

Original Article

Anaesthetic Practice in Urological Surgery in a Tertiary Hospital at Brazzaville - Congo

Pratique anesthésique en urologie dans un hôpital tertiaire à Brazzaville - Congo

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ABSTRACT

Purpose. To evaluate anaesthetic practice during urological surgery procedures.
Patients and methods. This was a retrospective study of anaesthetic records of patients undergoing elective urological surgery. We studied comorbidities, anaesthetic technique, incidents and accidents, duration of surgery, surgical procedure and use of blood transfusion. **Results.** 194 patients were included. Their mean age was 52.7 years (range 16-94 years). Females constituted 14.5% of the study population. Hypertension was found in 40 (20.6%) patients and was the main comorbidity. ASA class 1 included 118 (60.8%) patients. Locoregional anaesthesia performed in 167 cases (86.1%) was the predominant anaesthetic technique. Sedation concerned 21 (10.8%) patients and 35 (18.1%) patients received general anaesthesia. Intraoperative incidents were found in 44.8%, including hypotension (80%) and bradycardia (15%). The mean duration of surgery was 85.3 ± 50.6 minutes, and adenectomy was the most common surgical procedure. Blood transfusion concerned 29 (14.9%) patients. Medical supervision of anaesthetic actions was present in 33.7% of cases. **Conclusion.** Anaesthesia in urological surgery concerns mainly adult patients. Medical supervision is low and the rate of intraoperative incidents high. Working time organisation for the medical team would probably improve these practices.

RÉSUMÉ

But. évaluer la pratique anesthésique au cours des interventions de chirurgie urologique. **Patients et méthodes.** Il s'agit d'une étude rétrospective portant sur des dossiers anesthésiques des patients opérés pour une intervention élective de chirurgie urologique. **Résultats.** 194 dossiers ont été retenus. L'âge moyen des patients était de 52,7 ans (extrêmes : 16-94 ans). Le sexe féminin constituait 14,5% de la population d'étude. L'HTA présente chez 40 (20,6%) patients représentait la principale comorbidité. La classe ASA 1 comportait 118 (60,8%) patients. L'anesthésie locorégionale pratiquée dans 167 cas (86,1%) était la technique la plus courante. La sédation concernait 21 (10,8%) patients, et l'anesthésie générale 35 (18,1%) patients. La fréquence des incidents préopératoires s'élevait à 44,8%. La durée moyenne de la chirurgie était de $85,3 \pm 50,6$ minutes, et l'adénomectomie prostatique la première intervention chirurgicale. La transfusion sanguine concernait 29 (14,9%) patients. La supervision médicale des actes anesthésiques avoisinait un taux de 33,7%. **Conclusion.** l'anesthésie en chirurgie urologique s'adresse au patient adulte. La supervision médicale y est faible et le taux d'incidents préopératoires élevé. Une organisation du temps de travail pour l'équipe médicale permettrait sans doute d'améliorer ces pratiques.

INTRODUCTION

The increase in the number of clinicians, including in anesthesiology and urology, associated with the ageing population and ongoing modernization efforts are the cause of improving the quality of care in urological surgery in developed countries [1, 2]. However, the situation is not the same in developing countries due to the lack of urological surgeons and anesthesiologists. This cannot be a real barrier to quality of care in this part of the world. However, efforts made in recent years in many sub-Saharan Africa countries in anesthesiologists training increases patient safety in operating rooms both in urology and in other surgical disciplines [3]. Congo (Brazzaville) is included in these observations. Only Brazzaville University Teaching Hospital provides care in urological surgery in the country. Nowadays no data on anesthetic activity in urological surgery is available in Brazzaville University Teaching Hospital. Thus, this work aims to evaluate anesthetic practices in urologic surgery procedures.

PATIENTS AND METHODS

This was a retrospective study conducted from January 2011 to December 2012 in Brazzaville University Teaching Hospital anaesthesia and intensive care department. The study focused on anaesthetic records of patients aged 16 and over who underwent schedule urologic surgery. Variables related to demographic, clinical, anaesthetic and surgical characteristics were studied. Data was entered into Excel and analysed by Epi-Info version 3.3.5.

RESULTS

205 anaesthetic records were identified, of which 194 (94.6%) were found to be usable.

