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Original Article

Surgery Section

Factors Hindering Practice of Day Care Surgery in a Tertiary Care Centre in Southern India: A Patient's Perspective

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ABSTRACT

Introduction: Day care surgery offers cost containment, effective usage of hospital beds, reduced incidence of nosocomial infection and early recovery in home environment. In developing countries like India, there are various factors that influence the success of day care surgery.

Aim: To assess the factors hindering the practice of day care surgery in a tertiary care centre in South India.

Materials and Methods: This observational study was conducted in the Department of General Surgery, JIPMER, Puducherry, India, from January 2013 to March 2014. All male patients with uncomplicated inguinal hernia who were admitted for elective surgery under one particular surgery unit and who were found fit for discharge on Postoperative Day 1 (POD1) based on clinical fitness were included in the study. A questionnaire containing the patient's acceptance decision, VAS (Visual Analogue Scale) pain score and the reason for non acceptance if any was used for assessment.

Results: Among the 89 patients who were fit for discharge on POD1, the decision for discharge was accepted by 57 patients. 32 patients were not satisfied of the decision for discharge on POD1. The common reasons for dissatisfaction with the decision were persistent pain at operated site (13 patients with mean VAS score 8.3), non availability of health care resources in their locality (12 patients) and unwillingness to travel on POD1 (four patients).

Conclusion: A comprehensive and well presented preoperative counselling along with an effective primary health service would help in promoting day care surgery in developing countries.

Keywords: Inguinal hernia, Hernia surgery, Primary health care, Spinal headache

INTRODUCTION

Day care surgery is the standard of care for minor surgical procedures in developed countries. It is a fast growing and well accepted way of providing health care to patients. The main advantages of day care surgery are cost containment, early mobilization of the patient, less pain because of minimally invasive surgical techniques, early return of patient to their home environment resulting in reduced risk of cross infection in hospitals and less loss of pay due to early return to work, rapid recovery due to advancements in anaesthesia and surgical techniques and better use of resources [1]. The disadvantages of day care surgery are that it cannot be done for all patients and for all surgical procedures as surgical fitness for day care procedures is demanding, unanticipated readmissions, need for more operating rooms and increased skill among health staffs [2].

The procedures commonly done in day care set up include surgeries for hydrocele, hernia, varicose veins, varicocele, anal fissures, breast lump excision and diagnostic laparoscopic procedures. Hernia is one of the common surgical problems in day to day practice in developing countries. It forms the bulk of the preoperative waiting cases in the surgical outpatient department especially in government hospitals. Bed occupancy percentage of these patients in the postoperative period is also high preventing judicious use of beds in government hospitals, where, the waiting period for admission is long, even for major cases like malignancies [1].

Day care surgery can lead to shorter waiting lists, and help to rationalize the costs of surgical treatments [3]. Hence, there is an increased demand for day care surgeries in India. Though used widely in developed countries due to its advantages, utilization in developing countries has been low. There are various factors that influence the success of day care surgery like financial constraints in developing a separate day care unit, insufficient primary health care facility and patient's psychosocial factors [4,5].

Factors relevant for the success of day care surgery are proper patient selection, adequate patient information, preoperative assessment, anaesthesia and good postoperative analgesia, patient acceptance and effective audit [1]. Concept of day care surgery has helped to lessen these problems by facilitating early discharge of patients undergoing minor surgical procedures. This concept has been well accepted by the developed countries as the socioeconomic status and health care facility are excellent in developed countries [4]. Inguinal hernia is one of the most common surgical problems but still baffles the surgeon at large mainly due to the complex anatomy and pathology involved in the development of a hernia. The huge backlog of hernia cases along with the need for improved basic facilities, skilled surgeons and procedures at affordable costs forms the major pitfall for day care surgery for hernia in India. The present study analyses the factors that affects the acceptance of early discharge by patients undergoing uncomplicated inguinal hernia surgery in South Indian population.

MATERIALS AND METHODS

This prospective questionnaire study was conducted in the Department of General Surgery, JIPMER, Puducherry, India, from January 2013 to March 2014. JIPMER Ethics Committee approval was taken before starting the study. All male patients with uncomplicated inguinal hernia who were admitted for elective surgery under one particular unit were recruited for the study. On POD1, decision to discharge the patient, was taken by the unit head based on objective parameters like blood pressure, pulse rate and temperature and subjective parameters like general well being of the patient and nature of the wound. Patients who were determined to be fit for discharge on POD1 were included in this study to determine factors for acceptance of early discharge. Patients with deranged vitals, additional surgical procedures during the surgery, wounds with hematoma or seroma, presence of a drain, and patients with uncontrolled comorbid conditions were

determined to be unfit for discharge and were excluded from the study. Demographic parameters of the patients were noted. All patients were admitted a day before for preoperative counselling on nature of the disease, nature of the surgery and plan of early discharge on POD1. Intraoperative findings like type of anaesthesia used, characteristics of the hernia, type of surgery done (herniotomy, hernioplasty etc.,) were noted.

