

# Day Surgery Practice in a Public set up – An Audit

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## ABSTRACT

**Introduction:** Day surgeries are conducted in our government hospital integrated with the inpatient surgeries. LTMMC and GH Sion don't have a separate 'Day Surgery' operation theatre. In order to enhance the ambulatory anaesthesia experience it is of prime importance to increase the number of surgeries done as day cases. The objective of the present study was to evaluate the present scenario of day surgeries in a public setup like our hospital.

**Material and method:** Present retrospective audit of day case surgeries was conducted from March 2011 to August 2011 at our government hospital. The audit was conducted in paediatric, urology, ENT, general surgery, and gynecology theatres. A list of elective surgeries that could be done as day cases in each of these theatres was derived from the British Association of Day Surgery-basket procedures. The audit analyzed how many of these probable day surgeries were actually done as ambulatory cases.

**Results:** Over all out of the 784 surgeries only 36 (4.59%) were done as day surgery. There was an average preoperative stay of 1.72 (1.46) days. There was an average post operative stay of 1.68 (1.46) days. There was an average 3.41 (2.27) days of hospital stay for surgeries which can otherwise be done as ambulatory cases.

**Conclusion:** Day surgeries are performed all most minimally in our public setup. Structural and mind set changes to channelize ambulatory surgery may improve their number and ambulatory anaesthesia practice.

**Keywords:** integrated, ambulatory, inpatient

## INTRODUCTION

Ambulatory Surgery or day surgery refers to the practice of admitting into hospital on the day of surgery carefully-selected and prepared patients for a planned, non-emergency surgical procedure and their discharge within hours of that surgery.

Advantages of day surgeries are a high levels of patient satisfaction and parental, in the case of young children as patients receive more individual attention. Day surgeries improve surgery scheduling, reduce staff and hospital costs, help in decreasing the waiting list and above all decrease nosocomial infection. Ambulatory surgeries are as safe, and of the same quality as those procedures done as inpatient surgery.<sup>1</sup> The two setups for conducting ambulatory surgeries in a hospital are by having an integrated setup or 'self contained' unit in the hospital.

Under the integrated setup, the main theatre complex handles the inpatient and the day cases. But a separate self contained ambulatory unit will handle only the day case surgeries. It has its own separate operation theatre, holding area and recovery area.

Providing anaesthesia for day case surgeries is a sub specialty in anaesthesia as ambulatory anaesthesia has its challenges. Proper patient evaluation, risk assessment, complete evaluations to

avoid last minute case cancellations, appropriate anaesthesia for early recovery and lastly protocol driven discharge.<sup>2</sup>

Day surgeries are conducted in our government hospital integrated with the inpatient surgeries. We don't have a separate 'Day Surgery' operation theatre. In order to enhance the ambulatory anaesthesia experience it is of prime importance to increase the number of surgeries done as day cases. The objective of our study was to evaluate the present scenario of day surgeries in a public setup like our hospital, Lokmanya Tilak Municipal Medical Collage and general hospital.

The aim of our study was to find out if our integrated system is able to conduct day surgery cases in adequate number or is there a need to introduce a separate self contained unit. A separate unit will have all the advantages as mentioned above and also help in increasing the number of ambulatory surgeries. For an anaesthetist, it will give an opportunity to practice ambulatory anaesthesia. Present study was a retrospective audit of day case surgeries which were conducted from March 2011 to August 2011 at our hospital.

## MATERIAL AND METHODS

The study was done after ethical approval. The audit was conducted in paediatric, urology, ENT, general surgery, and gynecology theatres. A list of elective surgeries that could be done on day bases in each of these theatre was derived from the British Association of Day surgery-basket procedures.<sup>3</sup> The surgeries that were included are shown in table-1.

We collected retrospective data from hospital records of patients who underwent the above surgeries. The data included date of admission, date of surgery and the date of discharge, demographic data and ASA physical status. We have included patients with ASA grade I and II, age between 1 year and 60 years. We excluded emergency surgeries, patients with morbid obesity and patients with obstructive sleep apnea.

Day surgeries in the present audit were the surgeries for which patients date of admission, surgery and of discharge was the same. We analyzed how many of the audited surgeries were actually done as day surgeries. We also analyzed the average days of admission for these surgeries.

