Minia University  
Faculty of Medicine  
Anesthesia Department

<table>
<thead>
<tr>
<th>Department</th>
<th>Anesthesia Department</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subject</td>
<td>Guidelines for day case surgery</td>
</tr>
</tbody>
</table>
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PROTOCOL
GUIDELINES FOR DAY CASE SURGERY

Introduction
About 75% of elective surgery being performed as day cases. In pediatrics, the European Charter of Children’s Rights states ‘Children should be admitted to hospital only if the care they require cannot be equally well provided at home or on a day basis’. This means that this will form a high proportion of the work of most Departments of Anesthesia. The assessment criteria should relate to the patient’s health as found at pre-assessment and not limited by arbitrary limits such as ASA status or age. Good quality advice leaflets, assessment forms and protocols are in use in many centers and are available to other units. Every day surgery unit should have representation at Trust Board level.

Some fundamental principles of day care:
• Patients should be selected according to their physiological status not their age.
• Fitness for a procedure should relate to the patient’s health as found at pre-assessment and not limited by arbitrary limits such as ASA status.
• Obesity is not an absolute contraindication for day care in expert hands and with appropriate resources.

Selection of Patients
There are various routes for referral to day surgery: from hospital outpatient clinics, from accident and emergency departments, from Professionals Allied to Medicine and direct from general practice. The exact mode of referral is unimportant as long as all adhere to agreed protocols of patient assessment. There are no absolute criteria of fitness for day surgery; however, it is important that the criteria are agreed locally with the Department of Anesthesia. The assessment falls into two main categories: Social and Medical factors.

(i) Social Factors:
- The patient must be willing to undergo surgery on a day-case basis.
- Following most procedures, there should be a responsible adult, able and willing to care for the patient at home for at least the first 24 hours postoperatively.
- Patients or their careers should have easy access to a telephone.
- The patient’s home situation should be compatible with postoperative care, with satisfactory standards of heating and lighting, together with adequate kitchen, bathroom and toilet facilities.

(ii) Medical Factors:
- The patient or his/her immediate career must understand the planned procedure and subsequent postoperative care and be willing to accept responsibility for providing further supervision of the patient.
- The patient should be either fully fit or any chronic disease, such as diabetes, asthma, hypertension or epilepsy, should be controlled.

All patients should be seen in advance of their surgery by someone trained in pre-assessment for day surgery. Consultant led, nurse run pre-assessment clinics provide a suitable method to attain this; it is agreed that trained nurses are more effective than newly-trained doctors at such work. However such clinics afford an excellent opportunity for training of medical students and trainee doctors. Preassessment is also an important time to start educating the patient (and their careers) about their operation and postoperative care.

Arrangements should be put in place for all appropriate tests (e.g. blood tests, ECG and X-ray referrals) to be carried out at the time of the pre-assessment. There must also be a mechanism in place to review all investigations undertaken.

Some fundamental principles of day care:
- Admission time from 08:00 – 14:00.
- Patients should be selected according to their physiological status not their age.
- Fitness for a procedure should relate to the patient’s health as found at pre-assessment and not limited by arbitrary limits such as ASA status.
- Obesity is not an absolute contraindication for day care in expert hands and with appropriate resources.

Factors affecting choice of patients:
- Patients should be ASA (American Society of Anesthesiologists) grade I or II. Exceptionally ASA grade III, will controlled patients, may be accepted after discussion with anesthesia consultant.
- Children, (who should be over six months of age), must be accompanied by parents/guardians at all relevant times.
- Patients should reside within easy access to the surgical facility.

**Types of surgery can be done in a day stay setting:**
- Day stay anesthesia and surgery can be performed provided there is satisfactory control of symptoms postoperatively, and the ability to drink and eat within a reasonable time after the completion of surgery.
- Pain, nausea and vomiting must be controlled, and preferably the patient should be able to mobilize to some extent. It would appear at first sight that full mobilization is essential but this is a relative factor e.g. if the patient is wheelchair-bound and their home can facilitate such ‘mobilization’ then day stay should not be precluded.

**Range of day case procedures:**

**Medical:**
- Venesection.
- Radiotherapy.
- Interventional radiology.
- Interventional cardiology.
- Bone marrow sampling.
- Needle aspiration cytology.
- Intrathecal injection.

