UK guidelines for day surgery

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Abstract

Day surgery is the admission of selected patients to hospital for a planned surgical procedure after which they return home the same day.

Keywords day case; body mass index; pain control; infiltration anaesthesia; NSAIDs; paracetamol; regional anaesthesia; discharge analgesia

Definition of day surgery

Day surgery is the admission of selected patients to hospital for a planned surgical procedure after which they return home the same day.[1]

When comparing day surgery rates for a particular type of surgery, one must realize that definitions differ around the world and some countries (e.g. USA) consider a stay of <24 hours as a day case.

The UK Department of Health considers a patient a day case only if he is placed on the waiting list for treatment as a day case by his surgeon; this is called their 'management intent'. Those listed for surgery as inpatients but who are then successfully treated as day cases do not count as day cases for inclusion in hospital performance figures.

History of day surgery

Day surgery is not new; in 1909, Nichol reported on 9,000 children who underwent day surgery for harelip, hernia, talipes and mastoid disease at the Royal Hospital for Sick Children in Glasgow.[2] This was the work of a gifted enthusiast who was a visionary; he stressed the importance of suitable home conditions and cooperation with GPs.

Advances in day surgery

Advances in anaesthesia and surgical techniques have made an expanding number of procedures suitable for day surgery. These advances have allowed patients who were previously deemed unsuitable due to various comorbidities to be offered day surgery. In many hospitals, instead of the surgeon asking 'is this patient suitable for day surgery?' they are now assumed to be suitable, and the question is 'is there justification for admitting this case as an inpatient?'

Economics of day surgery

The cost effectiveness of day surgery has put this type of care at the top of political agenda. The NHS plan demands that 75% of elective surgery to be done as day cases. Day surgery has other potential advantages, such as reduced psychological impact with a proven reduction in problems such as nocturnal enuresis and disturbed sleep patterns in children, and less postoperative cognitive dysfunction in the elderly.[3,4] 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'.[5]

Day-surgery patients are an excellent resource for undergraduate teaching, and may improve the students' understanding of surgical care in the community.

Provision of day surgery

Suitable wards for unplanned admissions must be available to maximize the potential for day surgery. Stand-alone day units can be very successful but, the further they are from such backup, the more careful and conservative case selection becomes. This is an important consideration for the new wave of independent treatment centres. Facilities within hospitals may take three main forms (Table 1).

Alternative facilities for the provision of day surgery

Dedicated day surgical unit

The dedicated day surgical unit is considered the 'gold standard' model with its own admission area, waiting rooms, wards, theatres and recovery, together with administrative facilities.

Day-case ward

Patients are admitted to a day ward but have surgery within the main theatres. The theatre lists may consist entirely of day cases, or day cases may be incorporated in the routine theatre lists. The latter is the least efficient arrangement for day surgery, with patients being excluded until the end of lists. This increases the risk of cancellation and reduces the amount of time the ward has to get the patient ready for discharge.

General ward

Patients are admitted to the standard surgical wards; this is unsatisfactory for patients and nursing staff. This model has additional problems to those faced by the day-case ward stated above. The mixing of inpatients and day cases causes stress to ward staff trying to admit large numbers, care for their postoperative patients, and then facing the problems of discharging patients with suitable analgesics at the end of the day.

Table 1

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Patient selection and the preoperative assessment clinic

Day surgery requires careful selection of patients and consideration of the experience of the team involved. What may be correct for one specialty or a particular operation may not be right for another (e.g. cataract extraction done under topical local anaesthesia can be carried out on a much older and more frail population than inguinal hernia repair).

The assessment clinic should be run by suitably trained nursing staff, with patients seen before surgery. Leadership of this service should be provided by a clinical lead from the Anaesthetic Department because they must develop guidelines for patient screening that are accepted by their anaesthetic colleagues; a system for dealing with problems identified by the nursing staff must be in place during this screening process. In general, preoperative testing should be limited to circumstances in which the results affect patient treatment and outcomes. Guidelines prepared by the UK National Institute for Health and Clinical Excellence on preoperative assessment can be used to determine what is appropriate for each unit.[6] Arrangements should be place for appropriate tests to be done at the time of assessment; a mechanism to review the investigations undertaken should also be in place. Preoperative assessment is an important time to educate the patient and his carers about surgery and postoperative care.

Assessment

Social: the patient must be willing to undergo day surgery and, in most cases, there should be a responsible adult able and willing to care for the patient for at least the first twenty-four hours. Patients and/or their carers should have easy access to a telephone, and the patients' home circumstances should be compatible with postoperative care.

Medical: the patient and his carer should understand the planned procedure and postoperative care. The patient should be fully fit or chronic diseases (e.g. asthma, diabetes, hypertension, epilepsy) should be well controlled. There should be no arbitrary age limits and patients should be selected according to their physiological status as found at assessment. Two themes that are topical are obesity and the management of diabetes.

Body Mass Index is used as part of selection criteria by most day surgery units. It is a measure of obesity and is calculated by dividing the weight (measured in kilograms) by the square of their height (measured in metres).

This is an area that has seen major change—a few years ago patients with a body mass index of >30 were deemed unsuitable for day surgery. Advances in surgical and anaesthetic techniques mean that patients with a much higher body mass index who are otherwise fit are now accepted.[7,8] Some units accept a body mass index of ≥40, but it is dependent on the procedure and the experience of those involved.