All patients were advised to have oral feeds after six hours of surgery and were encouraged to void as early as possible. Early ambulation was advised in all patients. Complaints like pain, postoperative nausea and vomiting were noted. Pain relief was achieved by use of intramuscular ketorolac for 1st 24 hours postoperatively and then oral NSAIDs on the following days. Pain intensity at 12 hours post surgery was assessed using VAS. A questionnaire containing the factors affecting the acceptance of discharge on POD1, pain score using VAS and the reason for non acceptance if any, were used for assessment. Patients were asked to specify one important factor that prevented their acceptance of discharge on POD1.

STATISTICAL ANALYSIS

SPSS software version 20 was used for statistical analysis. Categorical data were expressed as numbers, and a Chi-square test was used to evaluate the distribution differences. A p-value <0.05 was taken as significance.

RESULTS

A total of 128 patients with inguinal hernia were operated during the study period. Among these, 89 patients were found to be fit for discharge on POD1. [Table/Fig-1] depicts the demographic characteristics of these 89 patients.

The mean age of the patients who accepted discharge on first postoperative day was 38±2.6 years and it was 46±3.2 years for patients who did not accept early discharge. The p-value was highly significant (<0.001). Majority of these patients were agricultural laborers (48%). 68 % of these patients were residing around 50-100 km from the institute. Average distance of their residence from the nearest primary health centre was 22±2.3 km.

Among the 89 patients, 53 patients were operated for unilateral inguinal hernia and 36 for bilateral inguinal hernia. Spinal anaesthesia, general anaesthesia and laryngeal mask airway were used in 53 patients, 16 patients and 20 patients respectively. Indirect sac was present in 56 cases and direct sac was present in 33 cases. All patients underwent hernioplasty using non absorbable prolene mesh. Among the 53 patients who underwent surgery under spinal anaesthesia, 26 did not accept discharge from hospital on POD1. A total of five patients had post spinal headache and only one patient who developed spinal headache accepted discharge on POD1.

Postoperative Nausea And Vomiting (PONV) was present in 49 patients in our study. Among the 53 patients who underwent spinal anaesthesia, 34 developed PONV and of these patients, 26 did not accept discharge on POD1. In our study, 36 patients underwent hernioplasty under general anaesthesia (laryngeal mask airway and endotracheal intubation). PONV was seen in 15 patients who underwent surgery under general anaesthesia and five of them did not agree for discharge on day 1.

Urinary drainage by catheterization was done in 12 patients. Mean pain score of 89 patients at 12 hours and 24 hours post surgery by VAS scale was 3 and 6 respectively. The 24 hours VAS score of patients who accepted discharge on POD1 was 4 and it was 7 for patients who did not accept early discharge from hospital (p = 0.04).

Among the 89 patients who were fit for discharge, the decision for discharge was accepted by 57 patients. There were multiple factors that played a role in patients accepting early discharge. The common reasons for dissatisfaction with the decision were persistent pain at operated site (13 patients), non availability of health care resources in their locality (12 patients) and unwillingness to travel on POD1 (four patients) [Table/Fig-2]. The mean VAS score of patients who had pain as their main reason (13 patients) for not accepting early discharge was 8.3.

Demographic parameters		Acceptance group (for discharge on *POD1) (n - 57)	Non acceptance group (for discharge on *POD1) (n - 32)	p-value**
Age (mean±SD) years		38±2.6	46±3.2	<0.001
Monthly Income (Rupees)	<2000	23	29	<0.002
	>2000	34	3	
Distance of residence from JIPMER hospital (mean±SD) km		53 ± 2.3	110 ±2.8	<0.001
Distance from nearest Primary health centre (mean±SD) km		22± 1.8	34± 2.4	<0.001
Hernia	Unilateral (%)	44	9	<0.001 OR – 8.6
	Bilateral (%)	13	23	
Anaesthesia	Spinal Anaesthesia	27	26	0.006 OR – 4.8
	Laryngeal Mask Airway	16	4	
	General Anaesthesia	14	2	
VAS score at 12 hours (mean)		3	4	0.07
Postoperative Nausea Vomiting		18	31	<0.001
VAS score at 24 hours (mean)		4	7	0.04

[Table/Fig-1]: Demographic parameters of the patients.
*POD 1 – Postoperative day 1.
** Chi-square test (**p-value) was used.