## STATISTICAL ANALYSIS

The data collected was analyzed using SPSS version 22 using descriptive statistics. Percentages and mean were used to represent data.

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General Surgery OT	Gynecology OT	ENT OT	Urology OT	Paediatric OT
Appendicectomy	MTP	Tympanoplasty	VIU	Hydrocele repair
Breast lump Excision	Dilatation and Curettage	Tonsillectomy	Cystoscopy	Ing.Herniorraphy
Circumcision	Diagnostic Laparoscopy	Ear mass excision	DJ removal	Orchidectomy
Fibroadenoma excision	Cervical Biopsy	Adenoidectomy	DJ stenting	Tongue tie release
Gyneacomastia repair	Tubal ligation	microlaryngoscopy	URS	Ochidopexy
Haemorrhoidectomy	Laparoscopic Tubal ligation	Direct laryngoscopy	Cystolithotomy	LN Biopsy
Hydrocele repair			TURBT	Meatal dilatation
Lap.Cholecystectomy				
Orchidectomy				
Umbilical hernia repair				
Varicose vein stripping				

**Table-1:** List of surgeries audited

Surgery Type	Preoperative stay	Postoperative stay	Total stay
ENT	1.28 (0.91)	1.55 (0.91)	2.82 (1.77)
General Surgery	2.33 (1.46)	2.30(1.46)	4.63( 2.10)
Gynecology	1.99 (1.27)	1.97( 1.27)	3.96 (1.88)
Paediatric	0.64( 0.56)	0.64( 0.56)	1.28 (0.92)
Urology	2.52 (2.15)	1.86( 2.15)	4.38 (2.75)
Total	1.72 (1.46)	1.68 (1.46)	3.41 (2.27)

**Table-2:** The average preoperative, postoperative and total hospital stay of patients. Values are in mean and standard deviation

Surgery Type	Total Cases	Day cases
ENT	159	2(1.26%)
Gen Surgery	211	0(0.00%)
Gynec	159	0(0.00%)
Pediatric	162	28(17.28%)
Urology	93	6(6.45%)
Total	784	36(4.59%)

**Table-3:** Total cases done and cases done as day cases. Values are in numbers and proportions

## RESULTS

Totally 784 patients met our inclusion criteria. Total number of surgeries done in each theatre and the percentage of ambulatory surgeries is shown in Table-2. In general surgery and gynecology operation theatres (OT), out of the 211 and 159 surgeries done respectively, in the 6 month period, no surgery was done as day case. The highest number was recorded from paediatric OT in which 28 (17.28%) out of 162 surgeries were ambulatory. 6 (6.45%) out of 93 surgeries in urology OT were day cases. Out of the 159 short surgeries done in ENT theatre only 2 (1.26%) patients were discharged on the same day. Over all out of the 784 surgeries only 36 (4.59%) were done as day surgery.

There was an average preoperative stay of 1.72 (1.46) days. Maximum preoperative stay was in urology and general surgery OT. Minimum preoperative stay was in paediatric OT. There was an average post operative stay of 1.68 (1.46) days. Maximum post operative stay was in general surgery OT. Minimum post operative stay was again in paediatric OT. The average pre and post operative days of hospital stay are shown in Table-3.

## DISCUSSION

Tertiary government hospital like ours should make ambulatory surgery and anaesthesia in par with the current world scenario. Though there is a wide variation among different nations,

countries like US and Canada report conducting 80 to 90 % of elective surgeries as day care.<sup>1</sup> The UK NHS Plan (2000) set a target of 75% of elective procedures being carried out as day cases.<sup>4</sup> The purpose of our audit was to analyze the present scenario of day case surgeries in a tertiary government hospital like ours. This will be the initial step toward improvement in day case surgeries and ambulatory anaesthesia.

Over all out of the 784 surgeries only 36 (4.59%) were done as day surgery. There was an average preoperative stay of 1.72 days. There was an average post operative stay of 1.68 days. There was an average 3.41 (2.27) days of hospital stay for surgeries which can otherwise be done as ambulatory cases.

