



A STUDY OF UNCOMPLICATED INGUINAL HERNIA REPAIR AS A DAY CARE IN GOVERNMENT HOSPITAL SETUP

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ABSTRACT

Day-care surgery is defined as planned investigations or procedures on patients who are admitted and discharged home on the day of their surgery. In this prospective and observational study on 50 patients who underwent treatment of uncomplicated inguinal hernia at ESIC medical college, Bangalore, Karnataka. We aim to study the immediate and long-term post-operative complication and patients' satisfaction and to assess the feasibility of day-care surgeries in government institute. Inguinal hernia is one of the commonest surgical operations performed with the introduction of Day Care Surgery for Inguinal Hernia repair. It reduces the cost and duration of hospital stay. It is being one of the preferred methods of inguinal repair now. In the study, 2 out of 50 (4%) day-care surgery patients had to be kept for more than 23 hours. Only 1 out of 50 patients (2%) was readmitted. The readmission rate of 2% is at par with 2-3% recommended by Royal College of Surgeons. The immediate post-operative and at the end of 7th post-operative day complications were in fact lower. Majority of patients (94%) were satisfied from the surgery and preferred day-care surgery, also the success rate, complication rate and patient satisfaction were comparable with specialized day surgical unit treating for inguinal hernia. From our study, we may conclude that even with the shortcomings of the public health care setup of developing nation, the day-care hernia repair can be done without any major immediate or long term complication as compared to routine-care surgery.

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INTRODUCTION

Day-care surgery is defined as planned investigations or procedures on patients who are admitted and discharged home on the day of their surgery but who require some facilities and time for recovery¹. In most countries this means that the patient spends a few hours in hospital and does not stay overnight. However in USA and a few other countries, it includes patients who may spend up to 23 hours in hospital. In this study, the 23 hours criterion is followed. Day-care surgery is not a new concept; infact the earliest report is in 1909 by a Glasgow surgeon James Nichol², but the concept did not become popular till 1960 when first hospital based ambulatory unit was developed³. In the day-care, the patients and the procedures are selected in such a way so as to cause minimal harm or disturbance to the patient and his life. One has to be very careful and judicious in selecting the appropriate procedure and patients as otherwise it can lead to major complications. All the preparations and facilities required in a major surgery should be met with in a day-care procedure. Inguinal hernias occur in about 15% of adult men and hernioplasty is the most common surgical procedure performed by general surgeons⁴. The repair of inguinal hernia provides a major surgical workload which is the reason for us to choose inguinal hernias repair for this study. As the concept of day-care surgery is yet to flourish in India, especially in

Government setups, care needs to be exercised in explaining the patients this 'new' concept. The concept is not very popular in the setup because of many factors. First and foremost is the reluctance of the caregivers to provide such service to the patients. Day-surgery is an innovative approach to surgical health care and, as in all innovative situations; there may be initial resistance to change⁵. Secondly, the large number of patients received in the outdoor department makes it difficult for doctors to segregate the patients suitable for day-care surgery and provide counseling and directions to the patients needed for day-care surgery.

The patient factors play an important role in the day-care. Patients need to be counseled thoroughly for the service and foretold about the instructions for the same. Due to false belief of the patients that being under supervision (routine-care surgery) in hospital is better, it is difficult to convince the patients in Government setups to go for day-care surgery. Such factors lead to underuse of day-care surgery in government institutions. Also the lack of specialist day surgery unit and lack of support infrastructure-- shortfall of presence of General Practitioners (GP) nearby, absence of caretaker of the patient at the home, distance from the hospitals etc. affect the day-care surgery. However, day-care surgery in government health care setup is the need of the hour. In a government hospital with tremendous workload in surgical departments, day procedures

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help in making indoors beds free for the admissions of other patients who need to be hospitalized. In the long run it is cost effective to both the hospitals and the patients. In addition, 'a day procedure', makes it look like a 'minor' surgery to the patient; therefore reduces the anxiety of the surgery.

Being a day procedure, it reduces hospital stay and hence reduces the chance of hospital acquired infections. The recovery after day-care surgery is faster in familiar surroundings, which is very important for recovery of patients of older age group and children. Day-care surgery also leads to early resumption of day to day work for working population. . It has no deleterious effect on wound healing. It reduces the incidence of complications, uplifts the patient morale and accelerates his recovery (Furquarson)²⁰. Early ambulation has no effect on recurrence rate (Glasgow)²¹. Immediate post-operative complication following repair as a day care under local anaesthesia is no higher and are lower than for in patients or out patients under general anaesthesia (Baskar Ville)²² patient acceptability high. Early discharge from the hospital has no influence on recurrence rate (Latham Flangman)²³.

