



Original research

Laparoscopic management of non-midline incisional hernia: A multicentric study



Alessia Ferrarese ^{a,*}, Stefano Enrico ^a, Mario Solej ^a, Alessandra Surace ^a, Mario Junior Nardi ^b, Paolo Millo ^b, Rosaldo Allietta ^b, Cosimo Feleppa ^c, Luigi D'Ambra ^c, Stefano Berti ^c, Enrico Gelarda ^d, Felice Borghi ^d, Gabriele Pozzo ^e, Bartolomeo Marino ^e, Emma Marchigiano ^f, Pietro Cumbo ^f, Maria Paola Bellomo ^g, Claudio Filippa ^g, Paolo Depaolis ^g, Mario Nano ^a, Valter Martino ^a

^a University of Turin, Department of Oncology, School of Medicine, Teaching Hospital "San Luigi Gonzaga", Section of General Surgery, Orbassano, Torino, Italy

^b Hospital "Umberto Parini", Section of General Surgery, Aosta, Italy

^c Hospital "Sant'Andrea", Section of General Surgery, La Spezia, Italy

^d Hospital "Santa Croce e Carle", Section of General Surgery, Cuneo, Italy

^e Hospital "Civile", Section of General Surgery, Asti, Italy

^f Hospital "Santa Croce", Section of General Surgery, Moncalieri, Italy

^g Hospital "Gradenigo", Section of General Surgery, Torino, Italy

ARTICLE INFO

Article history:

Available online 21 June 2016

Keywords:

Non-midline ventral hernia
Ventral hernia
Laparoscopic repair

ABSTRACT

Background: The laparoscopic repair of non-midline ventral hernia (LNM) has been debated. The aim of this study is to analyze our experience performing the laparoscopic approach to non-midline ventral hernias (NMVHs) in Northwest Italy for 6 years.

Methods: A total of 78 patients who underwent LNM between March 2008 and March 2014 in the selected institutions were analyzed. We retrospectively analyzed the peri- and postoperative data and the recurrence rate of four subgroups of NMVHs: subcostal, suprapubic, lumbar, and epigastric. We also conducted a literature review.

Results: No difference was found between the four subgroups in terms of demographic data, defect characteristics, admission data, and complications. Subcostal defects required a shorter operating time. Obesity was found to be a risk factor for recurrence.

Conclusions: In our experience, subcostal defects were easier to perform, with a lower recurrence rate, lesser chronic pain, and faster surgical performance. A more specific prospective randomized trial with a larger sample is awaited. Based on our experience, however, the laparoscopic approach is a safe treatment for NMVHs in specialized centers.

© 2016 IJS Publishing Group Ltd. Published by Elsevier Ltd. All rights reserved.

Abbreviations: NMVH, non-midline ventral hernia; LNM, laparoscopic repair of non-midline ventral hernia; SCd, subcostal defects; SPd, suprapubic defects; Ld, lumbar defects; Ed, epigastric defects; BMI, Body Mass Index; COPD, Chronic Obstructive Pulmonary Disease; NRS, numerical rating scale; ASA, American Society of Anesthesiologists score.

* Corresponding author. Department of Oncology, University of Turin, Section of General Surgery, San Luigi Gonzaga Teaching Hospital, Regione Gonzole 10, 10043, Orbassano, Turin, Italy.

E-mail addresses: alessia.ferrarese@gmail.com (A. Ferrarese), Stefano_e@libero.it (S. Enrico), mariosolej@gmail.com (M. Solej), alessandra_sur@gmail.com (A. Surace), marionardijr@libero.it (M.J. Nardi), pmillo@ausl.vda.it (P. Millo), rallietta@ausl.vda.it (R. Allietta), cosimofeleppa@gmail.com (C. Feleppa), luigidambra68@libero.it (L. D'Ambra), Stefano.berti@asl5.liguria.it (S. Berti), enicogelarda@email.it (E. Gelarda), borghi.f@ospedale.cuneo.it (F. Borghi), gpozzo@asl.at.it (G. Pozzo), bmarino@asl19.asti.it (B. Marino), emma.marchigiano@libero.it (E. Marchigiano), pietrocumbo@gmail.com (P. Cumbo), paola.bellomo@fastwebnet.it (M.P. Bellomo), claudio.filippa@fastwebnet.it (C. Filippa), paolo_depaolis@fastwebnet.it (P. Depaolis), mario.nano@unito.it (M. Nano), valtermartino.md@gmail.com (V. Martino).

<http://dx.doi.org/10.1016/j.ijsu.2016.06.023>

1743-9191/© 2016 IJS Publishing Group Ltd. Published by Elsevier Ltd. All rights reserved.

1. Introduction

Incisional hernias are defined as “Any abdominal wall defect with or without a bulge in the area of a postoperative scar perceptible or palpable by clinical examination or imaging” [1]. The incidence of incisional hernia after open surgery is approximately 2–11% [2–4]. In 2000, Chevrel introduced a classification of ventral hernia based on three proposed parameters: localization of defects (median or lateral), size of hernia, and recurrence at diagnosis [5]. Although the use of laparoscopy in recent years has reduced the incidence of incisional hernia [6,7], the overall impact remains high. Non-midline ventral hernias (NMVHs) form a subgroup of ventral hernias, accounting for 6–17% of all ventral hernias. Moreno-Egea et al. [8] noted that the role of laparoscopy in NMVHs is not clear, because different muscle groups are involved. Moreover, a few articles address the mini-invasive repair of these specific defects. Nevertheless, the laparoscopic approach in abdominal surgery plays a key role in terms of the length of incision, total hospital stay, and patient preference. The main prerequisites for laparoscopic abdominal wall surgery are adequate patient selection, correct measurement of defect dimensions, and surgical ability. A gold standard technique for NMVH repair cannot be established because of the different topographic variations in these defects [9].

