Review of Day Surgery cases at a One Day Surgery Centre

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Abstract

A retrospective analysis was done of 10,635 surgical cases performed over a period of 10 years, at One Day Surgery Center, a stand-alone Multi-speciality Day Surgery Center in Mumbai.
Standard Operative Procedures (SOP) have been developed based on recommendations of the IAAS and The Indian Association of Day Surgery. Protocols for patient selection, preparation (including counselling) and discharge, were prospectively followed. Cases were divided as: OPD: 2748 cases (25.83 %), Day Case: 5041 cases (47.40 %) and Extended / Short stay (up to 48 hrs.): 2846 cases (26.76 %). The number of day cases were found to be maximum in this analysis, with less than 0.02% complications. In conclusion, protocols increase patient safety and the efficacy of a successful functioning of DCS Centre. Day Surgery is also fast becoming an accepted norm for dispensing planned surgeries in India.

Keywords: Multispeciality, Day surgery, One Day Surgery, Stand-alone, Day Care Surgery.

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Introduction

Ambulatory Surgery (AS) is defined as operations or invasive procedures performed and discharged on the same working day. Anaesthesia may range from loco-regional blocks to brief general anaesthesia. These major procedures warrant a fully equipped operating theatre with a recovery room/bay. Post-operative observation for a few hours is necessary in most cases. Minor/OPD/ Office procedures and Endoscopies are usually not considered as AS.

AS has gained popularity only recently, in our country. This may be due to the fact that there is lack of awareness about Ambulatory Surgery among our doctors and patients. Day Surgery has been in use in some developed countries, like the United Kingdom, over a hundred years ago in 1909, in an article was published on Day Surgery of 7392 children, operated in Glasgow (1).

Therefore, a true Day Case is a patient who is admitted for an operation on a planned non-resident basis and who nonetheless requires facilities for recovery. The whole procedure should not require an overnight stay in a hospital bed (2).

Aim

Cases were analyzed at One Day Surgery Centre to establish feasibility, patient safety and efficacy of protocols proposed by The Indian Association of Day Surgery.

Material and Methods

Place of study: One Day Surgery, Mumbai, India. Which has one OR and 15 recovery/Day Surgery beds. All patients prospectively admitted for surgery, between May 2007 to April 2017.

Total number of cases admitted: 10,635.

Surgical patients were divided into:

1) OPD (Minor) Procedures: 2748.
2) Day Case Surgeries: 5041 (Table 1).
3) Extended / Short Stay: 2846.

Medical Protocols followed:

Patient selection:

- Age: greater than 6 months.
- Medically fit and stable patient. (ASA I & II).
- Well-motivated and psychologically / mentally stable.
- Provision of toilet, transport, telephone, and
- Responsible career at home.

Patient Preparation:

- Examination and diagnosis.
- Routine investigations: Haemogram, Blood sugar, Triple H, Urine, X-ray Chest, ECG, USG, Liver & Kidney function test if necessary. Any other test as per requirement.
- Medical Fitness (Physician/Cardiologist/Diabetologist/ Anaesthesiologist).
- Overnight fasting.
- Bowel preparation, if necessary.
- Pre-op instruction on medication, e.g. stop Aspirin 3 days before surgery.
- Use of anxiolytic or sedative for a good night's sleep.
- Prophylactic antibiotic was given on admission.

1. Anaesthesia used:

- Local anaesthesia: 2% Lignocaine HCL with or without adrenaline, mixed with equal quantity of 0.5% Bupivacaine or Ropivacaine 7.5 mg, injected through a 27G needle. Sedation where required.
- Blocks: Pudendal, Ring, Field, Inguinal, Scrotal / Cord / Coastal / Saddle.
- Short General Anaesthesia: Inhalation or IV.
- General Anaesthesia.

2. Discharge Protocol:

- Patient should be fully conscious.
- Haemodynamically stable.

Table 1 Postanesthetic Discharge Scoring System (PADSS). -

Procedure	N	Procedure	N
Hernia repair	554	D&C	324
Excision of Haemorrhoids	827	Anterior repair	128
Varicocoele	152	Diagnostic laparoscopy	432
Anal fistulectomy	187	Ptosis correction	2
Anal fissure excision	70	Intraocular lens	4
Orchidopexy	19	Blepharoplasty	1
Circumcision	143	Burns dressing	19
Gynaecomastia excision	25	Liposuction	91
Pilonidal sinus excision	104	Hare Lip correction	2
Perianal/Rectal abscess	62	Skin grafting	98
Parotid cyst excision	2	Nipple correction	4
Cholecystectomy	4	Breast augmentation	37
Diabetic toe excision	175	TURP	1
Laparoscopic Ovarian Cyst	76	Hypospadias correction	2
MTP	32	Epididymal Cyst excision	24
Sub Mucous Resection	36	Hydrocoele	209
Tympanoplasty	5	Testicular Biopsy	101
Tonsillectomy	31	Breast lumpectomy	210
I&D Abscess	372	Urethral Dilatation	6
Lymph node biopsy	279	Cystoscopy	23
Nasal Polypectomy	25	Cervical Cautery	86
Vasectomy	21		
		Total	**5093**

No giddiness on standing.
- Able to walk without vomiting.
- No or minimal pain.
- Passed urine.
- Responsible patient is present to take patient home.
- No surgical complications.