The development of ambulatory hernia surgery is a great step forward. The results however measured are very surgeon dependent if done correctly and carefully, patients will be grateful and appreciative and society will benefit by freeing up limited hospital resources for critically ill (Wantz)²⁴.

In this study, we show that day-care surgery is possible and successful even with above mentioned shortcomings. This study makes an effort to prove that the day-surgery for Inguinal hernia can be done in government health care setup safely and successfully without any specialist day- surgery unit. We also study the feasibility of inguinal hernia repair using local anesthesia for Day care surgery, the postoperative complications like seroma, haematoma, scrotal edema, infection, recurrence. Finally to study the number of days required for ambulation and resumption to work after surgery.

METHODS

Data Collection

In the present study, 50 cases of uncomplicated inguinal hernia who underwent day-care surgery during May 2015 to June 2016 were studied at ESIC Medical College and PGIMSR, Rajajinagar, Bangalore. It is a tertiary referral center catering to referrals from entire state of Karnataka. All patients aged 20-60yrs with primary inguinal hernia and willing to participate in Day care surgery programme were included in this study. Patients with recurrent, inguinoscrotal and complicated hernias were excluded from the study.

In the study the day-care surgery was defined as the surgery in which the patient was discharged within 23 hours of admission. A Proforma was made to record the details of the patient and the surgery, thus closely following the patient pre, intra and post operatively. Patients were explained about the type of anesthesia and surgery each patient was explained about the advantages of surgery, early mobilization, early discharge and socio-economic advantage of day-care surgery. Various complications, the number of patients requiring unplanned admissions or re-admission, patient satisfaction were emphasized upon, prior consent was taken before they were admitted. Patients were asked what they would prefer if they develop hernia on the contralateral side and what they would recommend to friends and relatives. Patient satisfaction

was measured in terms of percentage of patients recommending day care surgery for both situations. For day-care surgeries, the patient selection criteria included presence of a responsible attender and access to a telephone. Patients were counseled in the OPD and explained the procedure of day-care surgery. They were given a contact number to contact in case of any doubt. Also their contact number was noted and instructions were given to the mon the phone in case of need. All were operated under local anaesthesia keeping in mind that the patient will be preferably discharged on the evening of surgery.

For day-care surgeries, the patient discharge criteria included vital signs for atleast one hour, patient orientation to time, place and person, able to tolerate fluids, to void and to walk, and minimal nausea, vomiting and pain. Prolonged stay was defined as duration of hospital stay exceeding 23 hours. Patients were given instructions to call if there was any discomfort and return to the hospital in case of any distress. Patients were followed up of seventh day after surgery. Patient requiring to be admitted before this duration were defined as readmission. All other patients were termed to have successful surgery.

Analysis of Data

Data was analyzed to study the variables such as age, type, duration of stay, Post-operative pain, suture removal, post-operative complications-immediately and at the end of post-operative day (POD) 7. The other parameters such as resumption of activities of daily living, resumption of professional work, Cost-effectiveness, Early recurrence were analyzed.

RESULTS

Inguinal hernia was more common in the age groups of 30-60yrs (Figure 1). Groin hernias were the commonest presentation. Indirect and right sided were common in the study and majority of patients in our study presented with less than 6 months of duration of symptoms and operated. It is comparable to previous studies (Table1).

All cases were operated under local anesthesia. Time taken for the patients to get back to normal activity was 7-10days. Day care surgery for hernia repair was very cost effective. The post-operative complication rate was minimal and during the brief follow-up there was no recurrence. Among the 50 cases of inguinal hernia distribution of clinical types were as follows(Figure 2).The average time taken for the day care procedure was 40-45 mins in majority of the patients (Figure 3).Patients had minor immediate post-operative complications(urinary retention and vomiting & nausea). The Post-operative pain was analyzed at 24hrs and 72hrs (Figure 4).Local complications like seroma, haematoma, wound infection, scrotal edema, 7.5% had seroma, and 5% had haematoma. All the complications treated conservatively with scrotal support and analgesics. In previous studies haematoma noted in 3.8% of cases (S.R. Cannon 1982)¹⁸, 8.7% of cases (B. Milliant 1993)upto 15% of cases (Check C M 1998) 4% of cases (Check C M 1998) 4% of cases (Bhollasinghsidhu 1999)¹⁷ and 5% of cases (Keith W. 2001).These are similar to the present study and comparable with the previous studies.3 out of 50 (6%) patient developed complication (2seroma, 3 seroma with hematoma,1 pain) when follow-up on post-operative day-7 was done. Patient satisfaction was 94% patients with day-care surgery. In the present study, amongst

