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Research Article

The feasibility and acceptability of day case surgery in secondary health facility in Nigeria

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KEYWORDS

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Abstract *Background:* There has been an increase in Day Case Surgery (DCS) worldwide. In Nigeria, this concept is now well established in most tertiary health institutions but has remained at low ebb at secondary health facilities. The aim of this prospective study was to document our experience as regards the feasibility and acceptability of this practice in our environment.
Method: This was a prospective study of patients treated as day cases between July, 2012 and June, 2014, at the State Specialist Hospital, Ikere-Ekiti, Nigeria.
Results: A total of 72 patients had 80 surgical procedures within the period. Their ages ranged between 1 and 86 years and the median age is 30.5 years. There were 48 males and 24 females giving a male: female ratio of 2:1. The surgeries performed were minor 34 (42.5%) and intermediate 46 (57.5%). Most (61.1%) were done under local anaesthesia. Pain was the commonest postoperative problem which subsided with analgesics in all cases. Complication rate was 6.3%. There was no mortality and none of the patient was readmitted. Majority of the patients (95.8%) were satisfied with their surgeries.
Conclusion: Day case surgery is feasible, safe and well accepted in our hospital. Other secondary health institutions are encouraged to imbibe the practice and reduce unnecessary hospital admissions in suitable patients.

1. Introduction

Interest in Day Case Surgery (DCS) and even the complexity of the procedures have increased worldwide in recent years with a wider range of patients now considered suitable under this concept. In UK over 50% and in USA and Canada, about 60% cases of elective surgeries are carried out as day cases [1]. Presently, the United Kingdom National Health Scheme (UK NHS) plan predicts that 75% of all elective surgeries will be performed as day cases [2]. Advancement in minimally invasive surgery is allowing more procedures to be performed as day cases, and even higher rate is adjudged feasible [2,3]. DCS is also rapidly growing in the developing countries of the world of which Nigeria is not an exemption. It is now a well established practice in most tertiary health institutions and surgical

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subspecialties with a high patient satisfaction and acceptability [4–9].

The trend is slowly spreading from tertiary care centres to secondary health facilities for various reasons including improved surgical and anaesthetic techniques, increased efficiency, high patient demands, convenience and cost-effectiveness [10–12]. Despite all the benefits, the traditional practice of ward admission for all even the most trivial surgical operations until patients are ambulant and self-reliant and sutures are removed is still very common practice in secondary health facility and the DCS has remained at low ebb [13]. Nevertheless, this prospective study was conducted to determine the feasibility and acceptability of DCS in our secondary health facility.

2. Patients and methods

This was a 2 year prospective study of 72 patients treated and followed-up as day cases in the department of surgery at State Specialist Hospital (SSH), a secondary health care facility in Ikere, Ekiti State, between July 2012 and June 2014. It has one general (Main) operating theatre with a suite and no dedicated day surgery ward. There are 16 surgical beds in the hospital. A consultant general Surgeon, two medical officers, two perioperative nurses, a locum nurse anaesthetist, who only came when needed and an orderly constituted the surgical workforce.

The patients were treated for minor and intermediate surgical problems that were hitherto managed on ward admissions. Approval for the study was obtained from the hospital's Ethical Clearance Committee while consent was either granted by each patient and/or guidance.

2.1. Inclusion criteria

All patients that were suitable for minor and intermediate surgical procedures and fell within the American Society of Anesthesiologists (ASA) category 1 and II were included.

2.2. Exclusion criteria

All patients below 1 year of age, those that required major surgical operations, those of ASA category III, IV, and V and patients who preferred admission (for sociocultural reasons) for their procedures were excluded from this series. Procedures such as incision and drainage of abscess and suturing of lacerations were carried out at the emergency department and therefore excluded.

Patients were assessed and selected for DCS having being considered eligible at the surgical out-patient (SOP) clinic by the team. Detailed explanations of the indicated procedure and what DCS entails were made known to the patients while they were asked to come early to the theatre on the day of surgery with a responsible adult (family member or guidance) who accompany them home after operation. Although in our hospital, there is no dedicated day case ward or theatre, patients present at the reception area where quick assessment including vital signs of the patients was done before surgery. After surgery patients were again observed at the theatre recovery room for an average of 1–3 h and discharged home after being certified fit for discharge by the surgical team. The patients and their responsible attendants were asked to contact the surgeon on phone, or if necessary, come to the hospital if any problem developed. Otherwise they were to come on the 4th postoperative day for wound inspection and change of dressing and on the 8th day for removal of stitches.

