Audit of day case surgery in LAUTECH teaching hospital, Osogbo, Nigeria

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Abstract

Background/ method: A retrospective study of all patients operated as day-case at the Ladoke Akintola University Teaching Hospital Osogbo over a period of 14 months (October 2000 to November 2001) was carried out.

Results: Seventy-six patients were operated as day-cases within the study period, but 74 case notes (97.4%) were available for analysis. There were 46 males (62.2%) and 28 females (37.8%), giving a male: female ratio of 1.6:1. the age ranged between 11 and 70 years (mean 27.26 ± 23.89 years). The commonest procedure performed was excisional biopsy, which constituted 40.5% of all procedures; followed by herniorrhaphy, which accounted for 28.4%. Pain was the commonest immediate postoperative problem. This responded to analgesics like dipyrone, pentazocine and paracetamol. There were minimal postoperative complications at home and mortality was zero. None of the patients came for admission after surgery.

Conclusion: We concluded that day-case surgery is feasible, safe and acceptable to our patients; other hospitals are encouraged to undertake day-case surgery service.

Key words: Day case surgery, audit

Introduction

Day case surgery is fast gaining widespread acceptability worldwide. Despite the initial reluctance to embrace the program in Nigeria, several authors have reported successful outcome in series of minor and intermediate surgical procedures done as day cases. [1-5] Apart from the economic benefits, [5,6] which are quite relevant to our health care delivery at this period of low economic growth and poor health financing, there is the need to satisfy the surgical demands of our ever-increasing population. This unfortunately can hardly be met by the available in-patient facilities. Day case surgery therefore serves as a reasonable option

for an increasing number of procedures and a wide range of patients in our country today.

The aim of this study was to audit day case surgery practice in our hospital with the hope of assisting other new Teaching Hospitals in formulating policies for day case surgery.

Materials and methods

The case notes of all patients who were operated as day cases from October 2000 to November 2001 were reviewed. Patients' hospital numbers were sought from the theatre operation register and the case notes were subsequently retrieved from the medical records department. Information extracted included age, sex, diagnosis, surgical procedure, anaesthetic technique and postoperative complications. Also noted were the outcome of surgery, postoperative analgesia used and duration of follow-up.

The patients were seen in the surgical outpatient clinic by the consultant surgeons, where pre-operative assessments were made to establish the diagnoses and to determine their suitability for day case surgery from a medical and social standpoint. All elective minor and intermediate procedures were included based on the consideration that the procedure will only minimally affect the physiological state of the patient. Criteria for exclusion included: patients/parent's refusal, operations likely to significantly exceed one hour, American Society of Anaesthesiologists (ASA) classification >II, and if patients lived at a distance more than 1 hour drive from the hospital. Once found suitable the patients/parents were counseiled by the resident doctors on the type of operation and possibility of day case surgery. Instructions were given for preoperative fasting and the patients were told to report in the ward at 7:30am on the day of surgery.

Preoperative investigations included full blood count and genotype where relevant.

On the day of surgery the patient after reporting in the ward were transferred to the theatre waiting room, where they were seen and reassessed by the surgical residents and the attending anaesthetist.

None of the patients was premedicated. General anaesthesia was used in all paediatric patients while local, regional and general anaesthesia was used in adults as appropriate. Two patients had sedation with diazepam.

The patients were operated upon by the consultant surgeons or their residents. After surgery, the patients were taken to the recovery room where they were observed for periods ranging from 3 to 4 hours. Analgesics (dipyrone or pentazocine injections and oral paracetamol) were given for pains as required. The patients were later transferred to the ward where they were reviewed by the residents and reminded again to report promptly in the accident and emergency ward in case of any problem/complications. They were given outpatient appointment for follow-up and discharged home.

All patients were given oral paracetamol, 15mg/Kg body weight to be taken 6 hourly as "take home" for postoperative analgesia for 3-5 days depending on the magnitude of the surgery. Sutures were removed between 7^{th} and 10^{th} postoperative days.

Results

A total of 76 patients were operated on as day case within the 14 months study period. This constituted 69.2% of all elective surgical procedures performed within this period. Of this number, 74 case notes were available for analysis, giving a folder retrieval rate of 97.4%. There were 46 males (62.2%) and 28 females (37.8%), giving a M:F

ratio of 1.6.1. The age distribution of the patients is shown in table 1. The age ranged between 11 days and 70 years (mean age 27.26±23.89 years).

Thirteen procedures were performed on the 74 patients (table 2). The commonest procedure was excisional biopsy in 30 (40.5%) patients, herniorraphy in 21 (28.4%) patients and incisional biopsy in 6 (8.1%) patients. Forty (54.1%) of the patients were operated by consultants, while the remaining 34 patients (45.9%) were operated by resident doctors.