3. On Discharge:

- Written instructions.
- Verbal instructions.
- Contact numbers of all our team, including the operating surgeons, in case of any questions and complications.
- Instructions on how to look for complications and its management: train the patient, relatives, staff and Family physician.

Procedure for anaesthesia:

Different types of anaesthesia were used as per surgery and surgeons preferences. These were explained to the patient at the time of counselling.

Most common types with combinations at the Centre were:

- Loco-regional Blocks.
- Short GA.
- General Anaesthesia.

The most commonly used material for local anaesthesia in day to day surgery at our center was a combination of 2% lignocaine HCl (with or without Adrenaline) and 0.5% Bupivacaine or Ropivacaine 7.5 mg. Mixed in equal quantity, dose can be calculated based on the patient's weight. Recommended dose for 2% lignocaine without adrenaline is 4.5 mg / kg body weight, maximum 300 mg, with 1:80,000 adrenaline 7 mg / kg body weight, maximum upto 500 mg. 0.5% bupivacaine can be given upto 175 mg in an adult, as a single dose. (3) Dose of Ropivacaine is 7.5 to 220 mg for infiltration purpose.

Injection for the block is administered with a 27 G long needle. At the time of injection, patient is sedated, with Midazolam (1 -2 mg) and Pentazocine (15-30 mg) / Fentanyl (25-50 mg). This avoids anxiety and pain felt during administering the block.

Inhalation anaesthesia, either by tracheal tube, Laryngeal Mask or 'I-Gel', were used in these patients, Halothene/Isoflorine/Nitrous Oxide and Oxygen were used in different patients, according to the choice of the anesthetist.

Post-Operative Management

Usually, intravenous fluid is restricted to 500ml and the patient is encouraged to start fluids orally, as soon as possible. Mobilization is done as early as possible, first, on the bed, then out of bed. Care should be taken to support the patient or wait until giddiness has resolved. Oral intake is initiated within 2 to 3 hours, with water first and then followed by tea and biscuits, unless it is necessary to be nil-by-mouth for a longer time.

The average hospital stay for a Day Surgery case is 6 hours with follow-up after 48 hrs.

Discharge protocols were followed in every patient.

Complications

Two patients, presented with complications post-operation. A patient undergoing ventral hernia repair with a BMI of 40, was readmitted for signs of cellulitis in one leg, as a precaution, Intravenous antibiotics and limb elevation with gentle physiotherapy was initiated, with a suggestion of colour doppler to be done as a follow-up. Another patient was readmitted for 'Spinal Headache' and treated conservatively by IV fluids and oral analgesia.

Results

Prospective selection of cases for surgery in a specific category and its retrospective analysis, has brought out, an equivocal result. 2 out of 10,635 patients operated at the Center were readmitted. Therefore, present overall re-admission rate is calculated as: 0.02%. In the Day Surgery cases, no readmission or complications were seen. Day Surgery cases are far more than the Short stay cases.

Discussion

There are several definitions for Day Surgery in different parts of the world, One Day Surgery, Day-case, Ambulatory surgery, are a few commonly used nomenclature to describe Day Care Surgery. In some countries, they are extended to include a discharge process of upto 23

hours. The first proposal for a unified terminology was put forward by Roberts and Warden in 1998 (4).

The Indian Association of Day Surgery and The International Association for Ambulatory Surgery have suggested certain protocols, which are for patient selection and preparation, type of surgeries, discharge criteria and minimal requirements for a DSC, which, are for the safety of patients and better efficiency of the surgical centre (5).

There are several classification of cases in a DSC, most commonly used are Major Ambulatory Surgery, Minor Ambulatory Surgery, Day Case, Day Care, 23 hrs stay, Short stay, etc. We have used Major Ambulatory surgery and Short stay for cases up to 48 hrs and beyond. OPD cases are not true Day Surgery and hence, should not be included. They are merely indicative of the percentage of cases performed at the Centre (6).

A Day Surgery Centre (DSC) is a miniature hospital. It consists of Operation Theatre, recovery area / rooms, staff duty rooms, reception, waiting rooms and doctors changing room / lounge. Additionally, pantry, store, linen and autoclaving room. One Day Surgery Center is a Stand-alone DSC, which is ISO 9001-2008 and FEQH of QCI Certified as 'Optimum'.