**Diagnostic:**
- Endoscopies.
- Biopsies (e.g. skin, muscle, lymph node).
- Examination under anesthesia.
- Arthroscopy.

**Surgical**
- General surgery: e.g. herniotomy, hydrocele.
- Urology: e.g. circumcision, cystoscopy.
- ENT: e.g. myringotomy.
- Dental: e.g. extractions.
- Ophthalmology: e.g. squint, cataract, glaucoma and lid surgery.
- Orthopedic: e.g. change of plaster cast, repair of wounds.
- Plastic surgery: e.g. prominent ear surgery.
- Others

Exclusion criteria for day case surgery

**Anesthetic and surgical factors:**
- Prolonged surgery and anesthesia.
- Junior unsupervised staff.
- Opening of body cavities.
- Significant risk of hemorrhage.
- Significant body fluid loss requiring replacement.
- Prolonged significant postoperative pain.
- Difficult airway.
- Sleep apnea.
- History of malignant hyperthermia.

**Medical factors:**
- Poorly controlled systemic disease: e.g. hypertension, CAD, asthma, epilepsy.
- Uninvestigated heart problem.
- Metabolic disorders.
- Diabetic mellitus.
- Hemoglobinopathy.
- Active infection.
- Age factor: e.g. extremes of age.

**Documentation:**

Information documents should describe the day care process. Documents should outline the pre-operative preparation, including individual hospitals’ fasting regimens, what patients should wear and bring to the hospital on the day, what to expect postoperatively and how to
communicate with those involved in their care. All involved in the patient’s care should agree about the information in such packages.

**Management and Staffing:**

Each unit should have a Clinical Lead or Director who has a specific interest in day case surgery and who will lead the development of local policies, guidelines and Clinical Governance in this area. A consultant anesthetist with management experience is ideally suited to such a post. This individual should have adequate time allocated in their job-plan for this responsibility. Each unit also requires adequate staffing led by a senior nurse who provides the day-to-day administration of the unit in liaison with the Director.

The senior nurse in charge of the day surgery unit should be expected to spend the majority of their time within the unit. Hands-on activity by senior staff members ensures a valid understanding of any problems that can emerge in day-to-day practice and will enable these to be more speedily rectified. The staffing levels will depend on the design of the facility and the work undertaken, as well as local preferences. The unit must have reception staff of high quality as well as its own nursing and ODP personnel. The staff must be specifically allocated and trained in day surgery.

Each unit should have an operational group which should oversee the day-to-day running of the unit. This may include representatives from anesthesia, surgery, hospital nursing, community nursing, general practice, pharmacy, management, finance, audit, and ancillary care.

**Facilities**

Care should be provided in a facility that is set aside for day surgery. Ideally this should be purpose-built. Alternatively day surgery should be practiced in a dedicated area within the hospital. Simple, rapid and effective exchange of information between hospital and community personnel must be possible. Information technology must be provided so that adequate audit of all aspects of patient care can take place.

Many hospitals will be providing care for day patients, who require anesthesia, in specialized units e.g. ophthalmology, dentistry, psychiatry, accident and emergency. It may not be appropriate to centralize these services into one unit but all such patients must receive the same high standards of selection, preparation, perioperative care, discharge and follow-up.
Children experiencing day surgical care require all the facilities and staffing that would be expected in any pediatric unit. Those who practice day surgery for adults and children in the same unit must ensure that their unit meets the guidelines outlined in Caring for

**Anesthetic Management**

Day surgery anesthesia should be a consultant-led service. However, as ultimately 75% or more of all elective surgery may be taking place in day surgery. Once a patient has been selected and fully prepared for day surgery, decisions must be made for their anesthetic management. Each anesthetist should develop techniques which permit the patient to undergo the surgical procedure with minimum stress, maximum comfort. Analgesia is paramount and must be long-lasting but morbidity, such as nausea and vomiting, must be minimized. For certain procedures (e.g. laparoscopic cholecystectomy), there is evidence that following a standard anesthesia and analgesia plan minimizes morbidity and increases the number of patients who are able to be discharged. Anesthetists should adhere to such clinical guidelines where they exist.

