Trocar site hernia: A rare incidental case

Kemal Arda, Kansav Tunc Kizilkanat, Hasan Aydin, Halil Ibrahim Serin

ABSTRACT

Introduction: The incidence of laparoscopic trocar site hernia ranges from 0.1–1.3% in all surgical subspecialties, older age (age >60), female sex, increased body mass index, diabetes mellitus, long operation time, size-type-site of trocar are risk factors for developing a trocar site hernia.

Case Report: Herein, a trocar site hernia of a 55-year-old female patient was presented with a history of type 2 diabetes mellitus, chronic obstructive pulmonary disease, left inguinal pain and swelling after laparoscopic bilateral salpingo-oophorectomy.

Conclusion: Trocar sites should be examined by imaging techniques following laparoscopic surgery. Procedures like smaller diameter trocars, less manipulated trocars and Z-incision technique may decrease the incidence of this complication, despite the increased number of laparoscopic surgeries.
CASE REPORT

Trocar site hernia: A rare incidental case

Kemal Arda, Kansav Tunc Kizilkanat, Hasan Aydin, Halil Ibrahim Serin

ABSTRACT

Introduction: The incidence of laparoscopic trocar site hernia ranges from 0.1–1.3% in all surgical subspecialties, older age (age >60), female sex, increased body mass index, diabetes mellitus, long operation time, size-type-site of trocar are risk factors for developing a trocar site hernia. Case Report: Herein, a trocar site hernia of a 55-year-old female patient was presented with a history of type 2 diabetes mellitus, chronic obstructive pulmonary disease, left inguinal pain and swelling after laparoscopic bilateral salpingo-oophorectomy. Conclusion: Trocar sites should be examined by imaging techniques following laparoscopic surgery. Procedures like smaller diameter trocars, less manipulated trocars and Z-incision technique may decrease the incidence of this complication, despite the increased number of laparoscopic surgeries.

Keywords: Complication, Laparoscopic surgery, Salpingo-oophorectomy, Trocar site hernia

INTRODUCTION

Nowadays, the use of laparoscopic surgery increased, as it has significantly reduced the morbidity by decreasing duration of hospitalization and time to patient recovery. However, the increasing use of laparoscopic surgery has resulted in an increasing incidence of complications [1–10].

The incidence of laparoscopic trocar site hernia ranges from 0.1–1.3% in all surgical subspecialties [1–7].

Older age (age >60), female sex, increased body mass index, diabetes mellitus, long operation time, size-type-site of trocar are risk factors for developing a trocar site hernia [2].

Early, late, and special types of trocar site herniations have been seen [1]. Early-onset hernias are apparent within 2 to 12 days after surgery often with small bowel obstruction and re-operated. Late-onset hernias present with a bulge several months after surgery. The rate of reoperation is low and these types of hernias are usually managed conservatively. Special type is seen just after the operation and even during operation.

Most of the trocar site hernias are 10 mm or greater in diameter. There are few reports about trocar site hernia 5 mm or less in diameter [4].

How to cite this article

Article ID: Z01201612CR10736KA

doi:10.5348/ijcri-2016148-CR-10736

International Journal of Case Reports and Images, Vol. 7 No. 12, December 2016. ISSN – [0976-3198]
CASE REPORT

A 55-year-old female (body mass index 30 kg/m$^2$) with a history of type 2 diabetes mellitus and chronic obstructive pulmonary disease presented with left inguinal pain and swelling after laparoscopic bilateral salpingo-oophorectomy 14 months ago. For laparoscopic salpingo-oophorectomy operation 10 mm bladed trocar was used, this operation duration was approximately 60 minutes.

On physical examination there was scars secondary to laparoscopic surgery on umbilical and right lower quadrant. There was swelling area on left lower quadrant in diameter 3x4 cm.

Physical examination findings suggested trocar site hernia and abdominal computed tomography was performed. Computed tomography scan of the abdomen and pelvis with an intravenous contrast medium demonstrated mesenteric fat tissue herniation through a defect of the internal and external oblique fascia and peritoneum at the port site (Figure 1).

The medical history of the patient revealed that 10-mm trocar was used at the operation. She was scheduled for surgery.

With general anesthesia, the fascial defect was repaired primarily by using 1-0 Prolene suture. Surgery was done successfully and the patient tolerated the procedure well. She was discharged home on the fourth postoperative day. On control examination she had no problem about surgery.

DISCUSSION

With the expand of usage of laparoscopic surgery the incision-related complications were reduced [10]. But trocar site hernia was noted as a new complication due to laparoscopic operation [1, 7, 10].

