QUALITY OF CARE OF PATIENTS UNDERGOING CATARACT SURGERY UNDER LOCAL ANAESTHESIA

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SUMMARY
The vital importance of patient care and monitoring during anaesthesia is well recognized. The Royal College of Anaesthetists and the Royal College of Ophthalmologists published guidelines on the standard and care of the patients undergoing routine cataract extraction under local anaesthesia but there is no information available on the implementation of these guidelines. A retrospective audit was conducted in North Riding Infirmary, Middlesbrough, United Kingdom to assess the extent to which these guidelines were followed. The results of this audit show that the quality of care of these patients was sub-optimal and the guidelines were largely ignored. Measures should be taken to improve the standard of care.

Keywords: Standard care, cataract surgery, local anaesthesia.

INTRODUCTION
In the past, major eye surgery in United Kingdom (UK) was usually performed under general anaesthesia, although local anaesthesia has been gaining popularity over recent years. The commonest local anaesthetics blocks performed on patients undergoing cataract and glaucoma surgery are the retrobulbar and peribulbar techniques. Concern has been expressed about such operations being performed in the absence of an anaesthetist, as the potential for complications of local anaesthesia cannot be ignored. The problems, which can occur during local anaesthesia, include vasovagal collapse, marked fluctuations in pulse and blood pressure, myocardial infarction and cerebrovascular accident. Other difficulties with local anaesthesia that may arise include overdose, intravascular injection or central spread of the agent. There are complications related to differing techniques of local blocks. If sedation is used this may cause complications; for instance patients with pre-existing respiratory problems are particularly susceptible to episodes of hypoxia or hypercarbia when under surgical drapes. Therefore, proper care and monitoring of these patients are required. In 1993, the Royal College of Anaesthetists and the College of Ophthalmologists published recommendations for standard of care and monitoring during local anaesthesia.

The guidelines suggest that a full history and examination, including measurement of blood pressure and urine analysis, should be performed in all cases.

Special investigations, which should only be ordered when indicated include:
ECG – for patients over 60 and those with symptoms or signs of cardiovascular disease, including ischaemic heart disease or hypertension; Chest X-ray – for patients with history or signs of chronic lung disease or any suggestion of malignancy or pulmonary tuberculosis; Urea, creatinine and electrolytes should be performed on all patients over 60, those with renal disease, and those taking cardiac, renal or steroid drugs; Blood sugar estimation for all diabetics and patients on steroids.

Haemoglobin in all women, men over 60 and those with signs of anaemia.

Monitoring should in addition to verbal contact, include pulse oximetry, ECG and blood pressure measurements.

Intravenous access should always be obtained. An anaesthetist should be present in the operating department.

The aim of this audit was to assess the standard of care received and to determine the extent to which the guidelines of the Royal College of Anaesthetists and the College of Ophthalmologists were followed.

METHODS
After obtaining Local Ethical Committee permission, the hospital case notes of patients who had undergone cataract surgery under local anaesthesia...
in the ophthalmic theatre at North Riding Infirmary, Middlesbrough, UK over a two-month period (January and February 1996) were examined. The North Riding Infirmary is a specialized ophthalmic unit and is approximately 2 miles from the main hospital. It has two dedicated ophthalmic theatres and 16 elective lists are conducted each week. The surgical staff consist of 5 consultants, 1 associate specialist, 1 senior registrar and 1 registrar. Anaesthetists provide anaesthetic services with an interest in ophthalmic anaesthesia. The routine lists are serviced by 6 consultants, 2 associate specialists and 1 staff grade anaesthetist. Senior registrars and registrar as are given the responsibility to service these lists when they have performed enough blocks to be judged competent by the supervising consultants.

Each patient’s demographic details was noted. Case notes including a full medical history and clinical examination were checked for completeness. A note was made of the preoperative blood pressure. Intercurrent medical disease and drug therapy were recorded. The types of investigations requested and results were noted. If the result of an investigation requested was not present in the case notes, an attempt was made to verify the results from the pathology laboratory database. The instrumental monitoring used in the anaesthetic room and theatre was noted from the anaesthetic record and these entries were verified from the nursing care plan record. Intravenous access, grade and speciality of person who performed the block, verbal contact with the patients during the surgical procedure and the presence of anaesthetist in the theatre were recorded. The data was collected on a specially designed form, which was later transferred into a computer database for analysis.

RESULTS
In all, 296 patients were admitted for elective cataract surgery during the study period and 70% (206) of these patients had surgery done under local anaesthesia. During the study period, 202 hospital case notes were available for analysis. The number of patients, sex and age range are shown in figure 1. Eighty Nine percent of the total number of patients were above 60 years, with a higher proportion of females (female: male, 116:86).