The aim of this study is to analyze our experience (of 6 years) performing the laparoscopic repair of NMVHs in Northwest Italy and to analyze the stratification of results for age.

2. Methods

This multicentric prospective study included seven North Italian institutions in which 78 patients underwent laparoscopic repair of non-midline ventral hernias (LNM) between March 2008 and March 2014.

Patients were divided into four subgroups according to defect position: subcostal defects (SCd), suprapubic defects (SPd), lumbar defects (Ld), and epigastric defects (Ed).

We retrospectively analyzed the demographic data (age, gender, body mass index (BMI), chronic obstructive pulmonary disease (COPD), and previous surgery), defect data (localization, numbers, and type of previous surgery), type of preoperative study, intraoperative data (operating time, conversion rate, and drain), device characteristics (mesh used and method of fixation), and surgical complications (seroma, hematoma, recurrence, and chronic pain) (Table 1).

Postoperative pain was evaluated using a visual analog scale (VAS) and a one-dimensional numerical rating scale (NRS), graded from 0 to 10 [10].

Evaluation was performed 1 day after surgery, at discharge, and one month after surgery. The patients were also requested to contact us if they experienced pain within 4 months after surgery. We used the definition proposed in the guidelines for the prevention of chronic postoperative pain: chronic pain was defined as that which persists for >6 months after surgery caused by the synthetic material (mesh and fixing devices) used to repair the defect [11]. The exclusion criteria were patients with American Society of Anesthesiologists (ASA) score >3, emergency cases, and neoplastic patients.

2.1. Surgical technique

All repairs were performed with a laparoscopic approach; in 74% of cases, the pneumoperitoneum was established at 12 mmHg using an open Veress-assisted approach. The number of trocars is dependent on the size and position of the defects; thus, in all cases,

we placed the ports so as to facilitate triangulation. Additional ports were placed in the case of new defects being discovered during laparoscopic abdominal wall exploration or difficult large mesh fixation. Lysis of adhesion was performed “à la demande”; a bladder catheter was inserted during the repair of lower defects (SPd and Ld). In all cases, the fibrotic ring of the hernia was completely dissected; the mesh type was selected during surgery based on the intraoperative defect measurement. A 5-cm overlap was ensured; some surgeons used a suture-passer needle to place the mesh using guidewires previously placed on the mesh cardinal points. Different fixation techniques were used depending on the defect localization, which mostly involved the use of staplers, glue, and sutures. In some cases, two different fixation techniques were used simultaneously. The pneumoperitoneum was reduced (at 10 mmHg) before fixation in all cases. The ports were removed under visual control, and the umbilical port access fascia was sutured. All procedures were performed by expert surgeons in abdominal wall reconstruction.

2.2. Follow-up evaluation

The subjects were followed up in the outpatient setting 1 week and 1 month after surgery. They were subjected to physical examinations and, only in selected cases, computed tomographic (CT) scanning to detect delayed complications. Chronic pain, recurrence rate, and patient satisfaction were evaluated.

2.3. Medical literature study

We performed a literature review to identify all case series, reviews, and case reports of NMVHs. PubMed, OVID platform, Cochrane Library, Scopus, ISI Web of Knowledge, and Google Scholar were searched using the following keywords: non-midline ventral hernia, laparoscopy/ventral hernia, ventral hernia, laparoscopic hernioplasty, and incisional hernia.

2.4. Statistical analysis

The statistical proportions of dichotomous variables (classification and type of hernia, and number of complications) were compared via the chi-squared test and Fisher's exact test.

Continuous variables (age distribution, BMI distribution, mean operative time, postoperative length of hospital stay, operating time, and ASA score) were expressed as the average (range) and analyzed using the Mann–Whitney *U* test. All statistical analyses were performed using R software (vers. 2.6.2); a *P*-value of <0.05 was considered statistically significant.

3. Results

The clinical characteristics of the patients are listed in Table 1. All patients were above the age of 55 (89% > 60 years), with a mean age of 61 years (± 7.1). Of the 78 patients, 40 were female. The mean BMI was 28 kg/m² (± 6). The most common defect was Ld, followed by SCd, Ed, and SPd. Ld was more often a single defect, whereas Ed had the highest incidence of multiple defects.

Preoperative CT scanning was performed for 54 of 78 patients and ultrasound US evaluation in 46 of 78 patients.

The “skin to skin time” (in min) was significantly different. The SCd repair (87.9 min) was faster than the repair of other defects; SPd repair had the longest operating time (131.3 min). An additional port was added in eight cases of SCd, six cases of Ld, four cases of Ed, and one case of SPd. Ed and SPd were similar with regard to midline defects, and fixation was performed using tacks along the entire perimeter of the defect (also on bone). In 50% of

Download English Version:

<https://daneshyari.com/en/article/4285375>

Download Persian Version:

<https://daneshyari.com/article/4285375>

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