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Research Article

**ANALYSIS OF PROSTHETIC MESH REPAIR IN
OBSTRUCTED INGUINAL HERNIA IN PAKISTANI
POPULATION**Dr Shahid Hussain¹, Dr Muhammad Jahangir¹, Dr Muhammad Saad ul Hassan²¹Nishtar Medical College, Multan²DGKhan Medical College, D.G.Khan**Article Received:** October 2019 **Accepted:** November 2019 **Published:** December 2019**Abstract:**

Introduction: Incarcerated inguinal hernia is a commonly encountered urgent surgical condition, and tension-free repair is a well-established method for the treatment of non-complicated cases. **Aims and objectives:** The basic aim of the study is to analyse the prosthetic mesh repair in obstructed inguinal hernia. **Material and methods:** This cross sectional study was conducted in Nishtar Medical College, Multan during January 2019 to October 2019. The patients were divided into two groups based on the applied surgical technique. Group 1 consisted of 112 patients treated with mesh-based repair techniques, while Group 2 consisted of 39 patients treated with tissue repair techniques. **Results:** Mesh-based repair techniques were performed on the 35 patients comprising Group 1, while tissue repair techniques were performed on the 35 patients comprising Group 2. In this study, 81.5% of the patients were male, while 18.5% were female. Female patients had a significantly higher ratio of femoral hernia than male patients, while male patients had a significantly higher ratio of inguinal hernia than female patients. **Conclusion:** It is concluded that the use of polypropylene mesh in incarcerated inguinal hernia repair has no negative effect on wound infection or complications.

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INTRODUCTION

Incarcerated inguinal hernia is a commonly encountered urgent surgical condition, and tension-free repair is a well-established method for the treatment of non-complicated cases. However, due to the risk of prosthetic material-related infections, the use of mesh in the repair of strangulated or incarcerated hernia has often been the subject of debate. Recent studies have demonstrated that biomaterials represent suitable materials for performing urgent hernia repair. Certain studies recommend mesh repair only for cases where no bowel resection is required; other studies, however, recommend mesh repair for patients requiring bowel resection as well [1].

It is believed that the prevalence of groin hernias in a population varies between 3% and 8%. Between 75% and 85% of all hernias are observed in men. Inguinal hernias account for 80–83% of all hernias (59% indirect inguinal hernias, 25% direct inguinal hernias, 5% femoral hernias). The most common hernias in both genders is inguinal hernia; however, femoral hernias are reported to be more common in women than in men [2].

Worldwide, more than 20 million patients undergo groin hernia repair annually. The many different approaches, treatment indications and a significant array of techniques for groin hernia repair warrant guidelines to standardize care, minimize complications, and improve results. The main goal of these guidelines is to improve patient outcomes, specifically to decrease recurrence rates and reduce chronic pain, the most frequent problems following groin hernia repair [3]. They have been endorsed by all five continental hernia societies, the International Endo Hernia Society and the European Association for Endoscopic Surgery. Inguinal hernia is a commonly encountered urgent condition in surgical clinics. Incarcerated inguinal hernia is a commonly encountered urgent surgical condition, and tension free repair is a well-established method for the treatment of non-complicated cases [4].

However, due to the risk of prosthetic material-related infections, the use of mesh in the repair of strangulated or incarcerated hernia has often been the subject of debate. Recent studies have demonstrated that biomaterials represent suitable materials for performing urgent hernia repair [5]. Certain studies recommend mesh repair only for cases where no bowel resection is required; other studies, however, recommend mesh repair for patients requiring bowel resection as well [6].

Aims and objectives

The basic aim of the study is to analyse the prosthetic mesh repair in obstructed inguinal hernia.