the 3 patients who were dissatisfied with day-care surgery, though the patient had uneventful immediate post-operative recovery, he had pain at home in first 24 hours after discharge. For this he had to call for help to the contact assigned. However, he had no complaint on the follow-up post-operative day-7. The duration of postoperative stay has been falling in recent years after the introduction of day care surgery. It not only relieves hospital waiting lists but also represents an economic advantage and has certain social benefits for the patients. In our study 82% of the patients were discharged on the same day and 2.5% of the patients were discharged by the 3rd post-operative day due to inadequate facilities.

Previous studies show that post-operative stay for short stay surgery was 3-4 days (Sven Kornhall. 1976)¹⁶, 2.2 day (Makuria 1979)¹⁹ 3.8 days (S.R Cannon 1982)¹⁸, 2-3 days (glassow1984). This is comparable with the previous study which shows that day care surgery can very well be practiced in our set up. Return to normal activity does not only depend on the type of repair done and type of anesthesia rather it depends on the socio-economic status, education level and type of work they do.

In our study patients who were obese and those who do heavy and strenuous work took more time when compared to patients who do light work. The mean time to return to normal activity was 12 days. Average expenses at our center for inguinal hernia repair as a day care surgery was Rs. 2000- 3000 which proved out to be very cost effective. The recurrence rate for all groin hernias 2.9% to 30% (H.G. Doctor 2001)¹⁴ 2.9-25% (Benravid 1998)¹⁰. In present study the recurrence rate is 0 %, it cannot be compared because the study group is small and not all patients turned up for regular follow up and follow up period was less. It is very difficult to project accurate incidence of recurrence as it will depend on the length of follow up.

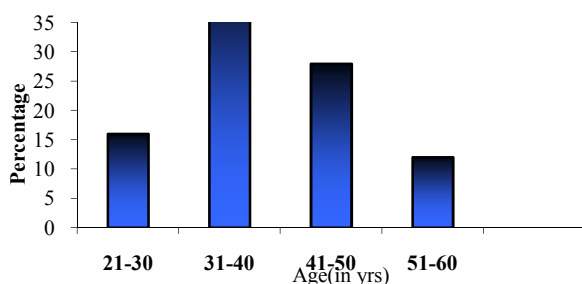


Figure 1 Age distribution

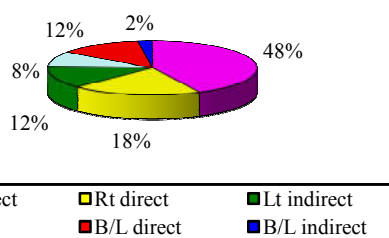


Figure 2 Clinical types

DISCUSSION

Inguinal hernia surgery forms a substantial proportion of the general surgical workload. Inguinal hernia repair is ideally suited to day surgery and increasing numbers of procedures are being performed in this setting⁶.

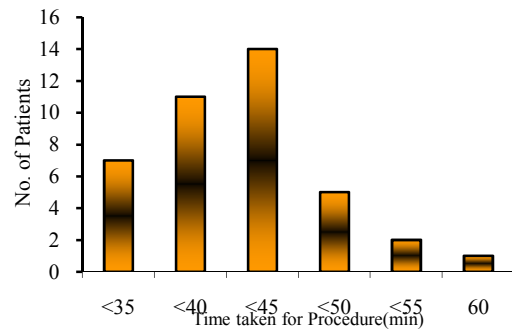


Figure 3 Time for procedure

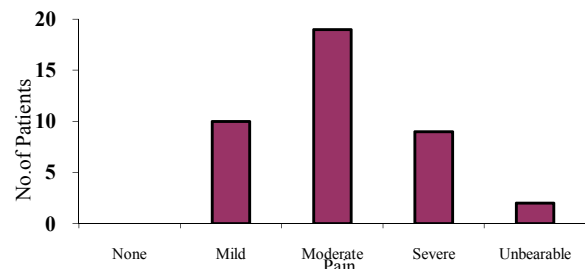
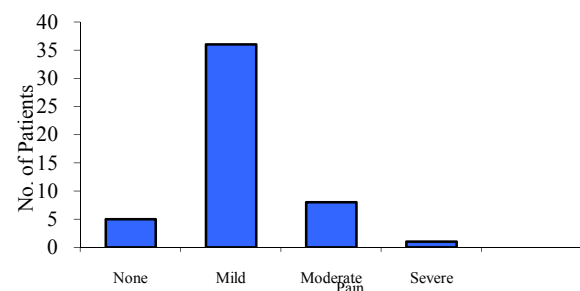


