



EVALUATION OF DAY CARE SURGERY IN CLINICAL PRACTICE

Kakani Prudvith*	Assistant Professor, Department of General Surgery, Dr. Pinnamaneni Siddhartha Institute of Medical Sciences and Research Foundation (Dr. PSIMS & RF), Chinnaoutapalli, Gannavaram (Mandal), Krishna District, Andhra Pradesh, India *Corresponding Author
Voruganti Mohan Rao	Professor, Department of General Surgery, Dr. Pinnamaneni Siddhartha Institute of Medical Sciences and Research Foundation (Dr. PSIMS & RF), Chinnaoutapalli, Gannavaram (Mandal), Krishna District, Andhra Pradesh, India
Gandham Chaitanya	Senior Resident, Department of General Surgery, Dr. Pinnamaneni Siddhartha Institute of Medical Sciences and Research Foundation (Dr. PSIMS & RF), Chinnaoutapalli, Gannavaram (Mandal), Krishna District, Andhra Pradesh, India
Kantipudi Kartheek	Postgraduate Student, Department of General Surgery, Dr. Pinnamaneni Siddhartha Institute of Medical Sciences and Research Foundation (Dr. PSIMS & RF), Chinnaoutapalli, Gannavaram (Mandal), Krishna District, Andhra Pradesh, India

ABSTRACT **Background/Aim:** Day care surgery (DCS) allows planned surgical treatment with same-day discharge, reducing hospital stay, cost and risk of nosocomial infection. This study evaluated the efficacy, outcomes and complications of day care surgery in a tertiary care teaching hospital. **Methods:** A prospective observational study was conducted in the Department of General Surgery, Dr. PSIMS & RF, over 24 months (2023 - 2025) among 30 patients who met criteria for day care surgery. Patients were evaluated clinically and with routine and specific investigations, underwent surgery, and were followed up on postoperative day (POD) 3 and 7. Pain was assessed using the Visual Analogue Scale (VAS). **Results:** Most patients (40%) were aged 31-40 years; 60% were male. Open hernioplasty (33%) was the commonest procedure, followed by Jaboulay's procedure (23%) and laparoscopic cholecystectomy (17%). Spinal anaesthesia was used in 47% of cases. Ninety percent of patients had an uneventful recovery; wound seroma occurred in 7% and nausea in 3%. VAS pain scores fell from a median of 6 on POD 0 to 0 in 83% of patients by POD 7. Forty-three percent returned to work within 5 days. **Conclusion:** Day care surgery is a safe, effective and cost-efficient modality for selected minor and major surgical procedures, with low complication rates and early return to normal activity, provided patient selection, anaesthesia technique and postoperative follow-up are optimised.

KEYWORDS : Day care surgery; Ambulatory surgery; Visual analogue scale; Postoperative complications; Patient selection

INTRODUCTION

Traditional inpatient surgery requiring admission, evaluation, operation and prolonged postoperative stay impose considerable monetary, social and psychological burden on patients and their families. Day care surgery (DCS), defined by the Royal College of Surgeons as planned admission for investigation or operation on a non-resident basis with facilities for recovery, has therefore become an increasingly accepted alternative worldwide. Unlike outpatient surgery, DCS patients require a period of specialised postoperative nursing observation before same-day discharge.

The concept dates to James Nicoll's 1909 report of nearly 9,000 paediatric day-case procedures, though widespread adoption in adults was delayed until the mid-20th century amid safety concerns (Nicoll, 1909). Advances in anaesthesia and minimally invasive technique have since made DCS the standard pathway for many procedures once managed only as inpatients, with the United Kingdom now performing around 62% of elective surgery as day cases (Toftgaard, 2012). Reported benefits include reduced cost, shorter waiting lists, lower nosocomial infection rates, earlier return to normal activity and reduced psychological disturbance, particularly in children, while disadvantages include the need for a responsible caregiver at home and restriction to experienced staff.

This study evaluated the efficacy, advantages, disadvantages and clinical outcomes of day care surgery in patients managed at a tertiary care teaching hospital, with follow-up.

AIMS AND OBJECTIVES

To study the efficacy of day care surgery in patients admitted to Dr. PSIMS & RF over one year, with one-year follow-up; to study the advantages and disadvantages of DCS; and to evaluate the management of DCS.

MATERIALS AND METHODS

This prospective observational study was conducted in the Department of General Surgery, Dr. Pinnamaneni Siddhartha Institute of Medical

Sciences and Research Foundation (Dr. PSIMS & RF), a tertiary care teaching hospital in Gannavaram, Krishna District, over 24 months (2023 to 2025). Thirty adult and paediatric patients undergoing day care surgery were enrolled.

Inclusion criteria were patients of any age who satisfied criteria for DCS and completed follow-up on postoperative day (POD) 3 and 7. Patients with a hospital stay exceeding 24 hours, incomplete follow-up, significant comorbidities, immunocompromised status, or unwillingness to undergo this mode of treatment were excluded.

All patients underwent detailed history-taking and systemic and local examination, recorded on a standard proforma. Routine investigations (blood and urine analysis, blood urea, serum creatinine, viral markers, chest radiograph) and case-specific investigations (e.g., ultrasonography for hernia, fibroadenoma or cholelithiasis) were performed. Postoperative pain was assessed using the Visual Analogue Scale (VAS, 0-10) on POD 0, 3 and 7. Data were analysed descriptively as frequencies and percentages.

