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General Surgery

COMPARISON OF TREATMENT OUTCOMES OF SURGICAL REPAIR IN INGUINAL HERNIA WITH CLASSIC VERSUS PREPERITONEAL METHODS ON REDUCTION OF POSTOPERATIVE COMPLICATIONS

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ABSTRACT This study aims to evaluate and compare the results of inguinal herniorrhaphy with mesh in classic and preperitoneal method. Methods. Our study community includes 100 candidate patients for inguinal herniorrhaphy with mesh. Totally, 100 candidate patients for inguinal herniorrhaphy were randomly divided into two groups: (1) classic group in which the floor of the canal was repaired and the mesh was located on the floor of the canal and (2) preperitoneal group in which the mesh was installed under the canal and then the floor was repaired. Results. The frequency of recurrence was 6 (12%) and 1 (2%) in the classic and preperitoneal group, respectively. The frequency of postsurgical pain was 14 (28%) in the classic group and 6 (12%) in the preperitoneal group. The postsurgical hematoma was observed in 5 (10%) and 6 (12%) in the classic and preperitoneal group, respectively. Also, the frequency of postsurgical seroma was 5 (10%) and 1 (2%) in the patients treated with the classic and preperitoneal method, respectively. Conclusion. The findings of the present study demonstrated 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, classical repair, preperitoneal repair, postoperative complication

INTRODUCTION

Hernia generally means weakness or defect of the body wall muscle fibres that provide a space for protrusion of internal organs. 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. 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. In this method, the mesh is located on the floor of the inguinal canal, below which the thin transverse abdominas fascia is placed This study aims to evaluate and compare the results of inguinal herniorrhaphy with mesh in classic and preperitoneal method

CASE STUDY

The present study is a comparative study consisting of 100 cases admitted in King George Hospital, Visakhapatnam, for inguinal herniorrhaphy with mesh surgeries. Subjects enrolled with personal satisfaction. Both methods were explained to them. Subjects enrolled with personal satisfaction. Both methods were explained to them

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Inclusion criteria:

Patients with age of 18-60 undergoing surgery for direct inguinal hernia with posterior wall defect. Patients giving valid informed consent.

Exclusion criteria:

Patients having comorbidities like diabetes, bleeding disorders.
Patients not willing to give informed consent.

Statistical analysis:

All continuous variables were expressed as mean and number of percentages were used for categorical variables. Chisquare test and students t test and multivariate logistic analysis were used. P<0.05 was considered statistically significant.

RESULTS:

SURGICAL PROCEDURE:

Patients were randomly assigned to two treatment groups. The patients underwent a surgical repair in inguinal hernia with classic versus preperitoneal methods under spinal anesthesia. 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 surgeryFrom 100 patients, 50 were assigned to the classic method and 50 were assigned to the preperitoneal method. In the classic group, 76% were male and 24% were female. In the preperitoneal group, 72% were male and 28% were female; the difference was not significant according to Chi-Squared test (= 0.545) (Table 1).

The rate of recurrence was 6(12%) in the classic group and 1(2%) in the preperitoneal group. This difference was significant according to Chi-Squared test (= 0.016) (Table 2).

The frequency of postoperative pain was 14 (28%) in the classic group and 6 (12%) in the preperitoneal group. This difference was significant according to Chi-Squared test (= 0.014) (Table 3).

The frequency of postsurgical hematoma was 5(10%) in the classic group and 6 (12%) in the preperitoneal group. This difference was not significant according to Chi-Squared test (= 0.597) (Table 4).

The rate of postsurgical seroma was 5(10%) in the patients treated with the classic method. This value was 1 (2%) with the preperitoneal method; hence, this difference was significant according to Fisher's exact test (= 0.034)

Table 1: Comparison of sexual frequency distribution of the study groups

STUDY GROUP	MALE(%)	FEMALE(%)	TOTAL(%)
CLASSICAL	38(76)	12(24)	50(100)
PREPERITONEAL	36(72)	14(28)	50(100)

Table 2: Frequency distribution of recurrence in the study group

STUDY GROUP	YES(%)	NO(%)	TOTAL(%)
CLASSICAL	6(12)	44(88)	50(100)
PREPERITONEAL	1(2)	49(98)	50(100)

Table 3: Comparison of frequency distribution of pain in the study group

STUDY GROUP	YES(%)	NO(%)	TOTAL(%)
CLASSICAL	14(28)	36(72)	50(100)
PREPERITONEAL	6(12)	44(88)	50(100)

Table 4: Comparison of the frequency of postoperative hematoma in the study groups

STUDY GROUP	YES(%)	NO(%)	TOTAL(%)
CLASSICAL	5(10)	45(90)	50(100)
PREPERITONEAL	6(12)	44(88)	50(100)

Table 5:Comparison of the frequency of postoperative seroma in the study groups

STUDY GROUP	YES(%)	NO(%)	TOTAL(%)
CLASSICAL	5(10)	45(90)	50(100)
PREPERITONEAL	1(2)	49(98)	50(100)

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. 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. 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.

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. 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:

Finally, 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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