Complications in Day Care Surgery: Our data over 20 years of ambulatory surgery

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Abstract

Background: Abhishek Day Care Institute and Medical Research Centre, has completed 2 decades in the field of Ambulatory or Day Care surgery and was a dedicated Multi speciality Day Care General Surgery Centre before the concept even took root in India. We are proud to be one of the pioneers in this field and offer services like General Surgery, Minimal Access Surgery, Urology, Plastic Surgery, Orthopaedics, Vascular Surgery etc including GI endoscopies and Chemotherapy at our centre. Our experience in Ambulatory Surgery over a period of 20 years, include over 30000 cases within our centre and at tertiary hospitals combined. During the period of 20 years, we have performed 7036 surgical procedures, 28 NeoV Laser Procedures, 6700 OPD procedures and 7088 Endoscopic procedures under local anaesthesia and some form of sedation at our Day Care Centre.

Methods: The place of study was Abhishek Day Care Institute and Medical Research Centre, Mumbai, India. The data was collected comprising of patients that were operated during the period from June 2000 (when the centre opened) to December 2020.

Results: During the period of 20 years, we have had minimal serious complications with few mild complications that would not disallow day care surgery. We report that day care surgery is a safe and effective means of economic and fast track surgery.

Conclusions: We conclude that with experience and proper protocols in place, day care or ambulatory surgery can safely be performed for minor and major cases with the same rate of complications as found at in patient surgery and these complications can be managed effectively in the ambulatory setting along with having a backup hospital close by for those who may need admission care.

Keywords: Day Care Surgery, Ambulatory Surgery, Complications, Safety, Fasttrack Surgery.

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Background

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During the period of 20 years, we have performed 7036 surgical procedures, 28 NeoV Laser Procedures, 6700 OPD procedures and 7088 Endoscopic procedures under local anaesthesia and some form of sedation at our Day Care Centre.

Complications:

Appendicectomy: 6 patients (14.2%) had to be hospitalised overnight.

Laparoscopic Cholecystectomy: 1 patient had a severe bleed intra operatively due to an aberrant vessel and had to be stabilised and shifted to a nearby tertiary centre for further management. The patient was discharged in 2 days following admission.

Haemorrhoidectomy: 11 patients (1.11%) had to be hospitalised for secondary bleeding, managed conservatively, no transfusion had to be given.

Bilateral hernioplasty: 1 patient (1.6%) had to be admitted due to excessive drowsiness.

1 patient had a colonic perforation in the year 2005 while undergoing a hernioplasty where the bowel was stuck to the hernial sac. They were shifted to the hospital and managed with surgery.

1 patient of piles had a severe bleed which required 2 pints of blood transfusion.

1 patient who was undergoing a sebaceous cyst excision on the back had an on table reaction to the local anaesthesia (Xylocaine 2% + Sensorcaine 0.5% 3:2) which may have entered the systemic circulation. The patient had involuntary movement of the legs while lying in prone position during the procedure. These involuntary movements included flexing of the leg below the knee, jerking of the forearms and sweating. The patient was injected with Avil, Hydrocortisone and Atropine and settled within 30 minutes.

Syncopial attacks occurred in 12 patients over the period of 20 years and were all managed conservatively with leg raising, fluids and rest.

18 male patients, with underlying Benign Prostatic Hypertrophy, had to be catheterised post operatively, as they went into retention. The patients were given a trial before discharge and if unsuccessful they were discharged with the catheter which was subsequently removed the following morning.

Discussion

Factors relevant for the success of day care surgery

Day care surgery demands the highest standards of professional skills and organization. Although, the operations could be minor, an anaesthetic is never minor. Listed below are some of the factors relevant for the success of day care Surgery (7).

a. A thorough selection process
b. Information disseminated

c. Preoperative assessment / tests.
d. Proper anaesthetic and post anaesthetic care
e. Patient acceptability
f. Audit

Selection of the suitable patient

This is perhaps the most important aspect of the selection process. Selection is not simply a matter of choosing patients with conditions that may be treated on a day care basis, but also involves informing those patients who are unsuitable for medical and social reasons that they will not be able to participate in the day care process. One of the more important factors in this regard is the expected duration of surgery. Federation of Ambulatory Surgery Association (FASA) concludes: that incidence of complications is directly related to the duration of surgery and anaesthesia. In surgeries lasting for less than 1 hour, the complication rate is 1 in 155 patients and in surgeries of 2 hours, it is 1 in 55 surgeries (3).

