

Intraoperative Deaths at Ahmadu Bello University Teaching Hospital, Kaduna: A 2-Year Experience

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ABSTRACT

Background: The care of patients undergoing surgery should accomplish a good reduction in mortality and morbidity from surgery and anaesthesia.

Methods: A retrospective study of cases of intra-operative deaths at Ahmadu Bello University Teaching Hospital (ABUTH) Kaduna, Nigeria in a 2-year period.

Result: Two thousand, four hundred and sixty - five (2,465) operations were performed in the main operating theatre of the hospital, shared by departments of surgery, obstetric and gynaecology (OG) and maxillo-facial surgery (MFU). Nine cases of intraoperative deaths were recorded. Most of the deaths occurred among the gravely ill, inadequately prepared patients and patients whose operations were done in the late hours of the night.

Conclusion: This tragedy is preventable by paying meticulous attention to details and careful patient selection and care.

KEY WORDS: Intraoperative death, prevention

Introduction

The care of patients undergoing surgery is to accomplish a good reduction in mortality and morbidity from the surgery and general anaesthesia.¹ The beneficial effects of a surgical procedure are inversely proportional to the enormity of the surgical procedure.² There is, therefore a great need for patients' selection whereby the relative

benefits from a given operation is balanced against the potential risks and complications. Death on the operating table is a tragedy that is best avoided.

Materials and Methods

The surgical records of all patients who died in the main operating theatre of Ahmadu Bello University Teaching

Hospital, Kaduna, between July 1st 1998 and June 30th 2000 were retrieved and reviewed. A total of nine such patients from surgery, obstetrics and gynaecology (OG) and maxillofacial surgery (MFU) departments were recorded to have died intraoperatively during the 2-year period. The operation notes, anaesthetic charts and records, and the clinical notes of the patients have been reviewed. During the same period, a total of 2,465 operations were performed in this operating theatre.

Results

Surgery department performed 873 procedures, OG 1,399 operations and MFU 193 operations. Of the 9 intraoperative deaths, 4 each were from surgery and OG and one from MFU department. Four were elective cases and five emergencies. In all cases except one, the highest-ranking surgeon in attendance was a consultant. All cases were done under general anaesthesia; six were females and three males. Nurse anaesthetists anaesthetised seven of those patients, one by a senior registrar in anaesthesia and one by a consultant anaesthetist. All the emergency cases were done during the late hours of the night. One patient had associated medical problem but in the other patients there was no documentation of a previous medical conditions. Most of these patients were not adequately prepared for surgery (Table 1).

Discussion

The care of patients undergoing surgical procedures is intended to achieve four main objectives; mortality and morbidity

reduction from surgery and anaesthesia; safety of the patient and staff during the conduct of the operation; pain relief and smooth convalescent and early rehabilitation.¹⁻³ The natural history of the untreated condition must be known, as the urgency of a specific procedure partly a function of the relative risks and rewards. One should objectively weigh up the chances of survival of patients beyond the postoperative period and delineate those whose deaths are inevitable and imminent. Various studies have found that the incidences of intraoperative deaths vary from 0.26 to 3.7%.⁴⁻⁷ In a report on perioperative deaths from Singapore,⁴ Lau found that intraoperative deaths constituted 8.3% of all perioperative deaths, with a male to female ratio of 1.36:1, and that cardiothoracic surgery accounted for such deaths. Reilley et al⁶ found that most of the on-table deaths were related to haemorrhage and complications such as injury to the spleen, aorta or the adrenal gland. Mckenzie⁷ in 1996 reporting from a Zimbabwean Teaching Hospital found that out of 34,553 surgeries performed, there were 89 deaths; and that causes of deaths were avoidable in 45 patients (51%). Of the avoidable causes, surgery accounted for 0.8%, anaesthesia (0.33%) and administrative (0.21%). The commonest factors of avoidable deaths were haemorrhage, poor preoperative management and anastomotic dehiscence. That report concluded that it was possible to reduce perioperative mortality by developing preventive measures.

