

Clinical Science

# Long-term recurrence and chronic pain after repair for small umbilical or epigastric hernias: a regional cohort study



Mette W. Christoffersen, M.D.<sup>a,\*</sup>, Frederik Helgstrand, M.D.<sup>b,c</sup>,  
Jacob Rosenberg, D.M.Sc., F.A.C.S.<sup>b,d</sup>,  
Henrik Kehlet, Ph.D., F.A.C.S. (hon)<sup>b,e</sup>, Pernille Strandfelt, B.N.<sup>a</sup>,  
Thue Bisgaard, D.M.Sc., F.R.C.S.<sup>a,b</sup>

<sup>a</sup>Gastro Unit Surgical Division, Hvidovre Hospital, Kettegård Alle 30, Copenhagen University, Hvidovre, DK-2650 Denmark; <sup>b</sup>Danish Hernia Database, Copenhagen, Denmark; <sup>c</sup>Department of Gastrointestinal Surgery, Rigshospitalet, Copenhagen University, Blegdamsvej 9, DK-2200 Copenhagen, Denmark; <sup>d</sup>Gastro Unit, Surgical Division, Herlev Hospital, Copenhagen University, Herlev Ringvej 75, DK-2730 Copenhagen, Denmark; <sup>e</sup>Section of Surgical Pathophysiology, Rigshospitalet, Copenhagen University, Blegdamsvej 9, DK-2200 Copenhagen, Denmark

## KEYWORDS:

Primary ventral hernia repair;  
Mesh repair;  
Sutured repair;  
Recurrence;  
Chronic pain

## Abstract

**BACKGROUND:** Mesh repair reduces the risk of reoperation for recurrence in patients with primary ventral hernias. However, reoperation for recurrence underestimates total recurrence (reoperation + clinical) and mesh reinforcement may induce chronic pain. This study investigated the total recurrence and risk of chronic pain in small primary ventral hernias.

**METHODS:** A cohort study with questionnaire and clinical follow-up was conducted. Patients with primary, elective, open mesh or sutured repair for a small umbilical or epigastric hernia ( $\leq 2$  cm) were included.

**RESULTS:** One thousand three hundred thirteen patients completed the questionnaire. The total cumulated recurrence rate after primary repair was 10% for mesh repair and 21% for sutured repair ( $P = .001$ ). The incidence of chronic pain was 6% after mesh repair and 5% after sutured repair ( $P = .711$ ).

Dr. Rosenberg reports grants from Baxter Healthcare, grants from Johnson & Johnson, grants and personal fees from Bard, personal fees from Merck, outside the submitted work. Dr. Bisgaard reports personal fees from Bard, grants from J and J, grants from Covidien, outside the submitted work. The study was sponsored by a private foundation, that had no influence on design; data collection, data analysis, or interpretation of data. Nor in the writing of the manuscript; and in the decision to submit the manuscript for publication.

The study was approved by the Danish Data Protection Agency (reg. no. SN-16-2012), the local ethics committee (reg. no. SJ-298), and is registered at [clinicaltrials.gov](http://clinicaltrials.gov) no. (NCT01635868).

The manuscript has not been or will not be published anywhere else than the American Journal of Surgery. The results were presented at the Annual Danish Surgical Society Congress, November 2013 and will be presented at the 36th Annual International Congress of the European Hernia Society, May 2014, Edinburgh.

This study was funded by a private foundation ("Edgar Schnohr and wife Gilberte Schnohr's foundation"), which is established to support independent surgical and anesthesiological science.

\* Corresponding author. Tel.: +45-26288934; fax: +45-38623777.

E-mail address: [mette.willaume@gmail.com](mailto:mette.willaume@gmail.com)

Manuscript received April 14, 2014; revised manuscript May 13, 2014

**CONCLUSIONS:** Mesh repair halved long-term risk of recurrence after repair for small ventral hernias without increased risk of chronic pain.  
© 2015 Elsevier Inc. All rights reserved.

An open repair for a small umbilical or epigastric hernia is a common minor surgical procedure.<sup>1</sup> However, the optimal repair technique remains controversial.<sup>1-5</sup> Although reoperation for recurrence is significantly reduced after mesh repair compared with sutured repair,<sup>1,6</sup> reoperation for recurrence may underestimate overall recurrence (reoperation or clinical) by 3- to 4-fold.<sup>7</sup> Surgeons have been reluctant to use mesh reinforcement in these small hernias<sup>4,5</sup> because mesh repair has been suspected of causing complications and chronic pain<sup>3,8,9</sup> as observed in inguinal hernia repair.<sup>10,11</sup>

The risk of chronic pain after mesh and sutured repair for a small umbilical or epigastric hernia may be 5% to 10%,<sup>9,12,13</sup> but evidence is derived from small, retrospective studies. Furthermore, potential risk factors for chronic pain and recurrence after this type surgery are unknown.<sup>13-15</sup>

The primary aim of this study was to investigate the risk of recurrence, and secondary aim was chronic pain.