Figure 4 Post-Operative pain at 24hrs



Post-operative pain at 72 hrs

Table 1 Duration of illness

Duration	Bhola Singh & Sidhu	Present study
<6 months	12%	60%
6- 1 yr	56%	35%
>1yr	32%	15%

Table 2 Comparison with other studies

	Our Study	Paanjen <i>et al</i> ⁶	Duhamis <i>et al</i> ⁷	Punit <i>et al</i> ⁸
Patient satisfaction	94%	93.55%	90%	
Successful surgery	94%			93.90%

Table 3 Duration of post-operative hospital stay

Discharge Day	Actual no. discharged
0	41
1	6
2	1
3	1

This reduces the inconvenience and risk to the patient associated with in-patient (routine-care) hospital stay and also substantially reduces the cost associated with the surgery⁷. In the present study, the upper age was limited to 60 years in day-care surgeries so as to avoid major complications in the older patients. However, in the study by N. Mishra *et al*, patients' age ranged between 1 month and 90 years, and in the study by E. O. Oje *et al*, age ranged between 1 week and 100 years⁸. Similar to our results, in both of these studies, there were no

major post-operative complications. Hence, day-care surgery may be suitable for all age groups ranging from 1 week to 100 years. The Surgeries done under General and Spinal anesthesia are associated with longer stay as compared to those done under Local anesthesia. Hence normally in day-care surgeries, Local anaesthesia is the preferred mode of anaesthesia. It also avoids the complications of General anaesthesia such as post-operative nausea and vomiting (PONV), drowsiness etc. and the complications of Spinal anaesthesia like urinary retention. In our study all patients were operated under local anesthesia. In the present study, 1 patient out of 50 developed recurrent urinary retention and had to be readmitted. In the study by T. Naresh Row *et al*, one patient out of 75 required readmission due to excessive drowsiness and four patients had urinary retention for which urinary catheterization was necessary⁸. They were discharged home with catheter. In our study, none of the patients were discharged with catheter or drain. In this study, only 2% patients under the day-care surgeries had complications on post-operative day-7 compare¹⁰. However, their follow-up time was very long-- > 1 years). 94% patients in our study had a satisfactory experience with day-care surgery. Paanjen *et al*. reported the similar rate of patient satisfaction (93.55%), whereas Dhumale *et al* reported only 90% patients satisfaction rate (Table 2)^{11,12}. Surgery was successful in 94% of patients in the present study, same as success rate reported by Putnis *et al* (Table 2)¹³. Much has been said about the requirement of specialized day-care surgery unit for continuing this strategy. The special setup which includes a surgical consultant, dedicated staff and operation theatres for day-care surgery sure streamlines the procedure and allows for greater satisfaction for the patients. But, often the lack of these units in government health care setup has been used as reason for denying patients the benefits of day-care surgery. However, we show in our study that day-care surgeries done in general surgical unit without any specialized unit did achieve high patient satisfaction and low complication, suggesting that day-care surgeries can be performed successfully in public health care setup without day-care unit or surrounding specialized support infrastructure.

CONCLUSIONS

Even with the shortcomings of the government health care setup of developing nation, day-care surgery for uncomplicated hernia repair in patients can be managed without significant complications as compared to routine-care surgery. Results are comparable to standardized day-care units also.

A. Day care surgery when well-managed, is both safe and cost effective and is acceptable to majority if patients even in government hospital setting. B. High quality day surgery is dependent on careful patient information, assessment, skilled surgery, effective local anesthesia, adequate postoperative analgesia, rapid communication and accessibility and continued audit.

Looking at the advantages of reduction of hospital stay, less postoperative pain and greater satisfaction, day-care hernia should be promoted. Day-care surgery could be expanded in government setups for inguinal hernia and many other surgeries.

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