In the present report, we have been able to identify some of the causal factors leading to the high intraoperative death rate of 0.37%. This is less than what obtains at some

Table 1: Medical Statistics of the Nine Intraoperative Deaths

Age/Sex	Diagnosis	Operation	Anaesthesia and ASA	Most Senior Anaesthetist	Most Senior Surgeon	Remarks
4yrs/M	Bilateral genu vara	Bilateral wedge osteo-tomy	GA/ASAII	Registrar	Consultant	. Wrong intubations . Surgeon noticed dark blood . Resuscitation failed . Operation abandoned
18yrs/M	Subdural haematoma	Burr hole	GA /ASA IIIE	Consultant	Consultant	. GCS =5 . Right hemiparesis . Operation performed at 3.00am . Inadequate urinary output
44yrs/F	Ruptured uterus	TAH	GA/ASA IIIE	Nurse	Consultant	. Para 9 ¹¹ . Surgery done 3 rd day at 2.00am . Inadequate urinary output . >24hrs on induction of labour
43yrs/ F	Retrosternal goitre	Subtotal Thyroidectomy	GA/ASA IIIE	Nurse	Consultant	. Retrosternal goitre . Difficult intubations
41yrs/F	Cerv-ical dysplasia	TAH	GA/ASAII	Nurse	Consultant	. Preoperative BP 170/100mmHg . Total abdominal hysterectomy
50yrs/F	Ruptured Pancreatic cyst	Cystogast-rostomy	GA/ASA IIIE	Nurse	Consultant	. Ruptured pancreatic cyst . Inadequate fluid . Inadequate urinary output . Surgery at 11.00pm
39yrs/F	Ruptured uterus	TAH	GA/ASA IIIE	Nurse	Consultant	. Operation done at night . Delayed surgery (>48hrs) . Inadequate fluid
35yrs/M	Ameloblastoma	Excision	GA/ASAIII	Nurse	Consultant	Difficult intubation Inadequate preoperative preparation
35yrs/F	Placenta praevia	ELSCS	GA/ASAIIIE	Nurse	Consultant	. Inadequate urine output . Anaemia

GA- General anaesthesia, ASA- American Society of Anaesthesiologist

F- Female, M- Male, HBP-High Blood Pressure, GCS-Glasgow Coma Score,

TAH- Total Abdominal Hysterectomy, ELSCS- Emergency Lower Segment Caesarean Section

Centres.⁴⁻⁷ It is believed that suitable corrections of the causal factors will reduce the rate of intraoperative deaths in the centre. Some of these problems are; inadequate resuscitation with fluids, blood and correction of electrolytes before surgery; delay in operating on the patients; and operating at late hours of the night. Other causes include inadequately trained personnel, especially anaesthetist; inadequate diagnosis and under utilization of intensive therapy unit. These lead to poor patient selections and inadequate care for severely injured patients in terms of resuscitations before surgery. Some of the surgeons operated for conditions for which they were not trained and some performed operations outside their primary field of expertise.

Corrections of these factors should reduce the rate of intraoperative deaths at the centre. It is recommended that at least one fully equipped theatre must be kept available to deal with emergencies. This will prevent the act of operating late at nights and the rush to 'fix' inadequately prepared patients for surgery. It is important to note that optimal results of corrective surgery are obtainable at first attempt at correction; situations where a surgeon who does not have the necessary experience is prepared 'to have a go' should not arise. The junior anaesthetists should seek the assistance of seniors when taking cases. There must be establishments of local guidelines or policies in each hospital for surgery and anaesthesia departments as regards preoperative management of patients. Inadequately resuscitated, moribund and terminally ill patients should not be operated on except the procedures will improve their conditions. Although the decision not to operate is difficult, humanity suggests that patients who are terminally ill or moribund should have

only life saving procedures done in distress; otherwise the patient should be allowed to die in peace and dignity. Adequate staffing and regular audit meetings should be conducted to improve the quality of health care delivery. The decision not to operate should be a combined one between the anaesthetist and the surgeon. Where possible other methods of anaesthesia apart from general anaesthesia should be employed.

In conclusion, the fear of death on the operating table should not reduce our appreciation of patient's sufferings. Let us not take the words 'careful selection' to mean rejection of patients for operations because of the presence of risk factors that could adversely affect the overall results of a given personal experience. The prime consideration is patients' welfare. All efforts should be targeted to reducing theatre deaths.

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