Medical Protocols are strictly followed and implemented. Patient Selection was broadly based on the fact that infants and children below 6 months would require monitoring and can go into dehydration very fast, therefore, not ideal for Day Surgery. American Society of Anesthesiologists (ASA) have classified patients on the basis of their physical condition, therefore, ASA I and II were usually chosen for Day Surgery. In some cases, a well-controlled ASA III class of patient can be taken for Day Surgery. (7)

There are three major types of Day Surgery Centres, incorporated in the hospital building itself, like a separate ward with common dedicated OT/OR. Or even separate OT/OR and ward, but, same staff. These are self-contained units or wards in the hospital. Integrated: in the hospital complex, but, independent of the functioning of the hospital. They have separate staffing as well as accounting, but, situated in the hospital compound. Free Standing or Stand alone: centers can be single or multi-specialty. As the name suggests, they are outside of a hospital complex, that is, independent units. Like any existing Nursing Homes or small hospitals, they are self-sustaining units with all basic amenities. (8,9) Among all these, the Stand-Alone model is the most efficient and economical. Probably, it utilizes all positive aspects of Day Surgery and reduces overhead costs. (10)

A General Surgeon's regular OT list does not contain Hepatectomy, Colectomy, Parathyroidectomy and Pancreatectomy as part of the list of common surgical procedures, given their relative rarity. Circumcision, incision and drainage of Paronychia and scar revision are very common, and in fact perhaps more numerous than those listed above. (11)

Patient preparation would mean examination, investigation and surgery. This scheme of management, can be applied to all category of patients. Investigations with relevance to the type of surgery. Medical fitness wherever required. Advice regarding overnight fasting and per-operative medication is self-evident.

Most important step while preparing the patient is the counselling for surgery, particularly, Day Surgery. Not only is it necessary for the patient to understand that they will be discharged on the same day, it would also mean to be able to accept conscious anesthesia. They have to be advised regarding the disadvantage as well as advantages of Day Care Surgery. Patients counseling by the operating surgeon, is more effective than an assistant or Nurses counselling.

Discharge protocols help to ensure that the patient has completely recovered from the surgery and anesthesia. That they have understood the implications of going home and fully understood how to look after themselves and communicate on their own or with the help of their relatives, the referring doctor, if necessary. We must ensure that all instructions are written down and explained to the patient and their relatives, make sure that it has been understood, any query, is to be answered. This requires training of the staff, specifically for this purpose.

In the hospital, we make sure that the patient is fully conscious, oriented, able to walk, take orally and having passed urine, in relevant cases. Further, does not have any complication, then they are fit to be discharged. Presence of a responsible person is a must to take the patient home. Driving by the patient on the day of discharge is not encouraged. A home visit or a phone call or a WhatsApp message on the day of discharge, if necessary, but, mandatory on the next day, usually helps in reassuring the patient as well as ourselves as to know that everything is normal.

Conclusion

Protocols proposed for Day Surgery, implemented meticulously, provides patient safety and overall success of the Day Surgery Center. A careful patient selection and counselling, goes a long way in increasing the efficacy of the DCS Centre.

References

1. Nicoll J H. The Surgery of infancy. ***British Medical Journal*** 1909;11:753-6.
2. Castoro Carlo, Bertinato Luigi, Baccaglini, et al, Policy Brief: Day Surgery: Making it Happen, recommendations from: International Association for Ambulatory Surgery, European Observatory on Health Systems and Policies & WHO.
3. Jain Paras, Somani S., Anaesthesia in Day Care Surgery; ***Bombay Hospital Journal***, Special Issue on Day Care Medicine and Surgery, April 2003, Vol.45, No.2, 198-204.
4. Robert L. Warden J. Suggested international terminology and definition. ***Ambul Surg*** 1998; 6:3.
5. Row NT. ***Protocols of a Day Care Surgery Centre, Recommendations of The Indian Association of Day Surgery***, 2005.
6. Toftgaard et. Al. ***International Terminologies in Ambulatory Surgery and its Worldwide Practice***. Chapter 2. 35:56.
7. American Society of Anaesthesiology, Physical status classification. Available at: http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3106380/
8. Orkand Corporation. Comparative evaluation of costs, quality and system effects of ambulatory surgery performed in alternative setting. A report from Dept. of HWE, USA, 1977.
9. Audit Commission. A short cut to better services. ***Day Surgery in England and Wales***. London, UK: HMSO, 1990.
10. Row T. Naresh. ***Handbook for Day Care Surgery***, Chapter 6, Setting up and planning a Day Care Surgery Center, pg. 25.
11. van Heerden Jon A., Farley David R., Preface, ***Operative Techniques in General Surgery: Minor Office and Outpatient Procedures***: Sept. 2002, Vol. 4, No. 3.