Demographic and clinical characteristics

The mean age of patients was 52.7 ± 20.2 years (median age 58 years; range 16-94 years). Patients aged 65 and older ($n = 73$), accounted for 37.6%, while sex ratio [M/F] for the whole group was 5.9. Evaluation of operative risk score American Society of Anaesthesiologists (ASA) physical status classification system reported 118 (60.8%) patients as ASA I. The most common clinical history found was hypertension observed in 40 (20.6%) patients. Diabetes mellitus was in second place with 4 (2.1%) patients. Previous stroke, chronic obstructive pulmonary disease and sickle cell disease were the other antecedents, with a frequency of 1% each. Regarding cardiac aspects, the electrocardiogram, performed in 70 (36.1%) patients, proved normal in 27 (38.6%) cases. However, it revealed an arrhythmia in 6 (8.6%) cases, a conduction disorder in 11 (15.7%) cases, left ventricular hypertrophy and previous myocardial infarction in 10 (14.3%) cases. Long-term treatments concerned 30 (15.5%) patients.

Table I: Demographic characteristics

	N (Percent)
Mean age	52.7±20.2
Age≥60 years	90(46.2)
Male	166(85.5)
ASA classification	
ASA I	118(60.8)
ASA II	68(35.1)
ASA III	8(4.1)
Presence of comorbidities	51(26.3)

Anaesthesia practices

Locoregional anaesthesia ranked first with a total of 168 (86.6%) patients. The failure rate was 4.2% (7 cases). Conventional spinal anaesthesia was the most used technique, 167 cases (99.4%), while epidural anaesthesia was only used in one patient (0.5%). General anaesthesia concerned 35 (18.0%) patients. Table II reports the main anaesthetic drugs relative to general anaesthesia. Additional sedation was used in 21 (10.8%) patients. Diazepam (42.8%) and ketamine (38.1%) were the most commonly used anaesthetic drugs (table III).

Table II: General anaesthesia anaesthetic agents

Anaesthetic agents	Effective (Percent)
Hypnotic drugs	
Propofol	16 (48.5)
Thiopental	15 (45.4)
Etomidate	1 (3)
Ketamine	1 (3)
Halogenated anaesthetics	
Halothane	19 (57.6)
Isoflurane	2 (6)
Curares	
Vecuronium	17 (51.5)
Pancuronium	13 (39.4)
Morphine	
Fentanyl	33 (100)

Intraoperative incidents, mainly cardiovascular, were dominated by low blood pressure (figure 1).

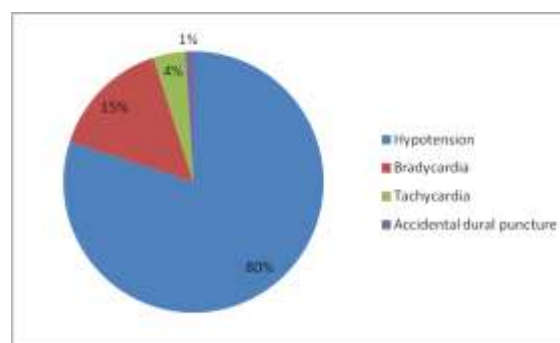


Figure 1: Intraoperative anaesthesia incidents

Concerning antibiotics usage, cefuroxime (53 cases), amoxicillin-clavulanic acid, (52 cases) and ceftriaxone (36 cases) were among the most prescribed molecules (figure 2).

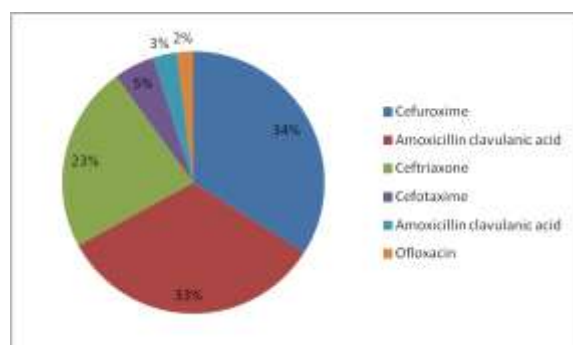


Figure 2: Antibiotic prophylaxis practice

Finally, 29 (14.9%) patients received intraoperative transfusion of packed red blood cells. The average rate of red cells used was 1.75 (range 1-4).

