

Inguinal Hernia Repair on Day Care Basis during Global COVID-19 Pandemic

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¹ Conception of study

^{1,4,5} Experimentation/Study conduction

⁶ Analysis/Interpretation/Discussion

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Abstract

Introduction: COVID-19 has affected the General Surgical Elective list and most of the surgical procedures are postponed. Inguinal hernia surgery can be performed under local anesthesia on a daycare basis in the selected group of patients taking all necessary precautions for COVID-19.

Materials and Methods: This prospective study was conducted at the Department of General Surgery Federal Hospital, Islamabad for a period of three months from 15th March 2020 to 15th June 2020. All patients were included in the study through purposive sampling and preference was given to patients elder than 50 years of age. This study included 59 adult patients with an inguinal hernia who were under mesh repair under local anaesthesia on a daycare basis.

Results: A total of 59 patients were included in the study. All patients were male. The age range was from 37 to 82 years (SD=± 10.23). 30 (50.84%) patients had an inguinal hernia on the left side while 26 (44.06%) had a hernia on the right side. The mean operative time was 35 min. The pain was chief complaint postoperatively 30 (50.8%) patients had moderate pain while 6 (10.1%) patients had severe pain in the first 24 hours after surgery. Fever was present in 15 (25.42%) patients in the first 24 hours. All patients were negative for COVID -19 preoperatively and after 2 weeks none of the patients develop any symptoms of COVID-19. 3 (5.08%) patients needed readmission within 24 hours for pain and some haemorrhage. There was no mortality in our study

Conclusions: Inguinal Hernia Surgery under local anaesthesia on a daycare basis is a very good practice at this time of the global pandemic of COVID-19. This is a safe and reliable strategy.

Keywords: Inguinal Hernia, COVID-19, Local Anaesthesia.

Introduction

COVID-19 started in the Chinese city of Wuhan in China and in no time it became a pandemic.¹ It has the highest infectious and transmissibility rate. The effective measures to control its spread are social distancing, frequent hand wash, and wearing a mask. In order to prevent people most of the countries adopted lockdown measures so that people can stay home.² Schools, public places, shopping malls, and mass gatherings closed.

Hospitals were no exemption to this strategy and the majority of the Indoor and outdoor services were cancelled and the hospital only provided emergency services.³ Most of the countries made dedicated hospitals or wards for the management of the COVID-19 patients. As a result, the General Surgery Elective operation list was stopped and only elective surgeries were performed for malignant patients.⁴ Many booked patients for routine elective surgeries were postponed up till the newly reported cases fell below the nationally acceptable numbers.

Inguinal hernia surgery is one of the common elective general surgical procedures performed. Inguinal hernia affects all ages. Most of the patients with inguinal hernia are asymptomatic. The indication for elective hernia surgery is discomfort, pain, dragging sensation, heaviness, irreducibility which increases the risk of obstruction, incarceration, and strangulation.⁵ Older patients have other risk factors such as chronic cough, constipation, and bladder outlet obstruction which predispose the formation of hernia, enlargement, and aggravation of symptoms.⁶ Some of these patients want their hernia should be repaired immediately as they can't cope with swelling.

At this time of COVID-19 where elective operation theatres are almost closed. We conducted this study of performing Inguinal hernia repair surgeries in older patients who persistent pain, irreducibility, and risk of obstruction and strangulation on a daycare basis. Daycare surgery is ideal for such patients where patients stay in the hospital is minimised and they come from home on the day of surgery.⁷

This study aimed to evaluate the inguinal hernia operation services on a daycare basis under local anaesthesia for patients who need non-emergency surgeries on an urgent basis. A dedicated team of staff was created with all special precautions. This is will help in establishing local guidelines for our surgical patients till this pandemic ends.

Materials and Methods

This prospective study was conducted at the Department of General Surgery Federal Hospital, Islamabad from 15th March 2020 to 15th June 2020. This study included 59 adult patients presented with the diagnosis of inguinal hernia. A detailed history and examination were performed. All these patients were tested for Covid-19 by PCR 48 hours before putting them on the list. British National Health Services criteria for COVID-19 surgical patients were used.⁷ All adult patients (preferably above 50 years) were included in the study who had persistent pain, irreducible hernia, or increase risk of obstruction. Patients with COPD, recurrent inguinal hernia, chronic liver disease, and patients with other co-morbid conditions such as IHD and renal failure were excluded from the study. All patients were advised to wear a mask all the time. All patients were kept in a single room and strict barrier nursing was provided. Informed consent was obtained from all patients. Only 2 patients were operated on on each elective list. After a stay of 8-10 hours in the hospital. When they tolerated oral fluids they were sent home. A dedicated phone and WhatsApp number were given to all patients to contact. Local anaesthesia was used in all patients. Three-step tumescent local anesthesia technique was used in all patients.⁸

