Review Article

Day Care Surgery: The Norm for Elective Surgery

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In the modern day hospitals, there is an established principle of ambulating the surgical patient as early as possible. This idea has gone a step further by discharging the post-operative patient home as soon as the critical period or immediate post-operative nursing needs have been met with. This has led to the concept of day care surgery.

**The notion of day care surgery goes back to the days of Dr. Nicoll, a surgeon and founder of modern ambulatory surgery, who published his landmark article on the surgery of infancy in 1909[1]. He described a 10-year surgical experience at the outpatient clinic in the Glasgow Hospital for Sick Children in which 8988 patients were treated as outpatients after operation. Nearly one-half of the patients were children less than 3 years of age. Dr. Nicoll performed 7392 of these operations himself. They included hare lips, cleft palates, hernias, and the like. His astounding accomplishments and philosophy, especially his criticism of hospitalization and his insistence on getting the children back to their nursing mothers as soon as possible has gained global acceptance with the result that during the last two decades, many different countries have experienced a spectacular change from inpatient to day-surgery. **
Currently day care surgery is the norm rather than the exception.

What is day care surgery?

Minor surgery has been performed regularly in hospital surgical outpatient and Accident and Emergency departments for years. However, during the last two decades, many different countries have experienced a dramatic switch from inpatient to day-surgery[3]. Specialized units have been developed for surgical operations on patients who are not admitted to hospital overnight.

Day care surgery has been defined by the Royal College of Surgeons as *when the surgical day case patient is admitted for investigation or operation on a planned non-resident basis and who nonetheless requires facilities for recovery.* This definition excludes upper and lower GI endoscopies, outpatient procedures such as flexible cystoscopy, and minor superficial surgery under local anaesthetic, none of which require full day case facilities for recovery. It is important to mention that day care surgery is different from out-patient surgery in that the patients of day care surgery need some degree of post-operative specialized nursing care necessitating post-operative observation for a few hours. All day care surgical patients essentially come early in the morning and after the surgery is over and the post-operative observation is uneventful, the patient is discharged home the same day.

The concept of day surgery implies that patients come into hospital for their procedures and go home the same day. Nowadays, many Day Units operate an 'extended' or '23 hour' stay policy, which means that patients can stay in the Unit up 23 hours 59 minutes and still be categorized as a day case. The ***'23-hour'*** stay is determined by the day unit staff and is based on the needs of individual patients, in order to safeguard their safety.

With ambulatory surgery all participants have benefited as demonstrated by public interest and demand, surgeon satisfaction, patient participation and most importantly, payer encouragement and mandate[4]. A Day Surgery facility refers to a specific operating complex for surgical treatment of patients who are admitted and discharged on the same day. The facility should be available to all members of the medical and dental profession who are suitably qualified and granted privileges to treat patients as defined below.

Nicoll[1] observed that "the results (of Surgery) obtained in the outpatient department at a tithe (tenth) of the cost are equally good' as those following inpatient surgery. Day-surgery is cost-

effective and useful and is the best for healthy children undergoing minor procedures[2]. It has been claimed that ambulatory surgery results in less wound infections compared with inpatient treatment[3]. Ambulatory surgery is increasingly being accepted and encouraged throughout the world by both government and private agencies.

The reduction in cost to both the patient and community, coupled with the advantages of Day Surgery for both patients and their relatives, have served to increase the demand for Day Surgery. The monetary advantages of day surgery are many. Day surgery allows the treatment of large numbers of patients at less cost than in-patient surgery. Reasons for cost reduction include the following:

- Staff and facilities are predominantly not needed at night, at week-ends or on public holidays.
- Less staff is required for a Day Surgery facility than for comparable in-patient surgery.
- If an operation is suitable for Day Surgery is carried out as an in-patient, expensive hospital bed are occupied, thereby using up more capital equipment, patient and administrative time.
- The use of a Day surgery facility reduces the number of in-patient beds required.

The advantages to hospitals

- The economic savings recorded above;
- More attractive to nursing staff because there is less shift work involved.

Advantages to the patient

- Pre-booked date and less likely to be cancelled
- Shorter waiting lists and lesser uncertainty of a long wait
- Easier domestic arrangements
- Earlier mobilization
- Minimal disruption of patient's personal life
- Earlier return to normal environment
- Reduced risk of cross-infection
- Avoidance of disruptive nights in hospital wards
- Less loss of time at work
- Less psychological disturbances in children
- Lesser chances of cancellation due to pressures of emergency surgeries in a dedicated day care facility.

Disadvantages of day care surgery

- The need for a responsible person to oversee the day care patient at home for the first 24-48 hours.
- The restriction of day case surgery to experienced senior staff; little opportunity for junior staff to practice.
- Extra work for the general practitioner in the postoperative period; patients often ring them for advice or treatment.
- The cost-effectiveness of the unit is reduced when less complex cases are dealt with on a day basis.

Types of Day Care Surgical Centres

Day Care Surgery can take place in various settings which are basically four types in use.

1. *Hospital Integrated Unit*
   This unit provides a designated area to which patients are admitted and from which they are discharged home and in which preoperative evaluation and preparation are carried out. The hospital operating rooms and recovery rooms are used for both inpatients and Day Care Surgery patients.
2. *Hospital Autonomous Unit*
   This unit is totally self-sufficient. This type of unit is located within the hospital or on the grounds of the hospital, but operates totally independent of other portions of the hospital.
3. *Hospital Satellite Unit*
   This is an autonomous facility which is sponsored and/or operated by the hospital but located away from the campus of the hospital.
4. *Free-Standing Unit*
   This is an autonomous unit which is not geographically or administratively part of any other health care facility.