Table III: Anaesthetic drugs during sedation

Anaesthetic agents	Effective (Percent)
Hypnotic drugs	
Ketamine	8 (38.1)
Diazepam	9 (42.8)
Midazolam	4 (19.4)
Propofol	5 (14.3)
Halogenated anaesthetics	
Halothane	4 (19.0)
Morphine	
Fentanyl	3 (14.3)

Surgical aspects

The average duration of surgery was 85.3 ± 50.6 minutes (range: 10 minutes-6 hours). Prostate open surgery ranked first with a total of 89 (45.8%) patients; kidney and urethra surgery was second with 14 (7.2%) patients each.

DISCUSSION

The mean age of patients in our study (58 years) was similar to the 61 years reported by Sabate *et al* in Catalonia [4]. However, this age is still lower than that of patients undergoing urological open surgery in France [1]. Moreover, in our study, urological surgery concerned 85.5% of male cases. This proportion is close to the 87.3% of the Catalan study [4]. The less advanced age of our patients may explain their low operative risk, resulting in a high incidence of ASA I patients (60.8%). However, in Catalonia, only 30.9% of patients were classified as ASA I, while both classes III and IV represented 38% of patients [4]. In our study comorbidities frequency was 26.3% (table I), arterial hypertension and diabetes mellitus being the leading

causes with a respective frequency of 20.6% and 2.1%. In addition, preoperative electrocardiogram showed cardiovascular abnormalities which could account for the frequency of long-term treatment (15.5%). But abnormalities presence had little influence on incidence of intraoperative cardiovascular morbid events. However, in France, poly and/or self-medication was found in 95% of patients older than 65 years, while at the same time cardiovascular disease concerned 80% of patients over 60 years [5].

Locoregional anesthesia used in 168 (86.6%) of cases was the most commonly used anesthetic technique. Conventional spinal anesthesia ranked first with 167 (99.4%) patients. Effective anesthetic technique despite hemodynamic consequences, spinal anesthesia present favorable risk/benefit ratio for patients [6]. Moreover 94 (48.4%) patients in our study suffered intraoperative cardiovascular morbid events (figure 1). The responsibility of the anesthetic technique cannot be established in polymedicated elderly patients with comorbidities [5, 7]. In Spain, locoregional anesthesia frequency alone is 49.8% including 74% of spinal anesthesia. In 15.2% of cases locoregional anesthesia is associated with general anesthesia [4]. However in France, Clergue *et al* [1] reported a frequency of 91% for conventional spinal anesthesia in patients undergoing open prostate surgery. Despite its advantages, epidural anesthesia practice is less than that of spinal anesthesia, 0.6% of cases in our study, 5% in France and 10% in Spain [1, 4]. Insertion of epidural catheter is used for post-operative pain management [8].

General anesthesia of first indication or after spinal anesthesia failure concerned 35 (18 %) patients and sedation was associated with locoregional anesthesia in 21 (10.8%) cases. The main hypnotics during general anesthesia were propofol (48.5%) and thiopental (45.4 %) (Table II), diazepam (42.8%) and ketamine (38.1%) during sedation (table III). One of propofol advantages is the good anesthetic recovery despite its cost. Thiopental with complex pharmacokinetics is in second rank and represents the best hypnotic choice for patients with low financial resources and free of contraindications. Halothane (57.6%) was the leading halogenated anesthetic administered followed by isoflurane (6%). Lack of health insurance and economic reasons will justify halothane administration, halogenated anesthetic agent with deleterious cardiovascular and hepatic effects.

Prostate surgery (45.82%) and renal surgery (10.8%) were the most common surgeries. In all cases patients underwent open surgery. Thus, homologous blood transfusion, blood transfusion strategy currently used in our surgical environment concerned 29 (14.9 %) patients of which 23 (25.8 %) patients undergoing prostate surgery and 5 (23.8%) other renal surgery patients. However, defibrination of tissue plasminogen activators causes bleeding during prostate surgery [9]. Furthermore, laparoscopic surgery and endoscopic surgery development reduced significantly perioperative blood transfusion incidence in developed countries. Blood transfusion in these countries calls upon strategies such

as scheduled autologous transfusion, normovolemic hemodilution and perioperative blood salvage [10].

CONCLUSION

Anaesthetic practice in urologic surgery in Brazzaville identified high frequency of elderly patients undergoing open prostate surgery under spinal anaesthesia. In addition homologous blood transfusion is exclusive transfusion strategy. Inclusion of these data provides essential in planning staff training and medical material equipment acquisition for improvement of anaesthesiologists and surgeons daily practice.

CONFLICT OF INTEREST

Authors report no conflict of interest.

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