Mesh repair was performed in all these patients with a stapler used to fix the mesh and closure of the skin. In the case of a Bilateral inguinal hernia, painful side or patient requested side was done only. All patients were taught about symptoms of COVID-19 and advised to immediately report to the hospital and self-isolate themselves at home. Postoperatively patients were monitored for Pain, haemorrhage, haematoma, mobility, nausea, vomiting. Visual Analogue Score (VAS) was used to monitor pain. Pain score was classified as mild VAS score 1-3, moderate VAS score 4-7, and severe VAS score 7-10.⁹ One-tailed t-test is used to calculate the p-value. A $p < 0.05$ is taken as significant. All patients were followed up for 2 weeks and were provided dressing and removal of surgical clip services at home. They were monitored for any symptoms of Covid-19. All findings were recorded on a specially designed proforma analysis was done on SPSS version 21.

Results

A total of 59 patients were included in the study. All patients were male. The age range was from 37 to 82 years (SD=± 10.23) Figure 1. There were no female patients in our study. 30 (50.84%) patients had an inguinal hernia on the left side while 26 (44.06%) had a hernia on the right side. The mean operative time was 35 min (Table 1: Clinical Findings). The pain was chief complaint postoperatively 30 (50.8%) patients had moderate pain while 6 (10.1%) patients had severe pain in the first 24 hours after surgery. Which was only mild in 45 (76.5%) and 55 (93.22 %) of the patients one week and 2 weeks postoperatively respectively. Fever was present in 15 (25.42%) patients in the first 24 hours and was not reported by any patients later on. The detail on postoperative monitoring is mentioned in Table 2. All patients were negative for COVID -19 preoperatively and after 2 weeks none of the patients develop any symptoms of COVID-19. 3 (5.08%) patients needed readmission within 24 hours for pain and some haemorrhage which was controlled by pressure dressing and patients were discharged after 24 hours. All patients' surgery was performed under local anaesthesia and there was no need for general anaesthesia in any patient. There was no recurrence of hernia in our study. There was no mortality in our study.

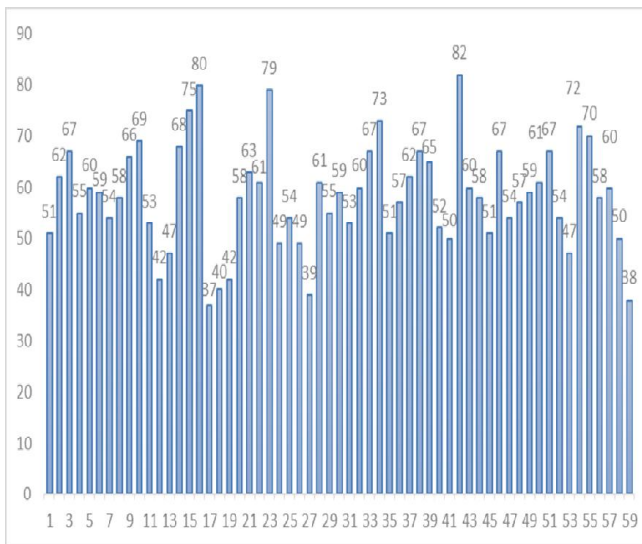


Figure 1: Age Range (n=59)

Table 1: Clinical Findings (n=59)

	No of Patients	Percentage
Side		
Right	26	44.06
Left	30	50.84
Bilateral	3	5.08
Reducible	55	93.23
Irreducible	4	6.77
Complete	15	25.42
Incomplete	44	74.57
Operative Findings		
Mean Operative Time	35 min	
Contents		
Omentum	47	79.67
Intestine	12	20.33
Procedure	Mesh Repair	
Anaesthesia	Local Anaesthesia	

Table 2: Postoperative at Home Monitoring (n=59)

	24 Hours	1 week	2 weeks	p-value
Pain				
Mild	23 (38.9%)	45 (76.27%)	55 (93.22%)	0.001
Moderate	30 (50.8%)	10 (16.9%)	4 (6.77%)	0.002
Severe	6 (10.1%)	4 (6.77%)	-	0.005
Nausea/Vomiting	10 (16.9%)	2 (3.38%)	-	0.001
Fever	15 (25.42)	-	-	0.003
Cough	5 (8.47%)	-	-	0.000
Haematoma	2 (3.38%)	1 (1.69%)	-	0.001
Seroma	-	2 (3.38%)	3 (5.08%)	0.001
Infection	-	0	1 (1.69%)	0.002
Mobility	45 (76.27%)	59 (100%)	59 (100%)	0.001
Readmission within 24 hours	3 (5.08%)	-	-	0.000

