



A Report on the Practice of Day Case Surgery at the Federal Medical Center, Owerri, Nigeria

J. K. Aguocha¹ and C. C. Onoh^{1*}

¹Department of Health Services, Federal University of Technology, Owerri, Nigeria.

Authors' contributions

This work was carried out in collaboration between both authors. Author JKA designed the study, wrote the protocol and the first draft of the manuscript. Author CCO managed the literature searches, performed the statistical analysis and confirmed the accuracy of the results and documentation. Both authors read and approved the final manuscript.

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ABSTRACT

Introduction: Day case surgery is described as admitting a patient to the hospital for a selected elective surgical or diagnostic procedure followed by recovery under observation, then discharging the patient, when stable, to home care. The procedures usually do not require extended recovery time and are performed under local anesthesia, However, if available, general anesthesia can also be provided.

Purpose: This study was performed to determine the nature and number of the various surgical procedures performed in our hospital's same day surgical service.

Methods: This was a hospital-based cross sectional study of 138 patients treated between July 2007 and June 2008. Data was collected from the time of the registration, during the clinical examination and collection of samples for laboratory study. The data generated was entered into Microsoft Excel 2016 and transported into Statistical Package for Social Sciences (SPSS) version 22.0 Inc. (Chicago, IL, USA). Results were presented as frequencies and percentages for categorical variables.

*Corresponding author: E-mail: drcharlesonoh@gmail.com;

Results: The General Surgery service had the most cases (86 cases, 62.3%), followed by Pediatric Surgery (17 cases, 19.6%). Orthopedic surgeries were the least number of procedures performed (11 cases, 8.0%). In terms of procedures performed, the most frequently performed procedure was lesion excision (65 cases, 47.1% followed by excision biopsy (20.3%), then herniotomy, herniorrhaphy, hydroceletomy at 10.9%, 4.3%, 3.6% respectively.

Conclusion: Hospital facilities management of resources, staff, hospital infrastructure, continued improvement, and sustainability can be helped by continued self-assessments to aid in choosing and investing in the most relevant technology to control costs and, at the same time, continue to improve clinical care.

Keywords: Day case surgery; case load; surgical procedures; frequency; Owerri.

1. INTRODUCTION

Day case surgery (DCS) is a process in which patients are admitted and discharged on the same day when a surgical or diagnostic procedure is performed but also may require a facility and time for recovery [1-2]. These procedures are usually performed under local anesthesia and generally do not require an extended post - operative recovery time [3]. However, selected procedures can also be performed under general anesthesia if personnel and facilities are available and if the patient is not considered to be a risk for general anesthesia. Following the procedure and brief recovery period, the patient can be more quickly returned to the familiar home environment that can be psychologically and physically better for the patient to recover [4]. The need for DCS resulted from increased patient loads and long waiting times, inadequate inpatient facilities, and diminished resources [4,5]. Early discharge of surgical patients is a means for using resources more efficiently without reducing clinical effectiveness [6,7]. The benefits of DCS include reduced hospital costs, short hospital stays, early return to work or school, less emotional stress, and minimized hospital acquired infections [8-10]. Day case surgery can be practiced by all surgical specialties. However, the use of Day case surgery varies from one specialty to another [4]. The specialties of Neurosurgery and Cardiothoracic surgery make limited use of day surgery compared to Urology and General Surgery [4].

A study of 32, 311 day cases carried out over 6 year time period (1972-1978) at the Western General Hospital in Edinburgh reported that the Urology unit had the greatest number of day cases followed by the Gastroenterology unit [11]. The Neurosurgery unit had the least number of

cases. Most of the Day case surgeries found in Federal Medical Center, Owerri and other hospitals in Nigeria like the National Orthopedic Hospital, Enugu include hernia, varicose vein, haemorrhoid, hydrocele, gynaecomastia, anal fissure, lump excision, adenotonsillectomy, and biopsies [12,13].

Pediatric day cases at the Nnamdi Azikiwe Teaching Hospital in Nnewi, inguinal hernia repair ranked highest followed by hydrocelectomies, while excision of mucous retention cyst was the least [14].

Nigeria is currently in an economic recession and most of the health care financing comes from out of pocket patient spending. Furthermore, salaries are often not paid and there is poor infrastructural development along with political instability. The concept of Day case surgery can go a long way in helping the situation. Hospitals and health care providers can streamline resources by reducing the length of hospital stays, decreasing morbidity and mortality, and provide more bed space for emergency services [15]. Moreover, because these are selected and planned surgical procedures and the patient returns home on the same day, in addition to cost savings, there is a lower incidence of serious post-operative morbidity such as fewer nosocomial infections, cross infection, pulmonary complications, and the risk for thrombo-embolism [16,17]. As mentioned above, patients return to work sooner and there is minimal disruption to their quality of life. Patient care becomes more personalized, the waiting time for treatment is diminished and hospital resources are better utilized [18]. In addition, there is a positive impact on staff morale as some health care professionals such as nursing staff may prefer to work during the day instead of night shift duty [19].