Most important factor for each patient	No. (n-32)
Pain	13
Non availability of good health service nearby	12
Denial to travel on postoperative day 1	4
Other reasons (lack of money and non availability of appropriate transport)	3

[Table/Fig-2]: Factors affecting acceptance of early discharge.

DISCUSSION

Day care surgery has increased now-a-days due to the advancement in surgical as well as anaesthesia techniques [1]. Though, day care surgery has become the standard of care for inguinal hernia patients in developed countries, various factors like financial constraints in developing a separate day care unit, insufficient primary health care facility and patient's psychosocial factors preclude successful establishment of day care surgery in developing countries [4,5]. This study was conducted to analyse the factors that affect acceptance of day care surgery by patients with inguinal hernia in a tertiary care centre in Southern India.

In our study, the patient acceptance rate for early discharge was only 64%. Comparing the demographic characteristics of the patients, it was found that patients who accepted the decision of early discharge were predominantly young. This may be explained by the possibility that acceptance group patients were more physiologically tolerant to surgery. Older patients tend to be restricted to bed due to reasons like generalised malaise, co-morbid conditions and poor tolerance to pain [6,7]. Though, the older patients were fit for discharge on grounds of good control of their comorbid illness, these patients were not comfortable to get discharged due to the apprehension over poor access to health care if some mishap is to happen to them. Expert consultation for the management of complications arising out of comorbidities is not widely available in our rural communities.

Distance of the patient's residence from the treating hospital is an important factor in the patient's acceptance towards discharge [1,8]. Patients hailing from place nearer to the operating hospital accepted early discharge when compared to patients from far off places. Patients would feel more comfortable and secure when the operating hospital is closer to their locality. Being a tertiary care centre, the average distance between residence of the study patients and our hospital was 88±5.7 km. Patients who accepted discharge on POD1 had their residence in close proximity to our institute, with an average distance of 53±6.2 km, as compared to 110±3.5 km for patients who did not accept early discharge. Travelling a long distance after surgery and non feasibility of revisit in case of emergency would have been responsible for the non acceptance.

Nature of the problem and the mode of anaesthesia used are the most important factors that decide the success of day care surgery [1]. Bilateral hernia and surgery under spinal anaesthesia were found to negatively influence the agreement for early discharge. Extensive dissection in case of bilateral hernioplasty would produce more pain and discomfort in the postoperative period [9,10]. High incidence of postoperative nausea and vomiting in 34 patients out of 53 (64%) and spinal headache in four patients prevented easy acceptance of early discharge in patients who received spinal anaesthesia. Only eight patients out of the 34 with PONV accepted early discharge. Treatment of minor ailments in the postoperative period and prompt referral in case of complications is a primary requisite for day care surgery [1,6]. Primary health care in our part of India is not well developed. The primary health care is either with poor facilities or absent in the nearby area. Hence, the patients with the above complaints on POD1 were hesitant to get discharged.

Recent innovations in postoperative analgesia and anaesthetic technique have led to more and more surgeries be amenable to day care surgery [1]. In hernia surgery, use of parenteral NSAIDS has been approved with significant reduction of pain [6]. In our study, all patients had adequate pain relief at 12 hours postoperative period, with an average VAS score of 3. The mean VAS score at 24 hours was high (VAS = 6) as compared to the VAS score at 12 hours post surgery. This could be possibly explained by the fact that patients are more anxious at discharge, thereby exaggerating the complaints. The lack of well being after discharge of elderly patients is caused by low levels of feelings of security among them at discharge [11].

Patient's perspective of day care surgery and the various psychosocial factors affecting it are essential factors for a successful day care surgery unit [9,10]. Our study showed that postoperative pain and non availability of health care facility in the vicinity were the most common factors that negatively influence the acceptance of early discharge in our population. Anxiety about the surgery done and development of complications could have altered the pain tolerance in these patients. This could be reduced by an effective preoperative counselling.

LIMITATION

The study has its own limitations like, the sample size is small when compared to other studies and a subjective way of assessment was followed to study the factors affecting acceptance of early discharge from hospital. A long term follow up of the patients was also not done in this study.

CONCLUSION

A comprehensive and well presented preoperative counselling along with an effective primary health service would help in promoting day care surgery in developing countries.

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