

# The Place of Mesh Use in the Treatment of Incisional Hernia; Emergent and Elective Cases



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## Abstract

**Aim:** In this study, we wanted to report the place of mesh use in our clinic in the treatment of incisional hernia in elective and emergency cases.

**Methods:** Patients who operated for incisional hernia under urgent and elective conditions were evaluated in the General Surgery Clinic of Göztepe Training and Research Hospital of the Istanbul Medeniyet University between January 2014 and September 2015. Patient files, surgical notes and patient reports were screened retrospectively. IBM SPSS Statistics Version 23 was used for statistical analysis of data and findings.

**Results:** A total of 149 patients examining the demographic information of elective and emergency cases operated with the diagnosis of incisional hernia in our clinic. Between January 2014 –September 2015, 149 cases with incisional hernia, 125 of them were elective and 24 were emergency conditions, were operated in our clinic.

**Conclusion:** We concluded that mesh repair of incisional hernias elective and emergent cases associated with simultaneous colonic operations was possible, allowing abdominal wall anatomy reestablishment. There is no reason to believe that abdominal wall prostheses must be avoided in contaminated operations when an adequate surgical technique is used.

**Keywords:** Incisional hernia; Mesh repair

## Introduction

Incisional hernias represent one of the most frequent complications of abdominal surgery. The incidence is probably underestimated. The pathogenesis is complex and not fully understood, implying patient-related factors (i.e., collagen biochemistry, obesity, age) as well as technical factors, including, among others, wound infection, suture material, and types of incisions and closures [1,2]. Incisional hernias (IH) are one of the most common complications of abdominal surgery, with an overall estimated incidence ranging from 2 to 11% after abdominal operations [3]. Such hernias can cause serious morbidity, such as incarceration (in 6 to 15 percent of cases) and strangulation (in 2 percent). Although many techniques of repair have been described, the results are often disappointing.

After primary repair, rates of recurrence range from 24 percent to 54 percent. Repairs that include the use of mesh to close the defect have better but still high recurrence rates, up to 34 percent. After repair of recurrent incisional hernias, recurrence rates of up to 48 percent have been reported [4,5]. In

this study, we wanted to report the place of mesh use in our clinic in the treatment of incisional hernia, examining the demographic information of elective and emergency cases operated with the diagnosis of incisional hernia in our clinic, clinicopathologic findings, mesh use and its related results.

## Material and Method

A total of 149 cases operated with an incisional hernia under urgent and elective conditions were evaluated in the General Surgery Clinic of Göztepe Training and Research Hospital of the Istanbul Medeniyet University between January 2014 and September 2015. Patient files, surgical notes and patient reports were screened retrospectively. The cases of all the general surgery specialists working at the hospital were included in the study and one-on-one interviews were conducted in terms of surgical techniques and mesh use to the accompaniment of surgical techniques such as primary repair, mesh repair and laparoscopic repair. As an exclusion criterion, cases operated for other abdominal wall hernias, cases with incisional hernia repair

in addition to the main surgical indications and patients under the age of 18 were excluded from the study. IBM SPSS Statistics Version 23 was used for statistical analysis of data and findings.

## Findings

Between January 2014 -September 2015, 149 cases with incisional hernia, 125 of them were elective and 24 were emergency conditions, were operated in our clinic. While 82 of the cases that were operated under elective conditions were women (65.6%), 43 were men (34.4%), the average duration of hospital stay was 4.2 days and the mean age was 56, in 106 cases, mesh procedure was applied (84.8%) and in 19 cases (15.2%) mesh was not applied. In the cases that were operated under emergency conditions, it was determined that the number of women was 18 (75%) and the number of males was 6 (25%), while the average duration of hospital stay was 10.4 days and the mean age was 71 of them. While mesh method was used in 10 (41.7%) of emergency cases, it was not used in 14 (58.3%) cases.

When surgical techniques were evaluated, it was observed that 3 subjects (2.4%) in elective cases underwent laparoscopic surgical procedure, and that no laparoscopic procedure was performed for any subject in emergency cases. It was found that bowel resection was performed in 5 cases in post-operative follow-up of elective cases, and surgical mesh procedure was applied for 3 of them. It was determined mesh extirpation was required in 2 cases, abscess/hematoma drainage was yet performed in 2 cases and mesh was used in these 2 cases. No mortality was observed in any case in follow-ups. When emergency cases were examined, bowel resection was performed in 4 cases and meshes were used in 1 case. Abscess/hematoma drainage was administered in 2 cases and mesh method was used in 1 of 2 cases.

In emergency cases, it was found that the mortality rate was 16.6% (4 cases). When the cases with mortality were examined in itself, it was determined that 2 patients had mesh, while 3 patients had bowel resection. When the causes of exitus state were examined in 2 cases intestinal leakage, and in 2 cases mortality due to cardiopulmonary causes were observed. When the average hospital stays were compared, it was observed that emergency cases had longer hospitalization stays than elective cases. ( $p < 0.05$ ) When the cases were distributed in emergency and elective forms and then the average age of the patients was examined, it was determined that the age average in the emergency group was higher ( $p < 0.05$ ) and the preference of mesh method use in the elective cases was significantly higher than that in the emergency cases ( $p < 0.05$ ).

## Discussion

The principles of incisional hernia repair in the setting of surgical field contamination involve the removal of the source of contamination and the reconstruction of the abdominal wall. These operations are challenging and often result in complications that lead to both surgeon and patient frustration.

Colonic operations are classified as contaminated and infected (class 3-4) procedures according to Altemeier classification. For this reason the use of mesh in potentially contaminated procedures has been strongly discouraged [5]. Morris et al. [6] suggest abandonment of the use of mesh for repairs in which open bowel is encountered. A trend of increased pain and more severe wound infections after mesh repair were the basis for discontinuation of randomized control trial by Korenkov et al. highlighting the risk of using a foreign body in a hernia repair.

Temudom et al. [7] in a series of 50 complex prosthetic giant ventral hernia repairs reported that the two patients with simultaneous bowel surgery subsequently required mesh removal. Others recommend that intestinal resection be done first and hernia repair should be postponed for a second time. The overall 28.3% infection rate in this study is significantly higher compared to the previous studies. Kelly et al. [8] reported 21% infection rate in a series of emergency and elective incisional hernia repairs. Infection rates were 21% and 4% as reported by Alaedeen et al. and Ahmed et al. [9] in a similar patient casemix. We concluded that mesh repair of incisional hernias elective and an emergent case associated with simultaneous colonic operations was possible, allowing abdominal wall anatomy reestablishment. There is no reason to believe that abdominal wall prostheses must be avoided in contaminated operations when an adequate surgical technique is used.

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