MATERIAL AND METHODS:

This cross sectional study was conducted in Nishtar Medical College, Multan during January 2019 to October 2019. The patients were divided into two groups based on the applied surgical technique. Group 1 consisted of 112 patients treated with mesh-based repair techniques, while Group 2 consisted of 39 patients treated with tissue repair techniques. The surgical technique to be applied was selected by the surgeons. The Lichtenstein procedure was used for inguinal hernia patients where mesh-based repair was preferred, while the Bassini procedure was used for inguinal hernia patients where the tissue repair technique was preferred. The mesh plug repair procedure was used for femoral hernia patients where the mesh repair was preferred, while the McVay procedure was used for femoral hernia patients where tissue repair was preferred. Patients in Group 1 were further divided into two sub-groups: one consisting of patients undergoing bowel resection (Group 3), and the other consisting of patients not undergoing bowel resection (Group 4). Thus, Group 3 antibiotic therapy included patients who underwent mesh repair in addition to bowel resection, while Group 4 consisted of patients not assigned for bowel resection who underwent mesh repair.

Statistical analysis

The Statistical Package for the Social Sciences (SPSS version 20.0) for Windows software package was used in data collection and statistical analysis.

RESULTS:

Mesh-based repair techniques were performed on the 35 patients comprising Group 1, while tissue repair techniques were performed on the 35 patients comprising Group 2. In this study, 81.5% of the patients were male, while 18.5% were female. Female patients had a significantly higher ratio of femoral hernia than male patients, while male patients had a significantly higher ratio of inguinal hernia than female patients. In Group 3 (table 1), 6.7% (1) of the patients had wound infections, while 6.7% had hematomas, 6.7% had seromas, and none had relapses. In Group 4, 7.2% of the patients had wound infections, while 1% had hematomas, 3% had seromas, and 1% had relapses.

Table 01: Comorbidities, mean age, hospitalization time and follow-up period for 112 patients who underwent surgical treatment with mesh-based repair.

	Group 1 (Mesh-based repair)	Group 2 (Tissue repair)	p*
Comorbidities	10 (8.92%)	8 (20.51%)	0.0558
Mean age	53.54 (16–94) (SD: 19.01)	49.41 (9–85) (SD: 21.63)	0.3640
Hospitalization time	2.27 (1–8) (SD: 1.85)	2.12 (1–17) (SD: 2.78)	0.2344
Follow-up period	37.30 (6–67) (SD: 16.34)	40.10 (2–62) (SD: 16.20)	0.3176

DISCUSSION:

Incarcerated inguinal hernia is one of the most common urgent surgical conditions. Ten percent of patients with inguinal hernia present with incarceration, and require urgent surgical procedures. For inguinal hernias, the risk of strangulation varies between 0.29% and 2.9%. The most commonly used prosthetic materials in tension-free mesh repair are polymers, polypropylene, and polyester [7]. Papaziogas et al. conducted a study of 75 patients with incarcerated hernia who underwent surgery in their study, where 33 patients were assigned to the tension-free mesh repair group (Group A), while 42 patients underwent hernioplasty with the Bassini procedure (Group B); the outcomes in both group were then compared. Two patients in Group A and four patients in Group B had wound infections; however, no statistically significant difference was identified between the groups. In Group B, hospitalization time was significantly longer. The mean follow-up period was nine years. One patient in Group A and two patients in Group B experienced relapse. This study reported that the use of polypropylene mesh in strangulated hernias can be considered safe [8].

Wysocki et al. previously performed a study of 77 patients who underwent the Lichtenstein procedure. In this study, two of the patients had seromas, while two patients had limited wound infections. The study reported that the use of monofilament polypropylene mesh implantation in strangulated hernias is safe, with a low risk of local infection risk [9].

A study by Elsebae et al. included fifty-four patients with incarcerated hernia who underwent surgery. Twenty-seven of these patients were assigned to the Lichtenstein procedure, while 27 patients underwent the Bassini procedure. Among the patients who underwent the Lichtenstein procedure, one had

seroma, one had wound infection, and none had relapses. Among the patients who were assigned the Bassini procedure, three had wound infections, while three had relapses. There were no statistically significant differences between the groups in terms of complications [10].

CONCLUSION:

It is concluded that the use of polypropylene mesh in incarcerated inguinal hernia repair has no negative effect on wound infection or complications. Considering the fact that traditional tissue repair techniques can increase the risk of relapse, the current study results revealed that polypropylene mesh can be used safely in urgent groin hernia repair, even in cases where bowel resection is required.

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