Most of the patients (82.4%) resided within Osogbo metropolis while the others came from towns and villages around Osogbo with distances from the hospital ranging from 12 to 15 kilometres (average 11 kilometres).

The surgeries were performed under local infiltration anaesthesia with lignocaine in 55 patients (74.3%), general anaesthesia with facemask in 12 patients (16.2%) and spinal anaesthesia with lignocaine in 2 patients (2.7%). Two patients (2.7%), one each for transrectal prostatic biopsy and proctosigmoidoscopy, were done under sedation with diazepam, while 3 patients (4.1%), two tongue tie release and one circumcision were done without any form of anaesthesia or sedation which is the usual practise in our centre. The duration of surgery ranged from 15-70 minutes with an average duration of 42.6 minutes. More than 95% of the patients had their procedures completed within 60 minutes (table 3).

Table 1: Age of 74 patients who had day case surgery

Age (yrs)	No. (%)
<1	3 (4.1)
1 – 10	3 (4.1)
11 – 20	14 (18.9)
21 – 30	12 (16.2)
31 – 40	13 (17.6)
41 –50	11 (14.9)
51 –60	12 (16.2)
61 – 70	6 (8.1)
Total	74 (100)

Table 2: Procedures performed on 74 patients

Minor	No.	%	Intermediate	No.	%
Excisional biopsy	30	40.5	Herniorraphy	21	28.4
Incisional biopsy	6	8.1	Herniotomy	3	4.1
Urethral bouginage	3	4.1	Orchidopexy	1	1.4
Circumcision	1	1.4	Varicocelectomy	2	2.7
Tongue tie (short frenulum)	2	2.7	Suprapubic cystostomy	2	2.7
			Refashioning of gastrostomy tube inpatient with oesophageal structure.	1	1.4
			Release of contracture in post burn fixed flexion deformity of right hand	1	
			Scrotal injury with evisceration of testis (primary repair)	1	1.4
Total	42	56.8		32	43.5

Table 3: Duration of procedures in 74 patients who had day case surgery

Duration (mins)	No. (%)
0-15	3 (4.1)
16-30	20 (27.0)
31-45	40 (54.1)
45-60	8 (10.8)
61-75	3 (4.1)

Pain was the commonest immediate postoperative problem. It occurred in the recovery room in all the patients. Pain control was achieved with dipyrone and pentazocine injections in 30 patients (40.5%) and 10 patients (13.5%) respectively, while the remaining 34 patients (46.0%) responded to oral paracetamol. Other recovery room problems experienced by the patients were vomiting in one patient, headache and prolonged drowsiness in 2 patients each. All these subsided before the patients were discharged from recovery room.

Postoperative complications occurred in 8 patients (10.8%). Two patients (2.7%) presented after 48 hours postoperatively with minimal haematoma collection. Their wounds were examined and redressed, following which they were reassured and discharged home immediately. Two patients (2.7%) had headache, which responded to paracetamol; neither of them had spinal anaesthesia for their surgical procedure. Four patients (5.4%) had postoperative wound infection, which was noticed after stitches removal. They all responded to antibiotics and daily dressings.

No patient required readmission and there was no mortality.

Discussion

The concept of the day case surgery is not new in the Western World. However, the practice has witnessed a dramatic growth within the last two decades, and increasing emphasis is now being placed on day case surgery. [7-9] Even in developing countries, the initial reluctance to the acceptance of day case surgery, predicated on the fear of inadequate community support resources for the success of the program, has given way to wide embrace and patient acceptability. [2,10-12] Several hospitals in Nigeria are now involved in providing day case surgery service for different age groups, ranging from the very young to the very old, and reports from different centres are encouraging. [1-5]

Although, LAUTECH Teaching Hospital is relatively young, the centre is also active in the provision of day case surgery service, albeit, for a limited range of procedures, as seen in this study. Day case surgery accounted for 69.2% of all elective surgical procedures performed within the study period. This is comparable to the figures reported in similar studies in Nigeria, [4,5] and is a reflection of the growing trend in the provision of day case surgery service. Also like in several previous reports in our environment, [1-6] most of the procedures were of minor and intermediate categories, which is compatible with the present level of awareness and limited social and medical support resources available within the communities. It is our believe that the only procedures that should be selected for day case surgeries are those that will cause minimal physiological disturbance, minimal postoperative pain and have little risk of haemorrhage to enhance safety and retain the confidence of our patients. These remain the criteria for selection of day-case surgery patients in our centre. However, with improvement in social services, better community awareness and home nursing support services, the cases are likely to become more diverse. Elsewhere in the developed world,

technological advances have revolutionized the number of operations permissible and day case surgery has really increased both in volume and diversity. [13]

Anticipated duration of procedures is also an important consideration in selection of patients in our centre. We often limit our selection to procedures that would not take more than 60 minutes to complete, especially in children. This is because even with modern anaesthetic agents, prolonged general anaesthesia is associated with prolonged recovery and complications like nausea and vomiting. [9]. These complications may be a source of considerable anxiety and distress to patients at home and may result in increased re-admission rate. The procedures were completed within 60 minutes in more than 95% in our patients. This agrees with the practice in many centres, [2,10] and it probably accounted for the low complication rate experienced in our series.

