

Day Care Anaesthesia; a Prospective Single-Centre Study Day Care Anaesthesia

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Abstract

The development of anesthetic agents, the management of acute pain, as well as the progress of monitoring, training, patient's pain assessment and the development of perioperative care are the main reasons for providing safer anesthesia to day care centers. Aim of this study was to present anesthesia parameters including patient demographics, type of anesthesia, drugs and the appearance of postoperative complications associated with anesthesia in a day care center. A descriptive study of the parameters of anesthesia (drugs, type of anesthesia and complications) in a day care center from February 2018 to May 2018. Four hundred & forty-nine interventions, minimally and medium surgeries with duration 30 to 120min, breast biopsy, lymph node biopsy, breast reconstruction, inguinal hernia repair as well as hysteroscopy & diagnostic abrasion. Of the total of 449 interventions, 201 were made with general anesthesia and endotracheal intubation, 76 with general anesthesia and laryngeal mask & 69 with neuroleptanalgesic. Prevention of nausea / vomiting occurred in 208 patients with ondansetron-ranitidine-metoclopramide-droperidol, while in 189 patients with ondansetron-ranitidine-metoclopramide. Upon awakening, 16 patients experienced cough, 3 bronchospasm & 2 deliriums. Day care centers have been established in developed countries, ensuring shorter hospitalizations, while anesthesia is safe for the patient.

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1 Introduction

The development of anesthetic agents, the management of acute pain, as well as the progress of monitoring, training, patient's pain assessment and the development of perioperative care are the main reasons for providing safer anesthesia to day care centers. The introduction of minimally invasive surgical techniques results in the reduction of tissue damage and postoperative pain, along with the economic factors and patient's preferences have given an additional boost to the preference of day surgery.

Meanwhile, patients' quality of life is the primary goal in health care systems, which includes the enhancement of normal activities resumption. Many surgical procedures under general anaesthesia are currently performed in day care clinics and patient are discharging the same day of the surgery, reducing hospitalized costs and rapid returning in daily activities.

In recent years, the patients who admitted in a day care center have increased, because the development of these centers has led to no overnight stay for minor and medium surgical procedure, as well reducing the hospitalization cost. [1] The day care center preserves patients' hospitalization in quality and safety, simultaneously their satisfaction. [2]

The aim of this study was to present anaesthesia parameters including patient demographics, type of anaesthesia, drugs and the appearance of postoperative complications associated with anaesthesia in a day care clinic.

2 Material and Methods

This was a prospective observational study designed to evaluate and correlate parameters of anesthesia during, in a day care center from February 2018 to May 2018. The protocol was approved by the Scientific Committee of the Hellenic Anticancer Institute at Saint Savvas Hospital, Athens, Greece. A full respect of the confidentiality of information throughout the collection and procession of the data was guaranteed. Four hundred & forty-nine interventions, minimally and medium surgeries with duration 30 to 120min, breast biopsy, lymph node biopsy, breast reconstruction, ophthalmic surgery, inguinal hernia repair as well as hysteroscopy & diagnostic abrasion.

The following demographics were collected: gender, age, body weight and height and body mass index (BMI), while smoking habits and allergies were noted. Also, type of surgery and anesthesia, medications for nausea/ vomiting were recorded. Finally, mallampati grading scale (MGS) and the American Society of Anesthesiologists (ASA) classification, as well as the complications were reported.

Statistical analysis was carried out by SPSS 22 (IMB SPSS Software, Chicago, Illinois), conducting Kolmogorov-Smirnov test of Normality. Comparisons were made using the chi-square test and Spearman rho. The data are expressed as mean \pm SD, in significant level 0.05.

3 Main Results

In the study were participated 449 patients. In Table 1, it is presented the demographic and clinical data of the patients. In Table 2, we present the type of surgery, such as breast lumpectomy, breast reconstruction following mastectomy or lumpectomy for cancer. Also, it is presented the Mallampati and ASA classification.

One percent of the patients had difficult intubation, whilst the type of anaesthesia was 22.9% with anaesthesia facemask and 77.1% with general anaesthesia. Specifically, the general anaesthesia was 44.8% with tracheal intubation, 16.9% with laryngeal mask and 15.4% with neuroleptanalgesia.

In Table 3, it is noted the medications' induction to anesthesia.

Wound infiltration was implemented in 2.2% of the patients, while the pain management is appeared in Table 4.

Furthermore, the prevention of nausea/ vomiting is noted in Table 5. Last but not least, the patients' complications are presented in diagram.

4 Discussion

In the recent years, where the health insurances are interested in reducing hospital costs, the preference in day care centers has increased. Patients prefer these primary health care centers, because they stay in the clinic for one day and by the night they have return home. Day care centers seem to be safe and provide quality to the patients. [3] This study records the anesthetic parameters of the first day care center, in Greece during the current reform of the its health system aiming at the development of the Primary sector.