The procedures were either carried out under general anaesthesia with ketamine and face mask or local anaesthesia using 0.5% lidocaine injection.

The following data were collected: age, sex, availability of mobile phone, diagnosis, type of operation, operation time, anaesthesia, postoperative problems-immediately and during clinic visits, complications and patients' satisfaction. Data analysis was done using SPSS version 16.0. Patients were followed up for 6 months.

3. Results

A total of 72 patients had 80 surgical procedures during the study period. Their ages ranged between 1 and 86 years and the median age is 30.5 years. The age distribution of the patients is shown in Table 1. Males were 48 (66.7%) while the females were 24 (33.3%). Eighteen (25%) of the patients were between 1 and 15 years of age while the rest were older. Fifty-one (70.8%) patients live within 10 km distance of the hospital while the remaining patients who came from neighbouring towns and villages were living about 20–30 km from the hospital. Fifty-four (75%) patients had personal mobile phones while the remaining patients had relations with mobile phones by which they could easily communicate with the surgeon. However, only 4 patients (5.6%) made telephone calls for minor complaints before their postoperative day visits. Three of the patients had herniorrhaphy for giant inguinoscrotal hernia while one had orchidectomy.

ASA I and II included in the study were 60 (83.3%) and 12 (16.7%) respectively and the spectrum of surgical procedures performed is shown in Table 2. Different biopsy procedures accounted for 40% while herniotomy and herniorrhaphy were 32.5%. Three emergency orchidectomies (3.75%) and 8 (10%) orchidopexy were done for acute testicular torsion and congenital undescended testes respectively. The mean operation time was 30.64 ± 15.33 min. Local anaesthesia and general anaesthesia were used for 44 (61.1%) and 22 (30.6%) respectively. The remaining 6 patients (8.3%) who had prostatic biopsies and punch biopsy of rectal tumour did not require any anaesthesia. Patients stayed for an average of 1–3 h after surgery before they were discharged home and there was no conversion to admission cases in any of the patients.

Table 1 Age distribution of the patients.

Age (years)	Number	Percentage
1–10	15	20.8
11–20	10	13.8
21–30	11	15.3
31–40	7	9.7
41–50	9	12.5
51–60	4	5.6
61–70	9	12.5
71–80	2	2.8
81–90	5	6.9
Total	72	100.0

Table 2 Spectrum of surgical procedures.

Procedure	Frequency	Percentage
Biopsy		
• Incisional	1	1.25
• Excisional	25	31.25
• Trucut needle	5	6.25
• Punch	1	1.25
Herniotomy	14	17.5
Herniorrhaphy	12	15.0
Mayo repair	3	3.75
Hydrocelectomy	4	5.0
Orchidopexy/orchidectomy	11	13.75
Varicocelectomy	2	2.5
Zadek's operation	2	2.5
Total	80	100.0

Table 3 Postoperative problems.

	Immediate	Day 1	Day 4	Day 8
None	43	57	66	70
Pain	29	15	6	2
Nausea/vomiting	2	–	–	–
Headache	1	–	–	–
Weakness	1	–	–	–

Postoperative problems are shown in Table 3. Pain was the main complaint immediately after surgery and during follow-up visits, though in decreasing order of frequency. Assessment of the severity of the pain using a three-point verbal rating scale (VRS) is shown below (Table 4). Twenty-nine (40.3%) and 15 (20.8%) experienced varying degrees of pain immediately after procedure and first postoperative day. Only a patient (1.4%) had severe pain that necessitated intramuscular diclofenac injection before discharge. Other postoperative problems included vomiting, headache and body weakness.

Postoperative complications occurred in 5 (6.3%) procedures (Table 5). Wound infection rate was 3.8%. Two of the patients had emergency orchidectomies and the remaining one had herniorrhaphy under local anaesthesia. They were, however, superficial surgical site infections and managed with wound dressing and oral antibiotics on outpatient basis. Punch biopsy of rectal tumour was complicated by bleeding which however subsided before discharge. There was no readmission and no mortality recorded. When asked during the follow-up visits, 69 (95.8%) patients were satisfied with day case surgery and would prefer it another time if the need arises while only 3 (4.2%) would prefer short admission.

