

Management of Symptomatic Inguinal Hernia Under Local Anesthesia in Covid Pandemic Our Experience

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ABSTRACT

Background: Health care burden has increased since the pandemic of Covid-19 has emerged. The healthcare resources are limited currently and majority surgeries have been postponed because of the current pandemic. Therefore, the main concern of carrying out any surgery at current point is mainly in those patients that are landing in emergency. Symptomatic inguinal hernia being a common presentation in emergency can be dealt by applying local anesthesia.

Objective: To evaluate the outcome (in terms of efficacy and safety) of local anesthesia for managing symptomatic inguinal hernia in a tertiary care hospital during current Covid-19 pandemic.

Methodology: It was a descriptive study. 60 males were enrolled with inguinal hernia of age 30-60 years. IV line was secured and local anesthesia was administered under aseptic measures. Lichtenstein repair, a mesh technique was applied in all patients for treating the inguinal hernia. Patients were evaluated postoperatively after 2 hours and 6 hours for any complications.

Results: Mean age of the patients was 38.2 ± 10.542 , Mean time to eat was 3.85 ± 3.138 . Mean time to ambulate was 4.37 ± 2.51 . Mean pain score was 5.78 ± 2.131 postoperatively and after 6 hours it was 2.24 ± 0.84 . Indirect hernia was present in 74% patients whereas direct hernia was present in 26%. 6.67% patients had nausea/vomiting, 3.3% developed hematoma and 1.67% had wound infection.

Conclusion: Local anesthesia is effective in all patients who have to undergo inguinal hernia surgery, in terms of efficacy and safety.

Keywords: Inguinal hernia, Local anesthesia, Covid-19 pandemic.

INTRODUCTION

The prevailing situation of pandemic secondary to Covid-19 has led to a lot of problems that were previously not encountered¹. Doctors have to face a tough time while dealing with a disease which is known poorly and the resources for dealing with in the healthcare systems are scarce, thus effecting the treatment given electively for both benign and malignant conditions². Keeping this in mind, it is necessary that every surgeon follows the guidelines given nationally about conducting surgery and carrying out necessary precautions while managing patients at this time of pandemic³.

The first aim of an elective surgery of abdominal wall is the improved quality of life of patients⁴. Considering this, it is necessary to delay elective procedures during this crisis time, as presently the hospitals and the health related services are overwhelmed and additionally there is a risk of Covid-19 infection to the patients from the general anesthesia⁵. Furthermore, the anesthesiologists that were dedicated to operating rooms have been shifted to perform their duties in the intensive care units that are established for treating patients suffering from this virus and the number of operation theatres have been reduced as well³. Therefore, the main concern of carrying out any surgery at current point is mainly in those patients that are landing in emergency, are symptomatic, and having impairing quality of life⁶. A common surgical emergency is acute inguinal hernia^{7,8}. If not treated promptly, it can lead to complications⁹. Local anesthesia is widely used as a mode of anesthesia in patients with inguinal hernia¹¹. Comparison studies carried out previously on general, spinal and local anesthesia revealed that for an inguinal hernia, the ideal mode of anesthesia is local anesthesia¹²⁻¹⁹.

A lot of international research has been carried out on the management of inguinal hernia under general as well local anesthesia. However, no such study has been conducted so far in Pakistan in current prevailing situation of covid-19 pandemic. So, the rationale of current study is to determine the safety and effectiveness of local anesthesia in managing symptomatic inguinal hernia during this pandemic situation. This study will help in providing information about a useful managing technique that is

acceptable to the patients, is safe to apply, cost effective and is associated with significantly less morbidity and mortality.

MATERIAL AND METHODS

The study was carried out in the emergency and inpatient Department of Surgery of Jinnah Hospital, Lahore from 1st April 2020 till 31st July 2020. A total of 60 male patients, aged 30 to 60 years were included in the study who were diagnosed as having inguinal hernia (either direct or indirect) and presented in the surgical emergency with pain or distress, with ASA grade I, II and III and who were covid-19 negative on PCR. Patients who had complicated hernia i.e. hernia that was either irreducible, obstructed or strangulated were excluded from the study. Patients with recurrent hernia or those with a history of herniorrhaphy were excluded too.