b. Dissemination of Information

Comprehensive and well presented information using terminologies for patients and their relatives in a language and manner in which they would easily understand the information presented is essential for the success of day surgery. Day Care patients, unlike admitted patients, do not have ready access preoperatively and postoperatively to health care professionals to answer their questions and deal with their queries. As suggested by Baskerville et al (4), the information given to patients should commence with a brief description of the surgical condition that they are being treated for and the procedure planned for the same. Clear instructions regarding what patients must do before coming to the unit, the postoperative analgesic regimen, what they should do at home, and what is expected in the days following their operation and how they must react to certain instances are to be explained in full. Finally, patients need advice on when they can return to various activities. The most important communication should be about what to expect at home and what are the possible complications that may arise and the ready solutions for the same along with contact details of a Doctor in case of emergencies.

c. Preoperative Assessment / tests

An asymptomatic low risk patient does not need a battery of screening tests unless the medical history or the physical examination suggests otherwise. In the paediatric population, a routine haemoglobin (Hb) evaluation and urine examination are done. In adults above 40 years, in addition to Hb and urine, ECG is also required. In older patients (patients >50 years, chest X-ray and serum glucose are also advised. The preoperative assessment should be detailed and similar to in-patients.

d. Post anaesthetic care

Several recent innovative facilities for post anaesthesia care after outpatient surgery have allowed surgeons to do more complicated surgeries on sicker patients as outpatient procedures and have made outpatient anaesthesia less risky.

In an overnight stay unit (23-hour admission unit): post-surgery patients are observed overnight but discharged the next morning, within 23 hours of surgery. This course overcomes the arbitrary limit to quality for reimbursement as an outpatient procedure in terms of insurance regulations. Even these are now changing to accept the advantages of ambulatory procedures not only to the patient but to the insurance provider as well.

After the operation, vital signs are monitored till the patients are ready to be discharged. A detailed discharge card is given, including the details of the procedure / postoperative analgesia, when to remove sutures (if required) and on follow up appointments. A clear section should provide the contact details of the doctors and nurses who will be involved in the after care of the procedure performed.

e. Patient acceptability

Methods of gauging the acceptability of day care surgery in patients are to look for a number of unsolicited complaints, incidence of readmission after patients have returned home, and postoperative complication rates. Pain scoring is a very useful tool to understand the acceptance of the procedure and its nature as an ambulatory choice for the said ailment.

f. Regular Review of the SOPs

As in other areas of practice, a regular audit of the standard operating protocols is essential to maintain and improve standards of care. All complication rates and patients feedback must be reviewed to determine the best way forward for improvements.

Contraindications for Day Care Surgery:

These are becoming increasingly rare with the advent of newer techniques of anaesthesia and modern 'fast-track' surgery and minimal access surgery6. Almost all patients can be treated in an ambulatory setting for routine cases with the following exceptions:

- Medically unfit for discharge on the same day.
- Mental retardation / psychologically unstable.
- Highly infectious disease.
- Upper respiratory tract infection. (Now manageable with newer anaesthetic drugs)
- Premature or less than 6 month old babies.
- Requiring extensive post-op monitoring.
- Long distance from home. (Possible if living close to a hospital/ nursing home)
- Shock / trauma.
- High fever.

Conclusion

A vast experience gathered over the years in the field of ambulatory surgery has helped us bring down common complications that would otherwise occur at routine surgery to a minimum even while performing day care surgery. This is evident from the fact that most of our complications occurred in the earlier days of our ambulatory practice. Having said that, complications are a part and parcel of surgery and can occur at any instant. The best way to deal with them is to be prepared for them and to have in place protocols that would minimize the risk of developing those complication. Stringent selection criteria, detailed check lists, good training of all staff involved in day care and experience of the team involved all play an essential part in the staving off for complications that arise. The fact that Dr. Begani has had 2 years of training in the field of anaesthesia helped immensely in knowing what to expect with Short Anaesthesia and TIVA so we could plan the amount of local anaesthetic, the recovery time, control PONV appropriately and ensure that the patient could be safely discharged within a period of 8 hours to 23 hours to fit in the criteria of ambulatory or day care surgery. Therefore, we conclude that with experience and proper protocols in place, day care or ambulatory surgery can safely be performed for minor and major cases with the same rate of complications as found at in patient surgery and these complications can be managed effectively in the ambulatory setting along with having a back up hospital close by for those who may need admission care.

Competing interests

The authors declare that they have no competing interests.

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