Table 4 Postoperative pain.

Score	Immediate	Day 1	Day 4	Day 8
No pain	43	57	66	70
Mild	16	10	5	2
Moderate	12	5	1	0
Severe	1	0	0	0

Table 5 Postoperative complications.

Complications	Number	Percentage
None	75	93.75
Wound haematoma	1	1.25
Wound infection	3	3.75
Bleeding	1	1.25
Total	80	100.0

4. Discussion

In our study, 32 (40%) biopsies were done of which excision biopsy, which was the commonest procedure performed, accounted for 31.3%. Agbakwuru [6] and Fadiora et al. [14] also reported excision biopsy as the commonest procedure in 29.8% and 40.5% respectively. Herniotomy and herniorrhaphy accounted for 17.5% and 15% respectively.

Eighteen (25%) procedures were performed in children between the ages of 1 and 15 years and these were done under General Anaesthesia (GA) using Ketamine administered by a nurse anaesthetist who only came on contract basis as there was no permanent nurse or physician anaesthetist in the hospital. This was responsible for the exclusion of infants in this study and underscores the severe shortage of the surgical workforce in low-income and resource-poor countries [15,16]. However, Abdur-Rahman [9] and Stiff et al. [10] concluded in their studies that paediatric day case surgery is feasible for well-selected cases, safe and well tolerated by infants and suitable for performance even in non-specialist centres with good team approach.

Three (3.8%) emergency orchidectomies were performed as day cases. This is still in keeping with what obtains in the developed world where patients presenting with acute conditions, such as appendicitis and cholecystitis, requiring urgent surgery can be effectively and efficiently treated via a semi-elective pathway [17,18]. Despite our limited medical facilities and inadequate surgical workforce, the scope of procedures is almost comparable with national and international studies [19].

The procedures lasted between 8 and 70 min and the mean duration of surgery was 30.64 ± 15.33 min. This conforms to the general guidelines and favours the practice [19].

Pain was the main postoperative problem encountered but this gradually subsided with time after taking prescribed analgesics and only 2 (2.8%) patients still had mild pain on the eighth postoperative day (Tables 3 and 4). However, only one reported severe pain that necessitated intramuscular diclofenac injection before discharge. This agrees with different studies which have shown postoperative pain to be the most reported problem and reason for hospital contact [6,8,14,20,21].

Postoperative complication rate of 5 (6.3%) was recorded of which wound infection was 3 (3.8%). The low complication rate in this study, absence of mortality, readmission and unplanned visits to the hospital within 30 days after surgery, were due to expertise and efficient teamwork, structured patient selection process and careful selection of minor and intermediate procedures. More than 80% of the surgeries were performed by the unit consultant. Our experience of DCS is

encouraging and this suggests that the practice is safe, even in resource poor settings.

The problem of distance or transportation did not arise as majority of the patients (70%) resided within 10 km radius of the hospital. All patients enjoyed home support from their relatives and other caregivers and this might have accounted for high satisfaction rate of 95.8% recorded, apart from the reduction in the cost of care when compared with in-patient admission as previously being practised. There was also no communication barrier with the hospital as 54 (75%) patients had their personal mobile phones while the parents and guardians of the remaining patients had phones. However, only 4 (5.6%) made calls for minor complaints that were resolved without any unplanned visit to the hospital.

Despite increasing growth and popularity of day case surgery in Nigeria, the practice still falls short of the ideal as its organization is mainly hospital integrated and based on general wards as currently practised in our setting. Only a few of the tertiary hospitals have a dedicated unit and day case ward [22,23]. An ideal day surgery unit is usually a self-contained apartment with separate admission suites, wards, theatre, recovery area and administrative facilities. This can either stand alone or within the main hospital and it is the type recommended because of its effectiveness and efficient service delivery. With better health policy and improvement in our health facilities, a dedicated day surgery unit is achievable.

5. Conclusion

The practice of DCS in secondary health facilities in both rural and semi-urban settings is feasible with patients screening and effective pre-operative preparation as these are fundamental to the safe delivery of this concept. Although, our health institutions are still deficient in both human and material resources, our experience in day surgery is encouraging with high patients' satisfaction and acceptability. Medical practitioners are enjoined to imbibe the practice in order to reduce the unnecessary hospital admissions with attendant high cost of care in suitable patients.

Conflict of interest

The authors declare that there are no conflicts of interest.

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