart, it acts at the level of SA node, blocking the muscarinic (M_1) acetylcholine receptors. Normal vagal tone maintains the heart rate at a lower level. Due to the vagolytic effect of atropine, baseline heart rate is increased & the heart is protected from bradycardia producing effects of sudden vagal stimulation.

MATERIALS AND METHODS

In this study, 80 patients were studied. They were randomized to 2 groups. One group received inj. atropine 0.6mg intramuscularly half an hour before surgery. The control group did not receive any anticholinergic premedication. Surgery was done under spinal anaesthesia.

Inclusion Criteria

- Adult males aged 20-50yrs
- ASA I & II posted for elective inguinal hernia surgery.

Exclusion Criteria

- Age < 20 & >50yrs.
- ASA physical status III & more.
- Emergency surgery.
- Patient refusal to participate in study.
- Surgery under general anaesthesia.
- Patient on beta blockers.

Clearance was obtained from the hospital ethics committee. Informed consent was obtained from the patients. Pre-operative orders included nil per oral from 12 mid night. Patients were advised to continue any cardiovascular medications they may be taking. Oral premedication with tab.Rantac 150mg & tab.Alprazolam 0.25mg on previous night & on morning of surgery was given to all patients.

On the morning of surgery, i.v. line was started with 18G venous cannula & i.v. fluids were started at 100ml/hr. Half an hour before start of surgery, intramuscular atropine 0.6mg was given to those patients who were randomized to the study group.

Intra-operatively and post-operatively, the following parameters were recorded: baseline HR, NIBP, episodes of bradycardia and incidence of side effects like dry mouth, fever etc. Patients were observed for 6 hrs post operatively.

Bradycardia was defined as a sudden reduction in heart rate $\geq 20\%$ from the baseline within 1 minute, during the surgical procedure, accompanied by hypotension.

Intra-operatively, i.v atropine 0.6mg was given for episodes of severe bradycardia, i.e accompanied by hypotension or if heart rate < 50bpm.

RESULTS

The study group patients were found to have higher baseline heart rates. The mean BP was also higher in the study group.

In the control group, 8 patients had bradycardia. 6 of them were treated with i.v. atropine intra operatively. In the study group no patient had bradycardia. In the control group 10 patients complained of dry mouth. Out of these 5 patients had received i.v. atropine intra operatively.

In the study group, 22 patients complained of dry mouth. No patients recorded increased temperature in the immediate post op period.

	STUDY	CONTROL
MEAN AGE	41.5 ± 2.35	40.1±2.73
MEAN BASELINE HR	96±5.2	79±6.5
MEAN MAP	103±8.8	91±7.05
EPISODES OF BRADYCARDIA	0	8(20%)
DRY MOUTH	22(55%)	10(25%)
FEVER	0	0

DISCUSSION

Our results clearly show that atropine has a protective effect on preventing bradycardia intra-operatively in inguinal hernia surgery. Inguinal hernia surgery is one of the most common elective surgeries performed [3]. Bradycardia or other severe arrhythmias can increase the mortality and morbidity in these patients [4]. Atropine has been shown to have a protective effect against bradycardia in many situations like in ocular surgery, induction of anaesthesia in children, in gynaecological surgeries etc [5]. We decided to study patients undergoing inguinal hernia surgery because it is a commonly performed surgery.

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