2. METHODOLOGY

2.1 Study Site

The study was carried out at Federal Medical Centre a specialized tertiary, 500-bed, resident teaching hospital [20] located in Owerri in South East Nigeria and is one of the highest ranked hospitals in the Federal Government's hospital system. The following specialty services are provided: General Surgery, Orthopedic Surgery, Pediatric Surgery, Urology, Pediatric Medicine, Internal Medicine, and Family Medicine among others.

2.2 Study Design

This was a hospital based cross sectional study of 138 Day case surgery patients between July 2007 and June 2008.

2.3 Inclusion Criteria

The criteria included all Day case surgery patients who gave informed written consent, resided within 30 km or less than a 30 minutes drive from the hospital, and whose haemoglobin was not less than 10 mg/dl. Patients were free from bleeding diathesis, were not immunosuppressed or on steroid therapy, and for those whose planned procedures were for not more than 1 hour.

2.4 Exclusion Criteria

Excluded from this study were Day case surgery patients who were scheduled for emergency procedures.

2.5 Sampling Technique

The participants who met the inclusion criteria for the study were consecutively enrolled between July 2007 and June 2008.

2.6 Methods of Data Collection and Analysis

Data was collected from the time of patient registration, during the clinical examination, and during collection of blood samples for laboratory study. The data generated was entered into Microsoft Excel 2016 and transported into Statistical Package for Social Sciences (SPSS) version 22.0 Inc. (Chicago, IL, USA). Results were presented as frequencies and percentages for categorical variables.

3. RESULTS AND DISCUSSION

3.1 Results

3.1.1 Demographic distribution

One hundred and thirty eight patients who met the inclusion criteria were entered into the study. The age distribution of the participants was from seven days of life to 83 years. Sixty four (64) patients were males and seventy four (74) were females (Table 1). The modal age group was represented by 17-40 age bracket, this represents 62 (44.4%) of the participants. The modal age group was between 17-40 years comprised of 62 patients of 44.9% of the patients.

Table 1. Socio-demographic distribution of participants

Gender	Frequency	Percentages
Male	64	46.4%
Female	74	53.6%
Total	138	100%
Age (Yr)	Frequency	Percentages
≤ 16	36	26.1%
17-40	62	44.9%
41-80	37	26.8%
>80	3	0.2%
Total	138	100

3.1.2 Participation by service

The specialties providing surgical services were General Surgery, Orthopedic Surgery, Pediatric Surgery, and Urology. General Surgery had the highest percentage of cases (62.3%) while Orthopedic Surgery had the lowest percentage (8.0%) (Table 2).

Table 2. Participation by specialty

Specialty	Frequency	Percentages
General Surgery	86	62.3%
Orthopedic Surgery	11	8.0%
Pediatric Surgery	27	19.6%
Urology	14	10.1%
Total	138	100

3.1.3 Procedures and numbers performed

The procedure most often performed was local lesion excision, 65 cases (47.1%) followed by excision biopsies, 28 cases (20.3%) Excisions

performed by the General Surgery service included: lymph nodes, dermoid cysts, ganglion removal, sebaceous cysts, keloid, lipoma, granuloma, rectal polyps and wedge resection of an ingrown toe nail. Other procedures performed included herniotomy, herniorrhaphy and hydrocelectomy at 10.9%, 4.3%, 3.6% respectively (Fig. 1).

There were 21 cases (15.2%) with reported complications including wound infection, wound hematoma formation, and bleeding (Table 3). However, only 3 cases (2.2%) required hospital admission and change to inpatient status.

Table 3. Complications/side effects

Complications	Frequency	Percentages
Wound infections	8	5.8
Wound hematoma	5	3.6
Bleeding	3	2.2
Stitch granuloma	1	.72
Wound seroma	1	.72
URTI	1	.72
UTI	1	.72
Wound dehiscence	1	.72
Total	21	15.2

URTI= Upper Respiratory Tract Infection,
UTI=Urinary Tract Infection

3.2 Discussion

Excision, excision biopsy and herniotomy were the most commonly performed procedures in our Center within the period under review. The biopsy rate of 20.3% was lower than 35% that was reported by Adewole et al. [21]. Lesion excisions remain the most common procedure performed as a Day case surgery in most Centers. This was immediately followed by excision biopsy procedures. Most of the DCS were undertaken by the Department of General Surgery with 62.3%. This was followed by Paediatric surgery with 19.6%. Orthopedic surgery underwent the least DCS with 8.0%. These rates were lower than those reported in