Firstly, in the present study, in the majority of patients was administrated propofol and the incidence of nausea/ vomiting was 7.8%. Immediate recovery, which is following anesthesia, is an important aim for day-care surgery. Propofol is a popular agent for anesthesia because it is offer quick recovery and avoidance of nausea/ vomiting that it is an advantage for patients who have to be discharged earlier. [4]

Likewise, in our study, the rate of complications was low. Complications were observed to the 8.9% of patients. On the contrast, in the research of Singh et al., 2016, the anesthetic complications were 33.33%. Both, surgical complications and social reasons were included in that rate. The surgical complications were 15.87%, but excluding the social reasons, the overall incidence was 4.51%. [5]

In the contrary, the study of Lin et al., 2013 showed that no patients with cataract surgery had severe postoperative complications. (Lin J, Fang X & Wu S, 2013) Also, in the research of Singh et al., 2010 the complication rate after cholecystectomy was minor and relatively few. [7]

However, this study demonstrated the anesthetic parameters which offered a safe and efficient hospitalization of patient in the first day care center in Greece. The economical factors, as well as the anesthetic and medical advances have led to the development of the ambulatory surgery. [8]

Table 1: Patients' Demographic & Clinical Data
Patients (N=449)

Gender (%)	
Male	6
Female	94
Age (mean±SD)	49.62±15.37
Body height (cm) (mean±SD)	165.76±7.5
Body weight (kg) (mean±SD)	69.98±14.14
BMI (mean±SD)	25.43±4.78
Smoking (%)	
No	71.9
Yes	28.1
Allergy (%)	
No	68.4
Yes	31.6

Table 2: Patients' type of surgery, Mallampati & ASA Classification

Type of Surgery	Percentage (%)
Breast Lumpectomy	51.5
Breast reconstruction	6
Hysteroscopy- Biopsy	23.2
Thyroid Radiofrequency Ablation	4
Other	15.3
ASA Classification	
I	55.5
II	42.8
III	1.8
Mallampati Classification	
1	70.2
2	20.9
3	8
4	0.9

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Table 3: Patients' Induction Medication to anesthesia

	Percentage (%)
Propofol + Fentanyl	3.3
Midazolam + Fentanyl	6.7
Midazolam + Fentanyl + Propofol	43.9
Midazolam + Fentanyl + Propofol + Rocuronium Bromide	20
Midazolam + Fentanyl + Propofol + Succinylcholine	4.2
Midazolam + Fentanyl + Propofol + Succinylcholine + Rocuronium Bromide	21.8

Table 4: Patients' Pain Management

	Percentage (%)
Remifentanyl	0.2
Paracetamol + Remifentanyl	5.6
Parecoxibe + Remifentanyl	9.1
Paracetamol + Parecoxibe + Remifentanyl	38.1
Paracetamol + Lormoxican + Remifentanyl	47

Table 5: Patients' Prevention of Nausea/ Vomiting

	Percentage (%)
Ondasetron	2.2
Ranitidine	0.2
Ondasetron + Ranitidine	9.1
Ondasetron + Ranitidine + Metoclopramide	42.1
Ondasetron + Ranitidine + Metoclopramide + Droperidol	46.3

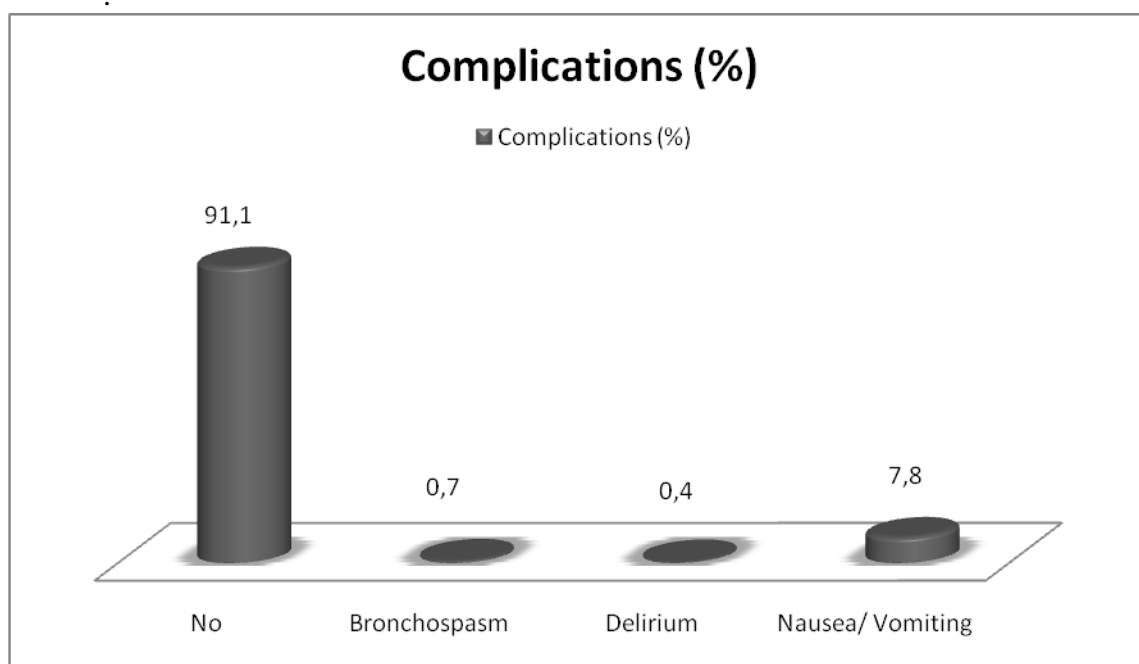


Diagram1: Patients' Complications

6 Conclusion

In the last few decades, worldwide, day care anesthesia has shown to be safe and has offered quality in patient' hospitalization. A revolution that it began in the United States and it became a global practice. Initially, economical and political factors led to the development of ambulatory techniques. Nowadays, day

care anesthesia is exchanging international perspectives, aiming patient's satisfaction. [9]

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