

## Large incisional hernia in the elderly: which kind of treatment?

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**Abstract.** Incisional hernia is one of the commonest long-term complications of open abdominal surgery. Especially in old patients (over 70 years), the incisional hernias represent an invalidating pathology whose treatment, for the high incidence of associated respiratory and cardiovascular disease, offers difficulties related to the preoperative and postoperative management as well as to the surgical treatment. This paper reports the Author's experience about the surgical treatment of large incisional hernia (> 10 cm) with open prosthetic mesh repair in geriatric patients.

**Keywords:** Incisional hernia, open repair, mesh

### Introduction

Incisional hernia is one of the commonest long-term complications of open abdominal surgery.

In perspective studies, its incidence after midline laparotomy varies from 11% to 20% (1, 2).

Especially in old patients (over 70 years), the incisional hernias represent an invalidating pathology whose treatment, for the high incidence of associated respiratory and cardiovascular disease, offers difficulties related to the preoperative and postoperative management as well as to the surgical treatment.

This paper reports the author's experience about the surgical treatment of large incisional hernia (> 10 cm) with open prosthetic mesh repair in geriatric patients.

### Materials and methods

A retrospective review of all the patients admitted for large incisional hernia in the Department of Surgical Sciences "F. Durante" has been performed.

All the patients have been preoperatively evaluated by the cardiologist and the anaesthesiologist. Respiratory functional test, blood gas analysis, chest X-ray and routine blood examinations have been performed.

Preoperative antibiotic profilaxis with third generation cephalosporin (vancomycin for a known or suspected allergy) was given.

The previous laparotomy scar was removed as first step of the surgical operation.

Hernial sac was dissected and opened to allow division of adhesion before the contents of the sac could be reduced into the abdomen and to enable digital exploration of the internal abdominal wall. To minimize contact between the mesh and the underlying organs, any peritoneal defect was sutured with absorbable line.

Polipropilene mesh was placed between the fascia and peritoneum (according to Rives-Stoppa technique) tailored to the defect so that almost 4-5 cm of the mesh overlapped the edges of the fascia and the mesh was sutured to the back of the abdominal wall with an interrupted non-absorbable suture. One or two suc-

tion drains were placed over the mesh and one in the subcutaneous space through separate incisions. Skin was approximated with interrupted suture.

When the resuture of the peritoneum was not possible the inlay technique has been performed with intraperitoneal placement of the mesh fixed with an interrupted non-absorbable suture or with four small slowly-absorbable continuous sutures.

Standard postoperative care was performed including early mobilization and accurate pain management.

## Results

Between January 2001 and December 2004 we identified 31 patients that underwent surgical operation for large incisional hernia. According to the existing literature, we considered large incisional hernia all the abdominal defect with a diameter >10 cm (3).

Of these patients 9 (29.03%) were >70 years old (range 70-75 y.o.), the previous surgical operation was prostatectomy in 2 cases, gastric resection in 2 cases, repair of aortic aneurysm in 4 cases and open colectomy in 1 case.

Hernias were localized in 4 patients below the umbilicus, in 4 patients above the umbilicus and in 1 case was a complete "eventration".

Six patients underwent to open Rives Stoppa ventral hernia repair using a polypropylene mesh, while in three patients inlay technique with intraperitoneal

placement of the mesh (2 Dual Mesh® and 1 Parietex®) was performed.

The average size of the fascial defect was 10.5x13 cm. In the patient with eventration the size of the wall defect was 30x23 cm.

The postoperative length of stay was from 8 to 16 days. Morbidity was 11,1% because one patient had postoperative wound infection solved with conservative treatment (mesh removal was not necessary).

There were no postoperative mortality and no recurrences in the observed 9 old patients.

We observed improvement in the postoperative respiratory functional test in the 3 cases treated with intraperitoneal placement of the mesh (one of them was the patient with "eventration") and had a severe preoperative respiratory failure (Tab. 1).

## Conclusions

The treatment of incisional hernia is a current problem in modern geriatric surgery.

Chronological age is not a significant predictor of adverse postoperative outcomes (4) and our experience confirms that an early surgical treatment is desirable once the incisional hernia has been diagnosed even in old patients (5).

Mesh repair is superior to suture repair and results in lower recurrence rates (0-10%) and less discomfort in the long term (6-10).

As reported in the literature, laparoscopic mesh repair produces similarly low recurrence rates (0-9%)

**Table 1.** Comparison of preoperative and postoperative respiratory function in patients with significant modifications of FEV1, FEV1/CVF and PaO<sub>2</sub> values

Type of incisional hernia	Type of operation	Preoperative values	Postoperative values (after 1 year)
Eventration	Intraperitoneal placement of mesh (Parietex®)	FEV1=1.6 FEV1/CVF=75% PaO <sub>2</sub> =84 mmHg	FEV1=2.18 FEV1/CVF=78.2% PaO <sub>2</sub> =95 mmHg
Above the umbilicus (12x12 cm)	Intraperitoneal placement of mesh (Dual Mesh®)	FEV1=0.7 FEV1/CVF=68% PaO <sub>2</sub> =68 mmHg	FEV1=1.1 FEV1/CVF=75% PaO <sub>2</sub> =77 mmHg
Above the umbilicus (11,5x14 cm)	Intraperitoneal placement of mesh (Dual Mesh®)	FEV1=1.3 FEV1/CVF=75% PaO <sub>2</sub> =81 mmHg	FEV1=1.56 FEV1/CVF=80% PaO <sub>2</sub> =90 mmHg

with acceptable morbidity (7-8) but the experience with this new method is still limited.

In cases presenting a severe respiratory failure due to a big abdominal wall defect, FEV<sub>1</sub> and Tiffeneau Index significantly increase after operation.

An accurate management of the preoperative preparation, the correct use of perioperative antibiotic therapy and an accurate surgical technique using adequate prosthetic material to correct the incisional hernia (9) guarantee an adequate treatment of this disease in old patients with an acceptable rate of morbidity.

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