**Pre-anesthesia assessment:**
- Every patient must have a pre-anesthetic assessment by an anesthesiologist, preferably by the one who will administer the anesthetic.
- This assessment may be made in a hospital, clinic or in the day case centre.
- The consultation should take place at an appropriate time before anesthesia and surgery, to allow for adequate consideration of the many factors involved.
- The pre-anesthetic consultation should include identification of patient.
- When appropriate, the results of investigations, e.g. chest X-ray, ECG, serum electrolyte and urea concentrations, and urinalysis, must be available to the assessing anesthesiologist.
- Acceptance for day case anesthesia should be refused if the patient is unfit, appropriate medical information is lacking or the likelihood of complications is high.

**Preoperative instructions:**
- The instructions should be prepared to advise the patient/guardian of details about fasting time, reporting time and admission procedures.
- In the case of a minor, a parent/guardian must accompany the patient to elaborate, if necessary, on the medical history, and provide assistance, if required during induction and/or recovery.
- Signed consent for the proposed procedure must be obtained from the patient or guardian and a preoperative leaflet discussed and handed out.
- The ordering of pre-medication if considered necessary.
- Fasting rules:
  - 6 hours for solids, milk or milky drinks.
  - For pediatrics:
    - 6 hours for solids, and milk.
    - 4 hours for breast-fed infants.
    - 2-3 hours for clear fluids including fruit juices and water.

**Guidelines on providing information about anesthesia:**

A person is entitled to know the implications of an anesthetic before it is administered, and to seek clarification of any issues, which may be of concern. The person must be free to accept or reject advice.

**(i) Principles:**
- Information should be provided in such a way that the particular patient is able to appreciate broadly what the anesthetic involves.
- Where real alternatives exist, anesthetic options should be outlined, with their advantages and disadvantages.
- Information should be provided during the pre-anesthetic consultation.
- Information should be communicated in a form the patient is likely to understand.
- Questions should be encouraged and answered clearly.
- Where the patient clearly does not wish for further information and states this wish, the anesthesiologist should record this fact in the notes and should not force further information upon the patient.
- Where blood products may be required discussion should take place concerning "risks", advantages and alternatives to blood products.

**(ii) Risks:**
- Known risks should be disclosed when either an adverse outcome is rare but the detriment severe or an adverse outcome is common but the detriment is slight.
The uncertainty of adverse aspects should be explained, and the difficulty of relating adverse events to the particular patient, depending on age, pre-existing disease and the nature of the surgery.

Discussion of risks should depend upon the anesthesiologist’s assessment of the best anesthetic technique and drug therapy, the seriousness and nature of the patient’s condition, the complexity of anesthesia, the questions asked by the patient, and the patient’s attitude and apparent level of understanding.

Emergency situations: it may not be possible or sensible to provide information when immediate intervention is necessary to preserve life or prevent serious harm.

(iii) Examples of risk might be:
- Common adverse effects of general anesthesia include fatigue, altered mental state, sleep disturbance, nausea, vomiting, sore throat, bruising from venipuncture.
- Less common, but not rare adverse effects such as awareness or spinal headache.
- Rare adverse effects which are unpredictable, such as anaphylaxis, neurological damage or death in health people.
- Adverse effects which are related to the pre-existing disease, such as death in a patient with recent myocardial infarction undergoing emergency surgery.

Anesthetic technique

General anesthesia:
The least invasive technique which is effective should be used. Minor sequelae of anesthesia become magnified in the day surgery and many can be avoided by the choice of a suitable anesthetic technique e.g.
- TIVA (total IV anesthesia).
- VIMA (volatile induction and maintenance of anesthesia).
- Selection of IV induction agent e.g. propofol.
- Selection of inhalational anesthetic e.g. sevoflurane.
- Selection of opioid e.g. remifentanil and fentanyl.

Regional anesthesia:
Peripheral nerve blocks can provide excellent conditions for day surgery. Patients may be discharged home with residual sensory or motor blockade, providing the limb is protected and assistance is available for the patient at home. The expected duration of the blockade must be explained and the patient must receive written instructions as to their conduct until normal power and sensation returns. The provision of oral analgesics to be taken as the local anesthesia begins to wear off and then subsequently on a regular basis must not be forgotten.

