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Original Article

RETRACTED: Complications of Abdominal Wall Hernia Repair Using Mesh: A Single Cohort Study

Chathik H. Werasuriya[1*], Lykorgos K. Alexakis[1], Hsan Bairu[2], Ahidul Hilal[2]

1. *School of Medicine, Walailak University, Tha Sala District, Nakhon Si Thammarat, Thailand*
2. *Cox's Bazar Medical College, Cox's Bazar, Bangladesh*

[*] ***Corresponding author***: *chathikwerasuriya@gmail.com (C. H. Werasuriya). School of Medicine, Walailak University, Zip code: 80160, Tha Sala District, Nakhon Si Thammarat, Thailand*

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Abstract

Introduction

A hernia is when a viscus or a portion of a viscus protrudes through an irregular opening in the walls of the cavity it is contained in. This study's objective was to determine the effectiveness of mesh-based hernia repair with a focus on infection and recurrence rates.

Methods

This is a single cohort study conducted over 4 years. Patients with inguinal hernia received regional anesthesia while others had been given general anesthesia. Polypropylene mesh was used for all of them. They received preoperative antibiotics (1 gram of ceftriaxone). They were followed up for three years.

Results

During 4 years, 270 patients were enrolled in the study. The mean age of patients was 48 years. One hundred fifty patients (55.6%) were male and 120 of them (44.5%) were female. One hundred forty-two patients (52.6%) had an inguinal hernia. Ninety patients (33.3%) had umbilical hernias, 20 patients (7.4%) had epigastric hernias and 8 patients (2.9%) had incisional hernias. Five cases (1.8%) developed recurrence. Two patients (0.7%) had an infection.

Conclusion

Abdominal wall hernia repair using mesh is safe with very low complication rates.

1. Introduction

A hernia is when a viscus or a portion of a viscus protrudes through an irregular opening in the walls of the cavity it is contained in [1]. It is one of the most frequent clinical situations a general surgeon sees in his practice. Inguinal hernias are the most common type of hernias [2]. It causes 75% of abdominal hernias, in which abdominal contents protrude abnormally through the inguinal area. Direct and indirect variants are distinguished [2]. Adults with linea alba abdominal abnormalities most frequently experience umbilical hernias, followed by epigastric hernias. They both account for 10% to 15% of all primary hernias [3].

Considerable improvement has been achieved due to improved surgical technique and increased knowledge of anatomy and physiology [4]. The first synthetic patch repair of abdominal wall hernias was documented in 1962 [5]. Mesh usage in hernia repair has been common practice worldwide during the past few years [4]. The mesh is preferable to basic sutures, according to a number of reports [6,7]. Mesh is commonly made from materials derived from polypropylene or polytetrafluoroethylene, and these materials normally work by forming a bridge over tissue that is deficient [8]. But mesh-related issues are now more significant than ever. Seromas, adhesions, chronic excruciating

pain, mesh migration and rejection, and infections associated with the mesh are a few examples of such problems.

Although this illness is frequent, there haven't been many studies on it over the past two to three decades [5]. This study's objective was to examine the effectiveness of mesh-based hernia repair with a focus on infection and recurrence rates.

2. Methods

This descriptive, prospective, case series study was conducted from January 2012 to December 2014 in multiple tertiary hospitals. Only primary hernias were included in this study. All immunocompromised patients were removed from the sample. This study excluded patients with obstructed or strangulated inguinal hernias, patients with cirrhosis/ascites, and patients who were too fragile to withstand surgery. For all patients, the mesh was employed, and it was designed according to the size of the defect. Some patients with inguinal hernias underwent general anesthesia, others received spinal anesthetic. Prior to surgery, 1 gram of Ceftriaxone was given to each patient. The patients were followed up for three years.

3. Results

During 4 years, 270 patients were enrolled in the study. The mean age of patients was 48 years ranging from 21 to 68 years. One hundred fifty patients (55.5%) were male and 120 of them (44.5%) were female. One hundred forty-two patients (52.6%) had an inguinal hernia. Ninety patients (33.3%) had umbilical hernias, 20 patients (7.4%) had epigastric hernias and 8 patients (3%) had incisional hernias. Five cases (1.8%) developed recurrence. Two patients (0.7%) had an infection.

4. Discussion

The hernia affects the productive age group, and this in turn has an effect on the community. This study's average patient age, which ranged from 21 to 68 years old, is comparable with other reports in the literature. When it comes to hernias in general, our case series had 120 (44.5%) female patients, which is in accordance with the international standard [7]. Surgical meshes are now reasonably inert and biocompatible due to significant developments in biomedical materials research and development [7]. In clinical practice, non-absorbable polymer meshes have been inserted the most commonly. Expanded polytetrafluoroethylene, polypropylene, and polyester are the three main non-absorbable polymers [8]. The prevalence of infectious complications was lower after suture repair than after the other two procedures, according to the findings of a randomized trial including 160 patients with simple or complex hernias who received suture repair, skin transplant, or mesh repair [4]. Numerous studies have discovered various rates of wound infection following abdominal hernia mesh surgery. The low infectious rate achieved in this study may be due to preoperative antibiotic prophylaxis and proper painting of the operating site by iodine. The second and most serious consequence following hernia repair is recurrence. Techniques and patient characteristics are crucial. A positive family history of hernia, according to certain publications, is a predictor of recurrence [9]. Meshes have been shown to have a lower recurrence rate than conventional suture repair [9,10].

After mesh hernia repair, recurrence rates ranging from 0% to 5% have been recorded. The recurrence rate in this case series was 1.8%, which is in line with global norms [2].

5. Conclusion

Repairing abdominal hernias using mesh is a recognized method. Recurrence rates are quite low. Through the use of sterile procedures and preoperative antibiotic prophylaxis, the rate of infectious complications is lower than previously believed.

Declarations

Conflicts of interest: The author(s) have no conflicts of interest to disclose.

Ethical approval: Not applicable.

Patient consent (participation and publication)**:** Consent has been taken from the patients and the family of the patients and the patient gave consent for the publication of the report.

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