All the patients included in this study had their full medical history taken and the findings of clinical examination including preoperative blood pressure were recorded in their case notes. Majority of patients suffered from one or more systemic diseases and the details are shown are shown in figure 2.

![Figure 1: Demographic details: Age distribution of patients who had elective cataract surgery under local anaesthesia.](image)

![Figure 2: Patients with systemic diseases.](image)

None of the patients had had urine analysis. Blood tests and ECG were performed in all cases where indicated. Four patients of those who suffered from pulmonary disease did not have chest X-ray but surgery was performed without any ill effects on all cases studied.

Mainly consultant and staff anaesthetists who had regular commitments in the ophthalmic units performed the blocks (retrobulbar and peribulbar) and grades are shown in figure 3.

![Figure 3: Grades of anaesthetist/surgeon who performed local blocks for cataract extraction.](image)
The routine lists were serviced by anaesthetists except two lists during which the block was performed by ophthalmologist (12 cases) without an anaesthetist being present in the operating department. The number of blocks performed by ophthalmologists is too small to come to any conclusion but nevertheless they were performed in the absence of anaesthetists in the operating department, without securing intravenous access and no other monitoring except pulse oximetry.

Intravenous line was not secured in 12% of cases (anaesthetists 18 and ophthalmologists 6 cases). There was no difference between anaesthetic room and theatre monitoring. All the patients had pulse oximetry and 93% had ECG monitored (figure 4). The blood pressure was not monitored in 66% of patients and all grades of anaesthetists were responsible for this omission (figure 5).

All the patients had verbal contact with someone during the surgery.

**DISCUSSION**

The preoperative evaluation of all patients undergoing major surgery, whether local or general anaesthesia is important. Biochemical investigations are carried out before a surgical operation because 1. a patient's condition indicates the need and 2. to detect clinically apparent abnormalities that may affect surgical and anaesthetic management. However, routine preoperative biochemical screening has been questioned because unsuspected abnormalities were found only in <1% of cases. These few abnormalities are said to make no difference to the management, are uninformative and have little influence on the decision-making. This view is particularly attractive in the present climate of financial constraints particularly when patients are undergoing routine in the surface surgery like cataract extraction under local anaesthesia. Members of the Joint Working Party who were selected from various specialities had analysed all the evidences for and against such biochemical tests and the guidelines were prepared accordingly. Our results suggest that the local ophthalmic unit has largely implemented the suggested guidelines for investigations but routine urine analysis was not performed in any of the cases. The local hospital's view is that the routine urine analysis is of very little value particularly when full biochemical blood tests are being carried out. However, the value of routine urine testing should not be ignored in diagnosing or discovering asymptomatic diseases. There were unnecessary biochemical investigations performed in 11% of patients who were <60 years of age and asymptomatic. On the contrary, four patients with pulmonary diseases did not have chest X-ray and no reasons could be found in the case notes.

Much has been written on the subject of patient monitoring and fairly clear guidelines are now available on acceptable standards for a large variety of operations and conditions whether under general or regional anaesthesia. Although the value of monitoring during general or local anaesthesia and major surgery is now a routine, these guidelines are likely to be ignored when local anaesthetic techniques are performed for cataract surgery. Our results confirm this view. Although all the patients were monitored for oxygen saturation, 7% of patients did not have their ECGs monitored. Intraoperative blood pressure measurement was not recorded in a majority of patients (64%). This discrepancy in blood pressure recording might be due to the non-availability of equipment, deliberate omission or to avoid discomfort to the patient due to frequent inflation of blood pressure cuff in
awake patients and most anaesthetists agreed when questioned that they have later view.

Although the audit was originally planned for prospective data collection, as soon as the data collections began, it was noted that the clinicians had become vigilant and the results were likely to be biased. It was therefore decided to conduct the audit retrospectively, as this was more likely to give unbiased results. We are confident that these figures collected over period of two months are not enough but nevertheless reflect the usual practice. The data obtained from the anaesthetic notes were also verified with the entries in the case notes made in the nursing care plan. The limitation of this audit results is that the data may not represent the practices in other centers.

CONCLUSION
The results of this audit show that the quality of care of patients undergoing cataract extraction under local anaesthesia is sub-optimal. Future revision of practice guidelines will need to consider the deficiencies highlighted in this audit report until such time every efforts should be made to follow the recommended guidelines.

REFERENCES


