



A STUDY ABOUT COMPARISON OF TREATMENT OUTCOMES IN CASES OF INGUINAL HERNIA MANAGED BY DIFFERENT METHODS OF SURGICAL REPAIR

General Surgery

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ABSTRACT

Introduction : Hernia generally means weakness or defect of the body wall muscle fibers that provide a space for protrusion of internal organs. Prevalence of the inguinal hernia is nearly 5% worldwide. This study aims to evaluate and compare the results of inguinal herniorrhaphy with mesh in classic and preperitoneal method because of the high incidence of complications after inguinal herniorrhaphy and the variety of reconstructive procedures in randomly general hospitals.

Methods: Case sheets of 200 patients were selected which were proven cases of Inguinal Hernia during a period of 4 months from year Aug 2019 to Nov 2019. Subjects included both the genders , all age groups including pediatric and geriatric age group and all classes of socio economic strata. Patients were assigned to two treatment groups. Duration for surgeries was approximately between 40 mins and 60 minutes. The patients underwent a surgical repair in inguinal hernia with classic versus preperitoneal methods under spinal anesthesia.

Results: The rate of recurrence was 9% in the classic group and 2% in the preperitoneal group. This difference was significant ($P = 0.01$) The frequency of postoperative pain was 21% in the classic group and 9% in the preperitoneal group. This difference was significant ($P = 0.01$) The frequency of postsurgical hematoma was 7% in the classic group and 9% in the preperitoneal group. This difference was not significant ($P = 0.612$) The rate of postsurgical seroma was 8% in the patients treated with the classic method. This value was 1% with the preperitoneal method; hence, this difference was significant ($P = 0.043$)

Conclusion: The rate of recurrence, postoperative pain, and hematoma was significantly lower in the preperitoneal group compared with the classic one in this study. It seems that the preperitoneal method is a more suitable method for inguinal herniorrhaphy than the classic one because of fewer complications, according to the findings of this study.

KEYWORDS

Inguinal Hernia , Classic Method , Preperitoneal Method, Retrospective study

INTRODUCTION

Hernia generally means weakness or defect of the body wall muscle fibers that provide a space for protrusion of internal organs [1]. According to the previous studies, prevalence of the inguinal hernia is nearly 5% worldwide [2]. In recent years around 700,000 herniorrhaphy procedures are performed annually, which shows the high prevalence of the disease [3]. Inguinal hernia is divided into two categories, direct and indirect, which include 24 and 50 percent of all types of hernia, respectively [4]. Moreover, ventral hernia and femoral hernia covered approximately 10 and 3% of cases, respectively. A small percentage of hernia relates to uncommon hernias [5]. If hernia can be pushed back by the maneuvers, it is called reducible. Otherwise, it is called irreducible. If there is no blood flow in the viscera sticking in the hernia, hernia is called congested or strangulated [6]. The causing and predisposing factors of this condition are not known clearly but the factors that increase the pressure in the abdominal wall are mentioned. For example, chronic cough, chronic obstructive pulmonary disease, chronic constipation, benign prostatic hyperplasia, family history of hernia, collagen diseases, previous right lower quadrant incision, smoking, physical activity, and bearing the burden may be named [7, 8]. Surgical treatment is the choice treatment of this disorder. Today, there are various methods of surgery and the chief goal of treatment is to heal patients and reduce the recurrence of disease. The prolene meshes have reduced the recurrence greatly in the last 20 years [9, 10]. There are two main methods for surgery: open surgery and laparoscopy. There are various methods to repair the herniation site, two of which are more applicable: classical and preperitoneal methods. The classical method is an easier method than other methods of repair performed by most surgeons and it is the gold standard of herniorrhaphy [11–13]. In this method, the mesh is located on the floor of the inguinal canal, below which the thin transverse abdominis fascia is placed. So, it causes a relapse-prone area. However, the recurrence rates reduce in the preperitoneal method because the mesh is laid under the fascia and on the peritoneum [14, 15] This study aims to evaluate and compare the results of inguinal herniorrhaphy with mesh in classic and preperitoneal method because of the high incidence of complications after inguinal herniorrhaphy and the variety of reconstructive procedures, in general hospitals of CG.

Hence a retrospective Analytical Study was planned to see the current trends of Management in Randomly selected Tertiary Care Hospitals of Randomly selected Districts of CG.

METHODOLOGY

This Retrospective study involved Prior Consent from Hospital Authorities / Medical Superintendent of the tertiary care hospitals to see the records of the patients & were found within ethical standards. Patients admitted in the various Randomly selected surgical units of tertiary care hospitals in Randomly selected districts of CG as diagnosed cases of Inguinal Hernia were included in this study.

Case sheets of 200 patients were selected which were proven cases of Inguinal Hernia during a period of 4 months from year Aug 2019 to Nov 2019. Subjects included both the genders , all age groups including pediatric and geriatric age group and all classes of socio economic strata.