Discussion

Novel Coronavirus disease started in the Chinese city Wuhan and spread rapidly all over the world.¹⁰ It is also called COVID-19 and SARS-CoV-2 to differentiate it from previously known coronavirus infections SARS and MERS.¹¹ In March WHO has declared it a globally pandemic and the best strategy for prevention and protection from COVID-19 is social distancing, wearing the face mask, and frequent hand washing.¹² Despite having low mortality as compared to SARS devastating effects of the COVID-19 on people's health has overburdened the health system within a very short period of time.¹³

The effective strategy for social distancing adopted by many countries was a kind of partial or complete lockdown.¹⁴ There was the closure of shopping malls, markets, schools, all gatherings, and religious gatherings.¹⁵ Even there was the closure of Air travel and the closure of train travels to decrease the spread of the disease.¹⁶ As hospitals were overwhelmed by the patients during this pandemic. There was a need for an increase in the capacity of the hospital to accommodate such a large number of COVID-19 patients. As a result majority of elective services were cancelled especially General Surgery elective operation, indoor admissions, and outdoor clinics were closed.¹⁷ General Surgery work was reduced to emergency work or elective surgeries for malignant patients.¹⁸ The fear of getting coronavirus from the hospital was so much that people with other conditions were reluctant to come to the hospitals.¹⁹

Many patients who need elective surgery for their problem on an urgent basis and they don't fall in the emergency are postponed during this time.²⁰ They visited the hospital as they were booked for elective surgeries for their longstanding elective problems. Inguinal hernia in elderly patients is one good example of such a problem where patients are waiting for their turn. Many factors contribute to the unpleasant effects of the inguinal hernia in older age and these patients with other chronic problems want their surgery done immediately.⁷ Chronic straining conditions such as BPH, constipation, and chronic coughing along with muscular weakness lead to an increase in the size of the hernia.²¹ There is constant dragging sensation and pain and weight in scrotum keeps these elder patients disturbed and bothered all the time.²² They feel like surgery is the only resolution for their problem.

In a time of COVID-19 pandemic where the risk of getting an infection from the hospital is very high and

most of the elective surgical procedures are postponed.²³ In this study we performed hernia surgery on a daycare basis primarily for elderly people who could not tolerate the bothersome symptoms of the inguinal hernia but some of the other adult patients whose symptoms were bothersome were also included.

Daycare surgery is an ideal choice for inguinal hernia surgery. European Hernia Society recommends that inguinal hernia surgery on a daycare basis is safe and cost-effective independently of the type of surgical hernia repair.²⁴ Furthermore, elderly ASA III patients are also suitable for inguinal hernia surgery on a daycare basis assessment of individual health conditions.²⁵ The benefit of daycare surgery for inguinal hernia is so much that it should be considered for all types of patients for inguinal hernia after checking individual comorbidities.²⁶ As local anaesthesia was used in all patients there was no need for prolonged hospital stay this is usually needed in the case of General anaesthesia and Spinal anaesthesia.²⁷ Also there was no need for prolonged fasting and these patients were allowed orally within one hour of surgery.

There is no dedicated daycare surgery centre in our country. This pandemic has given us a chance to perform inguinal hernia surgery on a daycare basis and evaluate our services for daycare surgery. A total of 59 patients were included in the study. The mean age of patients in our study was 58.20 years. Shah et al reported a mean age of 45.7 years for a group of 114 inguinal hernia surgery patients.⁹ The reason for this difference is that we specifically operated on the older patients and did not include younger patients in our study. All patients were male. The mean operative time was 35 min. While Palumbo reported by the mean duration of the procedure was of 84.27 ± 22.38 minutes.²⁸ The main reason could be all surgeries were performed by a consultant and a stapler was used to fix the mesh and approximate the skin. The pain was the chief complaint postoperatively 50.8% of patients had moderate pain on VAS while 10.1% of patients had severe pain in the first 24 hours after surgery. Which was only mild in 76.5% of the patients after one week. Fever was present in 15 (25.42) patients in the first 24 hours and was not reported by any patients later on.

All patients were managed very well at home. Only 3 (5.08%) patients were readmitted for a complication such haematoma formation and severe pain. Only one patient needed readmission for pain management otherwise all other patients' pain was managed by oral

analgesics at home and they did not need injectables for pain management. There was no recurrence in our study. None of our patients contracted COVID-19 in a 2-week follow-up.

This study has provided a very good insight into setting up daycare surgery in our local setups and demonstrated that daycare surgery is a feasible option. Further study with a larger sample is needed to validate this study.

Conclusion

Inguinal Hernia Surgery under local anaesthesia on a daycare basis is a very good practice at this time of the global pandemic of COVID-19. This is a safe strategy that provided services with a limited staff to cater to their need with a short hospital stay and early return to the safe environment of a home.

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