The risk factors for trocar site hernia were reported as follows [3, 5, 6, 10]:

- pre-existing umbilical hernia
- chronic obstructive pulmonary disease
- diabetes mellitus
- arterial insufficiency
- immune deficiency
- malnutrition
- smoking
- infection
- obesity
- sex

Our patient had as risk factors, chronic obstructive pulmonary disease, diabetes mellitus, obesity (body mass index: 30 kg/m$^2$) and female sex.

In computed tomography scan, a trocar site hernia was seen in left lower quadrant. A mesenteric omental fat tissue was herniated from the fascial defect. The patients were generally admitted to the hospital with the complaints of pain due to herniation, incarceration and obstruction symptoms. In our patient, 3x4 cm mass was evident in the left lower quadrant, pain and the other general symptoms were almost absent

To our belief, this herniation was recurred due to the inappropriate surgical closing of the entrance site of trocar.

In general, surgeons do not attempt to close the fascia of ports and trocars less than 10 mm. Recent studies recommend the closure of all bladed trocar sites >5 mm [1–7].

When trocar is inserted tangentially through the abdominal wall and both the fascia and the peritoneum are closed, when the incision is greater than 5 mm, trocar site hernias may be prevented. Some researchers suggest that to use absorbable hemostats or omental plug for prevention of trocar site hernia instead of fascial closure [8]. To close the trocar defects with surgical sutures, is the widely known and performed method, we also advise to manipulate the trocar defect with primary sutures in order to overcome the risk of herniation of trocar sites.

CONCLUSION

In conclusion, trocar sites should be examined by imaging techniques following laparoscopic surgery. Smaller diameter trocars, less manipulated trocars, Z-incision technique, closing fascial defect, direct vision of deflation air and removing of trocars may decrease the incidence of this complication, despite the increased number of laparoscopic surgeries.

**********
Author Contributions
Kemal Arda – Substantial contributions to conception and design, Acquisition of data, Analysis and interpretation of data, Drafting the article, Revising it critically for important intellectual content, Final approval of the version to be published
Kansav Tunc Kizilkanat – Acquisition of data, Analysis and interpretation of data, Revising it critically for important intellectual content, Final approval of the version to be published
Hasan Aydin – Analysis and interpretation of data, Revising it critically for important intellectual content, Final approval of the version to be published
Halil Ibrahim Serin – Analysis and interpretation of data, Revising it critically for important intellectual content, Final approval of the version to be published

Guarantor
The corresponding author is the guarantor of submission.

Conflict of Interest
Authors declare no conflict of interest.

Copyright
© 2016 Kemal Arda et al. This article is distributed under the terms of Creative Commons Attribution License which permits unrestricted use, distribution and reproduction in any medium provided the original author(s) and original publisher are properly credited. Please see the copyright policy on the journal website for more information.

REFERENCES
About Edorium Journals
Edorium Journals is a publisher of high-quality, open access, international scholarly journals covering subjects in basic sciences and clinical specialties and subspecialties.

Invitation for article submission
We sincerely invite you to submit your valuable research for publication to Edorium Journals.

But why should you publish with Edorium Journals?
In less than 10 words - we give you what no one does.

Vision of being the best
We have the vision of making our journals the best and the most authoritative journals in their respective specialties. We are working towards this goal every day of every week of every month of every year.

Exceptional services
We care for you, your work and your time. Our efficient, personalized and courteous services are a testimony to this.

Editorial Review
All manuscripts submitted to Edorium Journals undergo pre-processing review, first editorial review, peer review, second editorial review and finally third editorial review.

Peer Review
All manuscripts submitted to Edorium Journals undergo anonymous, double-blind, external peer review.

Early View version
Early View version of your manuscript will be published in the journal within 72 hours of final acceptance.

Manuscript status
From submission to publication of your article you will get regular updates (minimum six times) about status of your manuscripts directly in your email.

Our Commitment

Six weeks
You will get first decision on your manuscript within six weeks (42 days) of submission. If we fail to honor this by even one day, we will publish your manuscript free of charge.*

Four weeks
After we receive page proofs, your manuscript will be published in the journal within four weeks (31 days). If we fail to honor this by even one day, we will publish your manuscript free of charge and refund you the full article publication charges you paid for your manuscript.*

Favored Author program
One email is all it takes to become our favored author. You will not only get fee waivers but also get information and insights about scholarly publishing.

Institutional Membership program
Join our Institutional Memberships program and help scholars from your institute make their research accessible to all and save thousands of dollars in fees make their research accessible to all.

Our presence
We have some of the best designed publication formats. Our websites are very user friendly and enable you to do your work very easily with no hassle.

Something more...
We request you to have a look at our website to know more about us and our services.

* Terms and condition apply. Please see Edorium Journals website for more information.

We welcome you to interact with us, share with us, join us and of course publish with us.