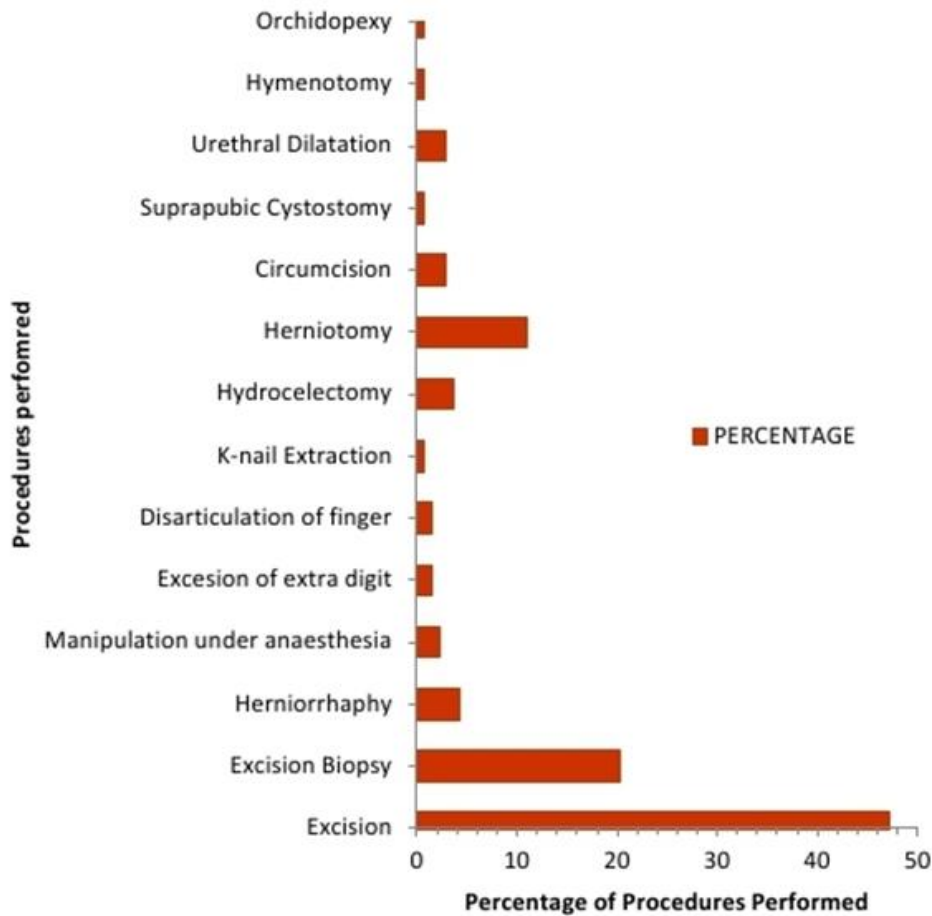


Fig. 1. Percentages of procedures performed

other parts of Nigeria. Abdur-Rahman et al. reported a rate of 68.03% in paediatric surgery [22,23]. There were only 3 cases that needed conversion from DCS to inpatients. This gave a DCS to inpatients conversion rate of 2.2%. The few cases that required admission were two excision biopsies and one orchidopexy. They were admitted due to secondary hemorrhage. Their hospital stay lasted between 2 to 5 days. The bleeding was controlled by re-exploration, re-suturing and firm application of a pressure dressing. Complications reported were primarily wound infection, wound hematoma and post-procedure bleeding (Table 3). The infections were mainly due to abscess formation and surgical incision site. Some of wound organisms isolated were *Staphylococcus aureus*, *Escherichia coli* and *Klebsiella* species. These infections developed between 3 to 7 postoperative days. A majority of the patients were not compliant with instructions. In our environment, we prescribe prophylactic antibiotics to prevent post operative infections. This is entirely different from presumptive use of antibiotics to treat early infections. These cases were not linked to DCS and could have occurred if they were in the hospital.

4. CONCLUSION

This study has established that:

- i) The most commonly performed DCS procedure in our Center is lesion excision (47.1%) followed by excision biopsy (20.3%).
- ii) The Department of General Surgery performed the majority of the DCS procedure (62.3%) followed by Pediatric Surgery (19.6%).
- iii) The study demonstrated a low DCS to inpatient conversion rate of 2.2% and with minimal complications/side effects including wound infection, wound haematoma, and bleeding.
- iv) Wound infection (5.8%) was the most commonly reported complication.
- v) DCS is safe and cost-effective.

5. RECOMMENDATIONS

The following recommendations are made based on the study:

- i) There is a need to establish a distinct and dedicated section of the hospital known as the Day Care Unit (DCU). This will also

include a Pre-anaesthesia Evaluation Clinic (PEC) where anesthesiologists can perform the pre-operative evaluation and assessment.

- ii) The underlying problem in establishing a DCS unit is lack of funding. Because DCS is cost-effective and allows for better resource allocation and utilization, hospitals should find sources of funding and allocate resources for DCS services.
- iii) The importance of a pre-anaesthesia evaluation clinic cannot be overemphasised. However, there is a paucity of anaesthesiologists for DCS. It is advised that pre-anesthesia assessment skills be taught all surgeons.
- iv) Adequate levels of qualified personnel and infrastructural development should be continuously monitored so the DCS unit can be sustained and improved. There is also a need for necessary technological investments to fully utilize day case practice.

CONSENT

All authors declare that written informed consent was obtained from the patient (or other approved parties) for publication of this paper.

ETHICAL APPROVAL

Ethical Clearance was granted by the Head of Clinical Services / Chairman, Ethical Committee, Federal Medical Centre, Owerri. All information shared during the research were strictly confidential and protected by the law of confidentiality. The identity, privacy, and confidentiality of all who consented to participate were protected. This Study was carried out in compliance with internationally accepted Legal and Ethical requirements in Human Research.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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