RESULTS

Of the 30 patients studied, the majority (40%) were aged 31-40 years, followed by 21-30 years (36.7%); 60% were male and 40% female (Table 1). Open hernioplasty was the commonest procedure (33%), followed by Jaboulay's procedure (23%), laparoscopic cholecystectomy (17%), excision biopsy (13%) and lateral sphincterotomy (13%) (Table 1).

Table 1. Demographic Profile and Operative Procedures (n = 30)

Variable	Category	No. of Patients	Percentage
Age group (years)	10-20	4	13.3%
	21-30	11	36.7%
	31-40	12	40.0%
	41-50	3	10.0%
Gender	Male	18	60.0%
	Female	12	40.0%

Operative procedure	Open hernioplasty	10	33.3%
	Jaboulay's procedure	7	23.3%
	Laparoscopic cholecystectomy	5	16.7%
	Excision & biopsy	4	13.3%
	Lateral sphincterotomy	4	13.3%

Spinal anaesthesia was administered in 47% of patients, general anaesthesia in 17%, peripheral nerve block in 23% and short general anaesthesia in 13% (Table 2). Recovery was uneventful in 90% of patients; wound seroma occurred in two patients (7%) and one patient (3%) developed postoperative nausea and vomiting requiring overnight observation (Table 2).

Table 2. Type of Anaesthesia and Postoperative Complications (n = 30)

Variable	Category	No. of Patients	Percentage
Anaesthesia	Spinal	14	46.7%
	Peripheral nerve block	7	23.3%
	General	5	16.7%
	Short GA	4	13.3%
Complications	Uneventful	27	90.0%
	Wound seroma	2	6.7%
	Nausea/vomiting	1	3.3%

VAS pain scores were high on POD 0 and fell progressively, with the majority of patients scoring 2-3 by POD 3 and 83% scoring 0 by POD 7 (Table 3). Forty-three percent of patients returned to work within 5 days and 53% within 6-10 days (Table 3).

Table 3. Postoperative VAS Pain Score and Return to Work (n = 30)

Variable	Category	No. of Patients	Percentage
VAS score, POD 0	5	1	3.3%
	6	17	56.7%
	7	10	33.3%
	8	2	6.7%
VAS score, POD 3	2	15	50.0%
	3	12	40.0%
	4	3	10.0%
VAS score, POD 7	0	25	83.3%
	1	4	13.3%
	2	1	3.3%
Return to work (days)	≤ 5	13	43.3%
	6-10	16	53.3%
	11-15	1	3.3%

DISCUSSION

Day care surgery is now established practice worldwide, having evolved from minor elective procedures in fit patients to a standard pathway for many complex procedures previously managed as inpatients. Patient satisfaction with DCS is consistently high, attributed to shorter waiting times, lower infection rates and the comfort of recovering in familiar surroundings, and is increasingly regarded as a marker of quality of surgical care (Fitzpatrick, 1991).

In the present series, the age distribution (predominantly 21-40 years) reflected the case-mix of elective general surgical procedures selected for DCS, consistent with the wide age range reported by Lingaiah et al. (2015) in a similar South Indian cohort, and with reports confirming the feasibility of DCS in both paediatric (Letts et al., 2001) and elderly patients (Dhar, 2008; Carlomagno et al., 2016) when ASA grade and comorbidity are appropriately assessed.

The predominance of hernia repair and Jaboulay's procedure in this study is consistent with published series in which hernia repair, excision biopsy and hydrocele surgery form the bulk of day care caseloads (Lingaiah et al., 2015). Randomised evidence in elective hernia repair has shown lower early complication rates with day care management compared with inpatient surgery, supporting its safety in appropriately selected patients.

Anaesthetic technique is central to a successful day surgery pathway. Spinal anaesthesia, used in nearly half of the present cohort, provides faster onset and better muscle relaxation than epidural block with comparable haemodynamic stability (Gupta et al., 2011), while regional and peripheral nerve block techniques are increasingly

favoured for prolonged analgesia and lower postoperative nausea and vomiting (Choi et al., 2013; Jafra & Mitra, 2018).

The overall complication rate of 10% (seroma 7%, nausea 3%) in this study compares favourably with the 8.9-33.3% rates reported elsewhere (Kapritsou et al., 2015; Singh et al., 2016), and the nil surgical-site infection rate is lower than the 7-18% wound infection rates reported after hernia surgery in other series (Zaheer et al., 1993; Malik et al., 2010), likely reflecting strict preoperative antibiotic prophylaxis and careful patient selection. The seroma rate of 6.7% was comparable to the 6-12.5% reported after laparoscopic hernia repair (O'Riordain et al., 1999; Kallianpur et al., 2007).

Postoperative pain, an important determinant of patient satisfaction and safe discharge, declined steadily from POD 0 to POD 7, consistent with the established reliability of VAS for tracking acute pain (Bijur et al., 2001) and less severe than the persisting moderate-to-severe pain reported at 24-48 hours in a larger day-surgery cohort (Mwaka et al., 2013), possibly reflecting differences in analgesic protocols and case-mix.

Overall, these findings affirm that with appropriate patient selection, anaesthetic technique and structured follow-up, day care surgery can be performed safely across a range of general surgical procedures, with complication rates comparable to or lower than inpatient surgery and rapid return to normal activity.

CONCLUSION

In this series of 30 patients, day care surgery was safe and effective for a range of minor and major general surgical procedures, with a low overall complication rate (10%), no surgical-site infection, and early return to work in most patients. Success depended on careful patient selection, appropriate choice of anaesthesia, structured postoperative analgesia and close follow-up, supported by a multidisciplinary team of surgeons, anaesthetists and nursing staff, with a back-up inpatient facility available for the few patients who require admission.

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