Diabetes mellitus affects 2–3% of the UK population and is not a contraindication to day surgery, but the stability of the disease and the patient's understanding of diabetic control should be assessed. The British Association of Day Surgery has produced a handbook on the care of diabetic patients.[9]

Procedures suitable for day surgery

Procedures can be done as a day case provided there is satisfactory control of symptoms postoperatively and the ability to drink and eat is regained within a reasonable time after the completion of surgery. Pain, nausea and vomiting must be controlled and the patient should be able to mobilize to some extent. Enthusiasts are pushing boundaries; the following have been carried out as day cases in the UK:

- parathyroid and thyroid surgery
- tonsillectomy
- thoracoscopic sympathectomy.

Surgery undertaken as a day case must be based on proven safety and quality of care; units should be careful when introducing new procedures.

Day surgery was originally limited to procedures lasting <60 minutes. Longer surgical procedures are now regularly done with:

- appropriate patient selection
- modern anaesthetic agents
- careful postoperative care.

Many units do not have a specified maximum duration of operation. Some trusts have developed 23-hour stay facilities to support the introduction of more major procedures. These may assist the transfer of operations from inpatient to day surgery and extend day surgery operating theatres into the early evening.

Day of admission

Patients should be admitted to the unit and a check made to ensure that no changes in their health and home circumstances have occurred. Patients should be reviewed by the surgeon and the anaesthetist who will be caring for them.

Perioperative management

Pain control

The success of day surgery depends on the management of postoperative pain. Pain should be assessed throughout the stay. This is usually done in adults using a visual analogue scale consisting of a 10-cm line with the words 'no pain' at the start and 'worst imaginable pain' at the end (see 'Perioperative management of pain', page 325). The patient puts a cross in a position on the line which represents how much pain he is experiencing. The distance along the line is measured and recorded. A value of <3 cm is often accepted as indicating acceptable analgesia. Pain control requires a multi-method approach, avoiding long-acting opioids (morphine) if possible, and using:

- local anaesthesia
- NSAIDs
- paracetamol
- short-acting opioids (alfentanil, fentanyl).

Pain management requires a team approach (surgeon, anaesthetist, nursing staff). For example, pain at the end of laparoscopic surgery can be minimized by releasing as much carbon dioxide as possible from the abdomen and by aspirating free blood within the peritoneum.

Infiltration anaesthesia

Infiltration of the surgical site with local anaesthetic is simple, safe and provides satisfactory analgesia after most types of surgery.

Infiltration of local anaesthesia before skin incision provides better postoperative analgesia and may reduce intraoperative analgesic requirements.[10] Topical local anaesthetic as eye drops or local anaesthetic creams (e.g. EMLA cream) provide effective postoperative analgesia for squint surgery and circumcision.

NSAIDs

NSAIDs should be given if not contraindicated. Intravenous or *per rectum* routes of administration are not necessary. There is evidence that giving the first dose orally about one hour before surgery produces better and longer-lasting pain relief.[10]

Paracetamol

Paracetamol has a well-established safety and analgesia profile. It reduces the need for more potent opioids with their unwanted side effects. Intravenous paracetamol is available in the UK; it is fast acting and appears to be more effective than oral paracetamol, with analgesic effects comparable to NSAIDs.

Regional anaesthesia

Peripheral nerve blocks can provide excellent conditions for day surgery. Patients may be discharged with residual sensory or motor blockade, provided the limb is protected and that a carer can provide assistance.

The introduction of low-dose spinal anaesthesia has increased the suitability of central neural blockade for day surgery.[11] This can be useful for lower limb, perineal and lower abdominal procedures, and may allow more problematic patients to be treated as day cases. Small-gauge pencil-point needles have reduced the incidence of post-dural puncture headache to $< 1\%$.

Discharge analgesia

Oral analgesia is the mainstay of treatment after day surgery. NSAIDs in association with paracetamol/codeine combination tablets are most commonly used in day surgery.[12] The patient must receive the first dose of the chosen oral analgesia before discharge and before the effect of short-acting opioids or local anaesthesia wears off. Patients should also be advised about the requirement for regular dosing for the first few days.

Codeine preparations can cause constipation and may not be appropriate after several surgical procedures (e.g. haemorrhoidectomy). Those who have successfully introduced these procedures as day cases have developed techniques to help the patient, for example:

- prophylactic metronidazole to prevent infection
- glyceril trinitrate rectal ointment to reduce painful spasm
- faecal softeners pre- and postoperatively.

Each unit should have their own analgesic protocol which, as in the above example, may need to be specific to a particular procedure.

Discharge

Patients should be seen postoperatively by the anaesthetist and surgeon involved in their care. Each unit should have its own guidelines for discharge and these should address the areas noted in Table 2.[13]

Patients should receive verbal and written instructions on discharge which should include details about symptoms that they might experience during the first 24 hours after surgery.

Discharge criteria

- Vital signs should be stable for at least one hour
- Oriented to time, place and person
- Adequate pain control and has a supply of oral analgesics
- Understands how to use oral analgesia supplied and has been given written information about them
- Ability to dress and walk where appropriate
- Minimal nausea, vomiting or dizziness
- Has at least taken oral fluids
- Minimal bleeding or wound drainage
- Has passed urine (only if appropriate to surgery)
- Has a responsible adult to take him home
- Has agreed to have a carer at home for next 24 hours
- Written and oral instructions given about postoperative care
- Knows when to come back for follow-up (if appropriate)
- Emergency contact number supplied

Table 2

Guidance should be given about not driving for at least 24 hours, though this varies according to the surgery. Further information should also be provided:

- use of machinery
- signing legal documents
- returning to work
- when sutures should be removed
- what to do in an emergency
- a contact number if urgent advice is needed.

Reasons for inpatient admission

The commonest problems requiring inpatient admission are intractable vomiting and severe pain. Units must monitor this—the acceptable benchmark for inpatient admission is 1–2%. Admission rates will rise as units provide more major surgery as a day case. The possibility of admission should be discussed with patients at the screening stage. ◆

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