## Methods

We conducted a cohort study from the Region of Zealand in Denmark. The region of Zealand is the largest part of Denmark harboring 2,208,348 inhabitants (in 2013). The inhabitants of Zealand are a representative sample of the entire Danish population.<http://da.wikipedia.org/wiki/Sjælland> The study included 3 years consecutive patients, prospectively registered in the Danish Ventral Hernia Database (DVHD, see below for details). The perioperative registry data were combined with data from a prospective follow-up questionnaire (see below) and clinical follow-up. We included patients undergoing elective open mesh and sutured repair for an umbilical or epigastric hernia with a fascial defect diameter of less than or equal to 2 cm, who were registered in the DVHD from January 1, 2008 to December 31, 2010. We did not include laparoscopic repair, umbilical or epigastric hernia defects greater than 2 cm, index recurrent hernia repairs, or emergency hernia repairs. Patients who had emigrated, patients who had a subsequent abdominal operation after their ventral hernia repair (abdominal surgery between primary hernia repair and recurrence), or patients who were lost to follow-up (no response to several mailed questionnaire or to several phone calls) were excluded. Primary endpoint was cumulated recurrence rate (reoperation or clinical). Recurrence was defined as reoperation for recurrence or a present clinical recurrence. Reoperation for recurrence was defined as an operation for an umbilical or epigastric hernia after a previous similar primary hernia repair. We included only one (the first) reoperation for recurrence for

each patient. Clinical recurrence was defined as a fascial defect with protrusion of bowel or lump.<sup>7</sup> Secondary endpoints were moderate or severe chronic pain at the site of hernia/previous hernia (see questionnaire and clinical follow-up below) and predetermined risk factors for recurrence and chronic pain.

The follow-up period was defined as the time from the primary repair until recurrence, death, or end of the study period (June 1, 2013).

DVHD is a nationwide registry providing information about ventral hernia repairs since 2007. The DVHD provides intraoperative information on 37 different variables, including information on reoperation for recurrence, primary/recurrent repair, whether repair was secondary to another primary surgical procedure, mesh material and mesh positioning, suture material, surgical technique, and so on. The registry does not include information on postoperative events such as surgical complications.<sup>16</sup> Therefore, data from DVHD were supplemented with data from the Danish National Patient Registry (DNPR), ensuring a 100% complete follow-up on deaths, emigration, mortality, reoperation for complications, and reoperation for recurrence. Postoperative medical complications are not recorded in the DNPR. In Denmark, it is mandatory to register all hernia repairs. Every Danish surgeon is obliged by a governmental decision to online register all ventral hernia repairs in the DVHD. Data registration in the DVHD is validated by electronic match analysis with the unique DNPR and mismatches are listed continuously and made available to individual surgical departments for correction and missing data. Hence, it is each surgical department that is responsible for the reporting. A recent comparative study on DVHD data and registrations in hospital files showed that DVHD covered 89% to 99% of all ventral hernia repairs in Denmark.<sup>16,17</sup>

In this study, surgical site infection (SSI) was defined as infection requiring skin opening/incision and/or reoperation with mesh removal. Information was achieved by a combination of data from the DNPR (which provides unique codes for every kind of surgery) and data from DVHD. Other surgical complications were defined as complications requiring reoperation (see above). Thus, seroma formation not requiring surgical intervention was not registered. Reoperation for early recurrence was not regarded a complication but registered as a reoperation for recurrence.

The size of the hernia defect was defined as the widest diameter of the hernia defect measured intraoperatively by the surgeon. The types of hernia repairs were characterized as follows: mesh repair (onlay, inlay/plug, sublay, and intraperitoneal) and sutured repair (with fast absorbable sutures [eg polyglactin], slowly absorbable suture [eg polydioxanone], or nonabsorbable suture [eg polypropylene]).

Download English Version:

<https://daneshyari.com/en/article/4278808>

Download Persian Version:

<https://daneshyari.com/article/4278808>

[Daneshyari.com](https://daneshyari.com)