Central neural blockade can also be used for day stay surgery. Residual blockade after spinal or caudal anesthesia may cause postural hypotension or urinary retention despite return of adequate motor and sensory function. These problems can be minimized by the choice of local anesthetic agent used (e.g. lidocaine) or more commonly in the UK by the use of low dose local anesthetic-opioid mixtures.

**Suggested criteria to be met before attempting ambulation:**
- Return of sensation in the perianal area (S4-5).
- Plantar flexion of the foot at pre-operative levels of strength.
- Return of proprioception in the big toe.
- Patient not sedated or hypovolaemic.
- Concerns about post-dural puncture headache (PDPH) have limited use of spinals in day stay patients in the past, but the use of smaller gauge and pencil-point needles has reduced the incidence to less than 1%.

**Postoperative analgesia:**
Good pain control is critical and must be adjusted according to patient’s condition including: topical and local anesthetics, paracetamol, NSAIDs, and opioids.
Continuing pain control at home:
Oral analgesics are the mainstay of continuing pain control at home after day surgery.

**Postoperative Recovery and Discharge:**
Prescribing discharge analgesia should be the responsibility of the anesthetist and each unit should set up an agreed system. The recovery from anesthesia can be divided into three phases:
- **First stage recovery:** which lasts until the patient is awake, protective reflexes have returned, pain is controlled and they can be discharged from the recovery area.

  First stage recovery should be undertaken in a recovery area with appropriate facilities and staffing. The patient remains in this area until awake, in control of his/her airway, orientated, comfortable, without continuing hemorrhage or other complications. Each unit should have clear criteria for discharge from this area and some units may consider using a scoring system (Aldrete recovery score).

- **Second stage recovery:** which ends when the patient is ready for discharge from hospital.

  This stage of recovery will normally be undertaken in a ward area (day surgery unit) adjacent to the day surgery theatre. The ward should be equipped and staffed to deal with the common postoperative problems such as PONV, pain, postoperative emergencies such as hemorrhage or cardiovascular events. The anesthetist and surgeon responsible for the operating list should be contactable and they or a deputy should be available to help deal with problems that arise. Every patient should be seen following surgery by the anesthetist and surgeon involved in his/her care. The nursing staff may be delegated the responsibility for discharging the patient by using discharge criteria agreed with the Department of Anesthesia. If there is any doubt about the patient’s fitness for discharge, the anesthetist concerned or a deputy must be contacted.

- **Late recovery:** this phase may last several weeks and ends when the patient has made a full physiological and psychological recovery from the procedure undertaken.

  The anesthetic techniques chosen should be designed to maximize the speed and quality of recovery in the first and second stages, and so facilitate discharge.

**Reasons for hospital admission:**

- Persistent abnormal vital signs e.g. hypo- or hypertension.
- Conscious level.
- Any airway problem.
- Unexpected aspiration, bronchospasm, hypersensitivity reaction, suxamethonium apnea, malignant hyperthermia.
- Persistent nausea and vomiting.
- Persistent or severe pain.
- Unexpected surgical problem e.g.
  - Bleeding.
  - Intraoperative events.
  - Change of surgical plan.
  - Surgical complication.
- Any other problem which need admission for further care and investigations.

**Postoperative Instructions:**
All patients should receive verbal and written instructions on discharge. They should be warned of any symptoms that they might experience during the first 24 postoperative hours. They should be discharged home with a supply of appropriate analgesics, a list of possible side effects and instructions in their use. Regular dosing with analgesics for the first 48 hours may be preferable to ‘on demand’ dosing.
The patient should be advised not to operate machinery or cook until the following day. The Royal College of Anesthetists guidelines recommended avoiding driving for 24 hours is sufficient.
Guidance should be given as to when sutures should be removed, together with any specific instructions relating to the surgical procedure. In the event of a problem, the patient must know where help or advice can be found. A list of contact telephone numbers should be supplied.

**Discharge Summary**
It is essential to inform the patient about the nature of the anesthetic and surgical procedure performed. Most units currently run a help-line for the first 24 hours post discharge and telephone the patient the next day to ensure their well-being.
Telephone follow-up is highly rated by patients and can be a useful method of auditing any immediate problems.
References

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