The essential requirements of a suitable anaesthetic technique for day-case surgery include safety, rapid recovery and minimal postoperative problems. Although with modern general anaesthetic agents, recovery after surgery can be both rapid and complete; regional anaesthesia offers distinct advantages in day-case surgery. For instance there is reduction in hazards and discomforts which follow general anaesthesia such as sore throat, airway trauma and muscle pain, and there is less tendency to nausea or vomiting, resulting in faster patient discharge. In addition the residual analgesia from the block may protect the patient from the initial pain postoperatively. However the role of central neural blockade remains controversial. [14] The issue of post-dural puncture headache is frequently raised, especially, with respect to spinal Anaesthesia. [15] Fortunately the introduction of small gauge conical-tipped needles that result in less dural trauma has significantly reduced the incidence of post –spinal headache. [14] Today, spinal anaesthesia is widely used in Europe, and is the most commonly used central block for day-case surgery. [14, 16] Lignocaine (either hyperbaric 5% or isobaric 2%), which is a short acting local anaesthetic agent is commonly used as done in this study to avoid delayed patient recovery. The risk of major neurological complications is very small and the incidence of postspinal headache in ambulatory surgery has been found to be comparable to the incidence of headache following general anaesthesia. [15] However we suggest that clear instructions are given to day-care surgery patients who have had spinal anaesthesia. Headache when they occur usually respond to conservative therapy consisting of rest, liberal oral fluid and mild analgesics. Severe cases, which are not common may require epidural blood patch. Only two of our patients had spinal anaesthesia because of lack of experienced physician anaesthetists to administer the block for the most part of the period covered by the study. It is for the same reason that appropriate regional anaesthesia could not be provided for circumcision and tongue-tie release, which were therefore done without any form of anaesthesia.

In conformity with previous reports, [2,3] pain was the commonest problem experienced in the immediate postoperative period. This is probably a reflection of the extent to which pain has remained an unresolved problem in surgical practice. It is particularly not surprising that virtually all the patients in our series experienced some degree of pain in the recovery room. Pain is a common feature in the recovery room when the anaesthetic procedure lacks good residual analgesic effects; Lignocaine, the local anaesthetic agent used for infiltration and regional blocks in our series is such a short acting drug, besides none of those who had general anaesthesia was given intraoperative

analgesic supplementation. These side effects are undesirable in day case procedures. We however recognize that there are analgesic drugs and techniques, which could be used intraoperatively to enhance perioperative analgesia with minimal effects on the patient's fitness for discharge. For instance the use of potent short acting narcotics like alfentanil and fentanyl has been found useful and safe for perioperative analgesia in day-case anaesthesia. However the appropriate use of these drugs either intraoperatively or in the recovery room requires the expertise of experienced physician anaesthetists who were not available in our centre.

Paracetamol administered either orally or rectally has been shown to be a simple and safe method of controlling less severe forms of pain. [17] A total dose of 60mg/Kg/day of oral paracetamol given in four-divided doses was used in our patients for postoperative analgesia at home. This dose is small compared to the current regime, which recommends a loading dose of 30-40mg/Kg, followed by regular dosing of up to 90mg/Kg/day to maintain therapeutic concentrations. [17.] Although none of our patients reported back to the hospital or sought other medical treatment as a result of intolerable pain, it is not unlikely that some of them, especially those who had intermediate surgical procedures may have had to bear some considerable amount of discomfort at home. Most patients have accepted pain as an inevitable consequence of surgery, which they are often prepared to accommodate. [18] Hence they often complain less, limiting them to the prescribed medication. It must however be emphasized that the provision of adequate analgesia for day-case patients in the postoperative period is an area that needs to be improved in order to enhance the comfort of our patients. The practice of local anaesthetic infiltration of wound edges is popular and the pre-emptive use of non-steroidal anti-inflammatory analgesics has also been found useful for pain control in the immediate postoperative period. [19] These methods are now being used to enhance perioperative analgesia in our patients.

The complication rate of 10.8% in our series is comparable with figures quoted in previous reports. [2,19] There were no mortality in this series and the unplanned admission rate, which is an indication of failure of day case surgery, was zero. Furthermore, no morbidity has been recorded in any of these patients up till the time of this review.

In conclusion, day case surgery is feasible, safe and applicable to our health care system. Despite the inadequate community support resources like transportation, telecommunication and home nursing services, the result from various health institutions, including a relatively young teaching hospital like ours, are encouraging. We hope that this report would encourage other young teaching hospitals and Federal Medical Centres to establish functioning day case surgery units.

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