Study design: It was a descriptive study. After taking informed consent and approval from the ethical review board of the hospital, all eligible participants were enquired about their symptoms and were examined thoroughly. Baseline investigations such as CBC, serum electrolytes, RFTs, LFTs, Blood sugar levels and PCR for covid-19 was carried out. Chest X-ray was also done. The findings were recorded. Procedure of Local anesthetic was explained to all the patients. Intravenous line was secured in all patients after ensuring aseptic measures in the operation room. All patients were given prophylactic intravenous antibiotic i.e. 1G cephadrine. Lignocaine 0.5% in a dose of 50 to 100ml was mixed with adrenaline 1:200000 and was injected using a 23G needle for ilioinguinal block. Physiological variables such as heart rate, respiratory rate and blood pressure was being measured continuously. Necessary resuscitation equipment and medicines were placed nearby. Keeping in mind the current pandemic, one anesthesiologist was involved in surgery of patients who had ASA grade III and for those with ASA grade I or II, the anesthesiologist was kept on call and was available readily if the need aroused and they were being monitored continuously during the procedure with pulse oximeter for any decline in saturation. Lichtenstein repair, a mesh technique was applied in all patients for treating the inguinal hernia. The procedure was carried out with 30 to 45 minutes. Intramuscular injection of diclofenac sodium was given to all

patients in the postoperative period. Patients were kept under observation in the post-operative room and were observed at 2 hours and 6 hours. All those patients who were stable and were without any complications were discharged after 6 hours. Those who were not stable and had complications were kept under observation for 24 hours and were reevaluated after 24 hours and those who were stable were discharged.

Outcome assessment: Effectiveness of the procedure was assessed by:

1. Time taken by the patient to eat semi-liquid foods and presence of nausea or vomiting.
2. Time to ambulation was also recorded for all patients i.e. getting up from the bed and walking a standard distance and returning back to bed as early as possible after the procedure.
3. Pain status was assessed using visual analog scale and was categorized as mild pain if score was 0-3, moderate pain if score was 4-6 and severe pain if score was 7-10.

The procedure was considered efficacious if within 6 hours the patient was able to eat, walk and had 50% reduction in severity of pain after 6 hours from the time of shifting to postoperative ward.

Safety was assessed by the presence of complications such as hematoma, wound infection, edema of scrotum, urinary retention and recurrence.

Statistical analysis: The data was analyzed through SPSS version 24.0. Quantitative measures such as age, pain score, time to eat semisolid and time to ambulation was presented as mean and standard deviation, whereas qualitative measures such as presence of direct or indirect hernia, ASA grade, pain severity and complications were expressed as frequency and percentages.

RESULTS

Inguinal hernia repair under local anesthesia was successful and effective in all patients. Mean age of the patients was 38.2±10.542. Mean time to eat was 3.85 hours with a standard deviation of 3.138. Mean time to ambulate was 4.37 hours with a standard deviation of 2.51. Mean pain score was 5.78 with a standard deviation of 2.131 postoperatively and after 12 hours it was 2.24 with a standard deviation of 0.84.

Indirect hernia was present in 74% patients whereas direct hernia was present in 26%. Around 26% patients had ASA grade I, 44% had ADA grade II, 30% had ASA grade III.

Immediately after the procedure, mild pain was experienced by 14%, moderate pain by 50% and severe pain was experienced by 36% patients.

Table 1: Showing demographic characteristics and side effect Profile in Two Groups

Patient Characteristics		N=50
Age (in years)		38.2±10.542
Time to Eat (in hours)		3.85±3.138
Time to Ambulate (in hours)		4.37±2.51
Pain score immediately after surgery		5.78±2.131
Pain score 12 hours after surgery		2.24±0.84
Hernia	Indirect	26%
	Direct	74%
ASA Grade	I	26%
	II	44%
	III	30%
Severity of Pain	Mild	14%
	Moderate	50%
	Severe	36%
Complications	Nausea/vomiting	6.67%
	Hematoma	3.3%
	Wound infection	1.7%

*mean ± standard deviation

No deaths occurred during the perioperative period. 6.67% patients had nausea/vomiting. Some patients experienced few local complications that were Hematoma formation at site of surgery 3.3% and wound infection in 1.67%. These were managed medically and patient recovered from these complications. On follow up, there was no patient with recurrence of inguinal hernia.