Patients were assigned to two treatment groups. Duration for surgeries was approximately between 40 mins and 60 minutes. The patients underwent a surgical repair in inguinal hernia with classic versus preperitoneal methods under spinal anesthesia. In both groups, the surgeon incised the skin and subcutaneous tissue of the lower part of the abdomen and then the fascia of Scarpa and the roof of the inguinal canal. The first group was assigned to the classic method; after reinforcement of the posterior wall of the inguinal canal, the Mersilene mesh (7.5 × 10 cm) was placed and fixed using Round nylon stitch 3/0 to the edges of the defect or weakness in the posterior wall. The second group was assigned to the preperitoneal method; briefly, after acquiring the posterior wall of the inguinal canal, the Mersilene mesh (7.5 × 10 cm) was placed and fixed using Round nylon stitch 3/0 under the posterior wall and then was rehabilitated based on modified Bassini repair method. All patients were followed up for 6–12 months after surgery. Inclusion criteria include having direct hernia with defects in the posterior wall, being a candidate for classic herniorrhaphy, being a candidate for preperitoneal herniorrhaphy, and satisfaction to enter the study. Exclusion criteria include bleeding disorders and corticosteroid consumption. Both groups were compared after surgery in terms of recurrence, pain, seroma, and hematoma in 3 months period.

The data were analyzed by IBM SPSS Statistics 23. The differences in the variables were determined by the Chi-Squared test and Fisher's exact test between classic and preperitoneal methods. Overall, $P < 0.05$ was proposed to represent statistical significance after correction.

RESULTS

From 200 patients, 100 were assigned to the classic method and 100 were assigned to the preperitoneal method, as shown in Table no. 1. In the classic group, 57 % were male and 43 % were female. In the preperitoneal group, 59% were male and 41% were female; the difference was not significant according to Chi-Squared test ($P = 0.245$)

The rate of recurrence was 9% in the classic group and 2% in the preperitoneal group. This difference was significant according to Chi-Square test ($P=0.01$)

The frequency of postoperative pain was 21% in the classic group and 9% in the preperitoneal group. This difference was significant according to Chi-Squared test ($P=0.01$)

The frequency of postsurgical hematoma was 7 % in the classic group and 9% in the preperitoneal group. This difference was not significant according to Chi-Square test ($P=0.612$)

The rate of postsurgical seroma was 8 % in the patients treated with the classic method. This value was 1 % with the preperitoneal method; hence, this difference was significant according to Fisher's exact test ($P = 0.043$)

Table no. 1 – Comparing Classic Group with Preperitoneal Group

Comparing Features/Variables	Classic Group	Preperitoneal Group	p value
Rate of Recurrence	9%	2%	0.01 (Significant)
Post Operative Pain	21%	9%	0.01 (Significant)
Post Surgical Hematoma	7%	9%	0.612 (Not Significant)
Post Surgical Seroma	8%	1%	0.043 (Significant)
Gender	57% Male , 43% Female	59% Male , 41% Female	0.2 (Not Significant)

DISCUSSION

Inguinal hernia repair (also referred to as herniorrhaphy or hernioplasty) is one of the most frequently performed surgical actions worldwide. Nowadays, the majority of surgeons choose to carry out a tension-free mesh repair. Various aspects of postoperative complications of herniorrhaphy were discussed in several studies.

In the study conducted by Khoshnevis and Falah on the results and complications of Bassini methods and Lichtenstein and Bassini methods with mesh in Shohadaye Tajrish Hospital in Tehran (Iran), it was concluded that both Bassini and Lichtenstein methods have similar complications and recurrence. However, the Bassini approach may be more appropriate for inguinal hernia repair in less developed countries because it is less expensive [16]. Also, the recurrence rate had no significant difference in the classic and preperitoneal methods according to the study of Muldoon and colleagues in 2004. This amount was reported to be 4.3% and less than 1%, respectively [15]. Other studies described the effect of postoperative pain. In Moghaddam et al.'s study, the pain of operation site was lower in the preperitoneal method than in the classical method. However, the classic method is a simpler procedure but pain is higher in this type of operation, which may be due to direct contact of the spermatic cord with the mesh. In contrast, the pain of operation site was lower in the preperitoneal method because the mesh was inserted with fewer sutures under the transversalis fascia [17]. In another study, Khorshidi et al. investigated the effect of the use of morphine and bupivacaine on the length of hospitalization. The results demonstrated that ilioinguinal and iliohypogastric nerve block by bupivacaine can reduce the need for morphine and hospitalization after surgery. Therefore, this method can be used to control postsurgical pain [18]. In this study, we discussed the open classic and preperitoneal methods. Mesh is used in both of these methods. In a study, the mean scores of quality of life including physical and mental health were almost similar in all methods with mesh but they have a significant difference in comparison with the tissue repair method [19]. Therefore, we claim that the method of repair with mesh is a better method than the tissue method. The rate of recurrence, postoperative pain, and hematoma was significantly lower in the preperitoneal group compared with the classic one in this study. Perhaps this was due to the insertion of mesh under the transverse fascia and on the peritoneum in the preperitoneal method. Surely, the preperitoneal method makes less weak areas in the wall of the repaired

site than the classic one in which mesh is placed on the fascia. Also, the pain is higher in the classic method, which may be due to direct contact of the mesh with the spermatic cord.

CONCLUSION

The results of the present study may give a snapshot of current worldwide trend. It seems that the preperitoneal method is a more suitable method for inguinal herniorrhaphy than the classic one because of fewer complications, according to the findings of this study. It should be noted that the determination of the type of operation needs a lot of benchmarks, and medical staffs should perform the most appropriate procedure according to all aspects to treat the patients.

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Compliance With Ethical Standards.

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