Each of these four has its own peculiar advantages and disadvantages

Patient Selection

It is very important that correct patient selection is done to ensure the success of the day care

programme. Criteria considered in selecting patients for day surgery include:

- For general anaesthesia, patients must be assessed as American Society of Anesthesiologists (ASA) classes I or II. However, ASA class III & IV can also be taken up in a well established Day Care Surgical Centre.
- Obese and anxious patients and those who have a strong wish for for inpatient treatment should be excluded.
- The elderly and frail are generally better managed on an inpatient basis
- Operations involving excessive blood loss or postoperative severe pain should be disqualified
- Operations should preferably not go beyond one hour duration.

Patient's general health and social conditions are the major criteria, although these may be relaxed for surgery under local anaesthesia.

Contra-indications to day surgery

- ***Medical***

  Patients who get angina at rest or had myocardial infarct in last six months, hypertensive patients with a diastolic greater than 105 mmHg, cardiac failure, acute respiratory infection, asthma - moderate to severe require increased observation, chronic bronchitis, emphysema, those with gross obesity with body mass index > 35 and insulin dependent diabetics

- ***Psychological:***

  Psychologically unstable such as those having pyschosis, or if the patient does not accept the idea of day surgery.

- ***Social:***

  Patients living far from the day surgery centre or have no easy means of transport. Patients with no one to take them home after surgery and to look after them for the first 24-48 hours postoperatively those who at home have no access to a lift, telephone or indoor toilet and bathroom.

Table 1 shows the commonly performed day surgical procedures. The British Association of Day Surgery (BADS) has recommended inclusion of another fifty procedures under the name of Trolley of procedures.

Complications

The complication rates in day surgery, resulting in unexpected re-admissions are equally divided between problems with the surgery and anaesthesia: Haemorrhage, pain in 50% Nausea and vomiting, dizziness in 50%.

Extended Recovery Centres and Limited Care Accommodation (Medi Motels, Hospital Hotels).

Ideally, all ambulatory patients should go home the day of surgery, with responsible escort to home. At home a capable adult should be with the patient all the time for 24 hours and facilities for communication out to dedicated health personnel should be present. The concept of extended (Overnight) recovery after ambulatory surgery and Limited Care Accommodation (Medi Motels) or hospital hotel is being promoted in Norway for day care surgery patients who do not fulfill the criteria for discharge home.

A hospital hotel s defined as a hotel close to the hospital, where the patient is supposed to have the same facilities and staffing as in an ordinary hotel, but where there are somewhat better facilities for handling unanticipated medical problems.

Table 1. Some of Common Day Surgery Operations.

1. Orchidopexy	13. Arthroscopy
2. Circumcision	14. Bunion operation
3. Inguinal hernia repair	15. Removal of metalware
4. Excision of breast lump	16. Extraction of cataract + or - implant
5. Anal fissure dilatation or excision	17. Correction of squint
6. Haemorrhoidectomy	18. Myringotomy
7. Laparoscopic cholecystectomy	19. Tonsillectomy
8. Varicose vein stripping or ligation	20. Sub Mucous resection
9. Transurethral resection of bladder tumour	21. Reduction of nasal fracture
10. Excision of Dupuytren's contracture	22. Operation for bat ears
11. Carpal tunnel decompression	23. Dilatation and curettage/hysteroscopy
12. Excision of ganglion	24. Laparoscopy

The role of the hospital hotel in ambulatory surgery is to take care of some of the patients who otherwise would have been transferred to inpatient care. With hospital hotel no traveling is required after discharge and in case of complications; the medical support is much closer both in terms of diversity and time-delay. Accommodation Facilities will allow these patients more prolonged recovery under nursing supervision and, where appropriate, several days immediate post discharge convalescence under continuous obsevation[5,6]. So far, the experience of Norway with hospital hotels is good, no mortality has been reported from these hospital hotels and serious problems have been rare[6].

Day Care Surgery in Developing Countries.

For decades surgeons in the third world countries like Uganda have treated patients on an outpatient basis. Such patients have usually been operated in a "minor" theatre under local anaesthesia. In India, among all surgical specialties, less than 15% of cases operated upon are true cases. The bulk of these patients come from specialties of ophthalmology and ENT, followed by Gynaecology and General Surgery. The other super-specialties only contribute a very small fraction[7].

When it is argued that day surgery inappropriate in the so-called 'developing' countries; it has to be remembered that social circumstances in Glasgow, where Nicoll[1] worked at the turn of the last century, were primitive but with strong family as in many such circumstances today. Thus, given reasonable proximity to a hospital, there are few societies where day surgery would not be appropriate. Nicoll[1] often operated on the very young, and extremes of age do not themselves preclude day surgery practice[8].

Conclusion

Day care surgery is now an accepted modality of treatment for most surgical patients and it has multiple advantages to all the stakeholders as well as the patients, besides being an economically better option for the health sector which is beleaguered with scarce resources. Therefore, creating more day care centres should be in the better interest of the patients and the nation as a whole Given the will, the majority patients, even in the developing countries, can undergo the majority of elective surgery procedures on a day stay basis and that there are facilities already available to cope with the initial expansion.

The problems faced in the developing countries by day surgery programmes include: lack of awareness in the patient population, poor communication and transport, poor facilities for proper training of doctors in day surgery specialty and sidelining the surgical specialties by Health Ministries in favour of other programmes particularly those related to HIV/AIDS, Malaria and Tuberculosis as well as maternal and child health. The local Surgical Societies should work hand in hand with the ministries of health to promote Ambulatory surgery in the region.
The International Association of Ambulatory Surgery should support training programmes in Ambulatory Surgery in Africa.

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