

The Elective Surgical Management of Incisional Herniae: A Review

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Citation

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Abstract

This review article looks at the evidence available comparing the different surgical techniques for managing incisional herniae (direct suture closure, open mesh repair and laparoscopic mesh repair). Open mesh repair appears to have a lower rate of recurrence than direct suture closure. Laparoscopic mesh repair appears to have a lower rate of infection than open mesh repair, with no significant difference in recurrence rate.

INTRODUCTION

A hernia is an abnormal protrusion of an organ, or part of an organ through its containing wall (₁). An incisional hernia is a hernia in relation to a previous incision. It is a common complication of abdominal surgery, and is thought to have an overall incidence of around 11-23% of cases. Potentially it can be an important source of morbidity for the patient (₂). An incisional hernia usually starts as a asymptomatic partial disruption of the deeper layers of a laparotomy wound during the immediate or early post-operative period. Often this event will go unnoticed if the skin wound remains intact (₁).

There are thought to be various aetiological factors (see table below), which can be divided into generalized and those local to the initial wound.

Figure 1

Table 1: Shows the various aetiological factors associated with incisional hernia development

General Factors	Local Factors
Obesity	Infection
Immunocompromise	Excessive tension at wound closure
Malnutrition	Longitudinal > transverse incision
Anaemia	Lower midline incision
Chronic cough	
Straining at stool	
Steroid use	
Jaundice	
Pregnancy	
Abdominal aortic aneurysm	

Very often they are asymptomatic. Very rarely do they strangulate, due to the often wide defect. The operative strategies are direct suture repair, open mesh repair or laparoscopic mesh repair. Direct suture repair is often

performed using non-absorbable sutures. They can be used in a simple apposition of the defect edges or more complicated techniques can be applied. An open mesh repair involves application of a non-absorbable mesh over the defect in either onlay, extra-peritoneal or intra-peritoneal methods. Laparoscopic repair is essentially the use of laparoscopic surgery to apply an intra-peritoneal mesh (₃)

AIMS

The aim of this study was to assess the evidence for each of the different surgical techniques used in the elective repair of incisional herniae, by looking for studies that directly compared the techniques.

METHODS

A search was performed of "pubmed" to look for appropriate studies directly comparing the different surgical techniques for the elective surgical management of incisional herniae. Only english language papers were used. The keywords used were "incisional hernia", "repair of incisional hernia", "mesh repair of incisional hernia" and laparoscopic repair of incisional hernia". The only studies used were; multicentre prospective randomised trials, systematic reviews or meta-analyses.

RESULTS

1. OPEN SUTURE REPAIR VERSUS OPEN MESH REPAIR

Two prospective multicentre randomized studies were found. These were from the same trial, but with short and long term follow up (_{3,4}). These studies chiefly compared the

recurrence rates between the two techniques. The results are outlined in the table below.

Figure 2

Table 2: Shows multi-centre randomised trials comparing direct suture closer with open mesh repair

Name of author	Year	N= direct suture group	N= open mesh group	Recurrence rates (%)	Mean follow-up
Luijendijk et al	2000	97	84	Suture 46% Mesh 23%	26 months
Burger et al	2004	97	84	Suture 63% Mesh 32%	10 years

A systematic review (2) found four retrospective studies directly comparing open mesh versus direct suture techniques. These studies only looked at recurrence rates. The rate of recurrence in the direct suture group was 33-63%, and in the open mesh group the recurrence rates were 7- 25% (2).

Theses studies show that there appears to be an increase in recurrence in the direct suture group when compared to the open mesh repair. However there were no studies available comparing the rates of other complications between the two techniques.

There were no studies available that directly compared the different techniques of open mesh repair.

2. OPEN MESH REPAIR VERSUS LAPAROSCOPIC MESH REPAIR

Although there were multiple studies performed directly comparing the open mesh repair and the laparoscopic mesh repair, only one meta-analysis was found that compared these techniques and analysed both short and long term complications (6). This involved five studies (all prospective, large number trials, but no randomised trials available). The total patient population for this meta-analysis was 351 (48-52% split between open and laparoscopic groups). This

paper found the following statistically significant differences: longer operation time in the laparoscopic group, reduced length of stay in the laparoscopic group and a reduced rate of wound infection in the laparoscopic group. There was no significant difference in recurrence rate between the two groups (6).

CONCLUSIONS

For the elective surgical management of incisional herniae open mesh repair would seem to offer a lower recurrence rate then direct suture repair. However laparoscopic mesh repair appears to offer a reduced rate of wound infection than open mesh repair, with no difference in recurrence rates between the two techniques.

DISCUSSION

More work appears to be needed to assess the complication rate (other than recurrence) between open mesh and direct suture repairs. There appears to be a lack of studies comparing the different techniques for open mesh repair. There is a need for randomised prospective trials comparing open mesh with laparoscopic mesh repair.

References

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