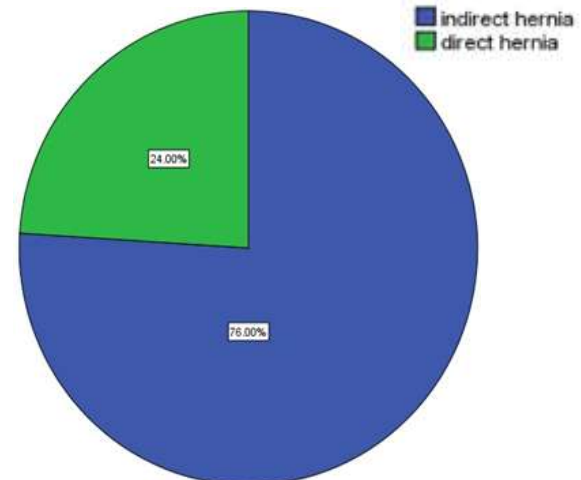


Figure 1: Pie-chart showing frequency of hernia

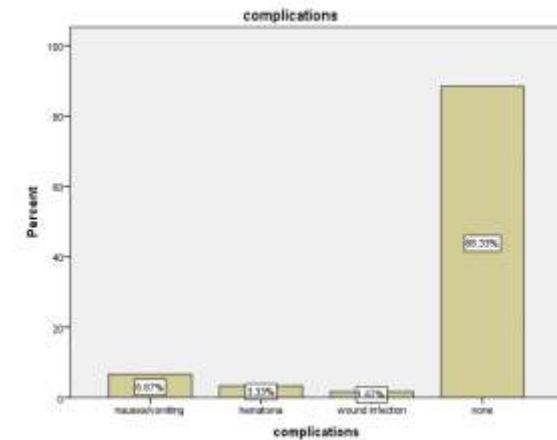


Figure 2: Bar-chart showing frequency of complications

DISCUSSION

The current study emphasized that local anesthesia is effective and safe in current Covid-19 pandemic for the management of symptomatic inguinal hernia. Epidemiological surveys conducted previously and several retrospective studies and randomized trials revealed that local anesthesia is superior to general anesthesia as well as to spinal/epidural anesthesia for the treatment of inguinal hernia². This superior efficacy is in terms of less pain during the postoperative period, less complaints related to anesthesia, early discharge and fast recovery³. Our study revealed similar efficacy and safety profile of local anesthesia in inguinal hernia repair.

A study was conducted in 2017 by Bagwan MB¹⁹, who compared the effects of local anesthesia and spinal anesthesia given during asymptomatic inguinal hernia repair. The author found that there was no difference in terms of postoperative pain, ambulatory time and complications. In addition no recurrence of hernia was seen in any patient and wound healing was quick. The authors proposed that such mode of anesthesia are effective, associated with lesser complications and improved wound healing and quality of life¹⁹. Kamat VV, et al. in 2019, yielded similar results after comparing inguinal hernia repair under local

anesthesia and regional anesthesia and revealed that local anesthesia is associated with fewer complications and a better functional recovery²⁰. Our study results were similar yielding good efficacy of local anesthesia that was administered for repair of inguinal hernia. There were very few complications and all patients recovered fully.

Despite the effectiveness and safety, local anesthesia is less commonly used in such repairs. Covid-19 pandemic has raised concern about patient as well as health care safety⁴. With the application of general anesthesia, both the patient as well as the attending doctor is put at risk of acquiring this infection that can have deadly consequences⁵. In such state, it is necessary to look for an alternative which is equally effective and less stress inducing. Local anesthesia practice must be continued in this pandemic situation to improve the quality of life of patients, which have symptomatic inguinal hernia that is causing them trouble.

This study had certain limitations. Firstly, the study was carried out in a single center so the results cannot be generalized. Secondly, the sample size was small, so the effectiveness of the current technique cannot be generalized to large population. Thirdly, patients presenting with complicated hernia were not enrolled so the safety and efficacy of local anesthesia in such inguinal hernias cannot be yielded.

CONCLUSION

The current study concluded that local anesthetic is a convenient mode of analgesia for inguinal hernia surgeries in current situation of pandemic which is associated with lesser complications and is safe and easily applicable. This mode of analgesia can help in reducing the chances of infection that can be acquired while giving general anesthesia. Future studies must be carried out on a larger sample size and must be on the elective procedures and other surgeries as well to ensure adequate safety profile and effectiveness of this mode of analgesia.

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