The lack of inclination towards day surgeries may be explained by the fact that the burden of cost of hospitalization is borne by the government and does not directly fall on the patient or the surgeon. The low level of education among our patients makes them comfortable in an hospital environment ignorant of the nosocomial infections that a hospital causes. Being a teaching institute these short procedures are some times prolonged making it difficult to discharge the patient early. The low rate of day surgeries in our hospital also reflects a lack of awareness of it's advantages.

The preoperative stay may be for preoperative assessment and investigation, optimisation or for keeping patient stand by for any case cancellation. This problem can be tackled by sending the patient to preanaesthesia checkup labelled as 'day case'. So emphasis is laid on their complete preoperative evaluation, preoperative advise and investigation with the aim of preventing case cancellation on day of surgery.

In an integrated system like ours the short surgical cases share the OT with inpatient surgeries. These surgeries may have not been the first or second case. So recovery may not be complete to discharge the patient on the same day. As mentioned above anaesthesia for ambulatory surgery is a sub speciality. If emphasis is not given on the appropriate anaesthetic, patients may have post operative nausea vomiting, pain or delayed awakening which may defer their discharge. Thus in an integrated setup, it becomes important that a special anaesthesia team is involved, along with a separate OT within the main OT complex. This will motivate the surgeon, anaesthetist and all the staff to work towards early discharge.

Other option is to have a self-contained unit on hospital site with its own waiting room, operating theatres, recovery, staff and management structure. This setup has been associated with higher patient satisfaction and reduced cross infection between

inpatient and day surgery patients.

In contrast to the present audit, 225 day care surgery performed in a year in public hospital setting has been reported. This was a prospective audit with protocols but included only general surgery theater.<sup>5</sup> The study concluded that well managed day care surgery can be safe, cost effective and acceptable to majority of patients even in a public setup

The situation is different for day surgeries in other countries. In 2000 NHS in UK recommended a target 75 percent of all elective surgeries to be performed as day cases. An audit from ENT hospital in England reports achieving this target.<sup>6</sup> The NHS modernization agency recommends treating day surgery as the default option for elective surgery.<sup>7</sup>

In USA the health system is more private driven. IAAS gives a high record of 80- 90 percent day surgeries.<sup>8</sup> An audit from community hospital in Japan reports performance of laparoscopic cholecystectomy as day surgery.<sup>9</sup> All the guidelines and recommendations recognize one important aspect for day surgeries - "anaesthesia"<sup>10</sup>

Anaesthetist pre operative evaluation and optimizations before surgical date has now removed the barrier for ASA physical status as limiting for day surgery. Controlled diabetics and morbid obese patients may safely undergo a surgery as a day case if found physically optimized.

Use of ultrasound guided regional anaesthesia has made it possible to discharge patients in which the thoracic or abdominal cavity has been approached by minimally invasive technique on the same day with excellent pain relief. The other key factor recognized for successful ambulatory surgery is that it is a consultant driven practice and the high quality cannot be provided by residents.

Studies have shown that the high quality patient concentration provided by day surgeries may be beneficial for inpatient surgeries. In USA the concept of 23 hour stay for complex surgeries.<sup>8</sup>

Overall day surgeries as they are protocol and consultant driven provide high quality patient care and satisfaction, reduce hospital cost and ensure faster turnover of surgeries. Our future health system may in cooperate a self containing day surgery unit. But at present from our study it appears that day surgery in public setup is at grass root level.

### Limitations

A major challenge for anaesthetist is the proper patient selection. Patients with morbid obesity, patients with obstructive sleep apnea and children less than 1 year have higher rates of post operative respiratory events. ASA physical status 3 and 4 or patients with ischaemic heart disease, patients above 60 years have chances of peri-operative cardiac events. In our audit we have excluded all of the above patients. Major surgical procedures were excluded as they require pre and post operative optimization of patients and cannot be done as day case at least not in the start up.

Day surgeries are very successful in ophthalmic and orthopaedic theaters. We have not audited ophthalmic and orthopaedic theatre due to data and resource limitation.

### CONCLUSION

Day surgeries are performed all most minimally in our public setup. Structural and mind set changes to channelize ambulatory

surgery may improve their number and ambulatory anaesthesia practice.

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