

Ovarian Torsion Occurring Nine Days after Ipsilateral Dermoid Cystectomy

Pauline Chang, Nicholas Leyland¹, Sarah Scattolon^{1*}

Michael G. DeGroot School of Medicine, ¹Department of Obstetrics and Gynaecology, McMaster University, Hamilton, ON, Canada

Abstract

Ovarian torsion (OT) is a gynecological emergency that requires prompt treatment and management. It is associated with risk factors such as ovarian cysts and prior pelvic surgery. Diagnosis and treatment require surgery to examine the adnexa, correct the torsion, and determine if cystectomy or oophorectomy are required. We reported the case of a 34-year-old woman who presented 9 days after a dermoid cystectomy with sudden onset abdominal pain. An ultrasound showed abnormal blood flow to the ovary. She then underwent a repeat laparoscopy revealing a necrotic and twisted ovary on the same side that had a cystectomy. The surgeons proceeded with a right oophorectomy. Following surgery, the patient reported no concerns with no ongoing bleeding or pain. OT can present in the short-term postoperatively to an ovarian cystectomy, likely as a result of mechanical forces secondary to structural changes of the ovary. The role for prophylaxis against OT is unclear in those with significant risk factors for torsion.

Keywords: Cystectomy, gynecological surgery, torsion

INTRODUCTION

Ovarian torsion (OT) comprises around 2%–3% of gynecological emergencies.^[1,2] It occurs when the ovary becomes twisted around its fallopian tube, blood supply, or adjoining supportive ligaments of the pelvis, leading to lack of venous return and resulting ischemia. Commonly known risk factors include the presence of ovarian cysts and prior pelvic surgery.^[1,3] Clinical manifestations include sudden onset abdominal pain with or without nausea and vomiting.^[1] It is important to diagnose and treat OT in a timely manner to avoid permanent loss of the ovary or premature ovarian failure if the other ovary has been previously compromised. Salvage rates are low, being reported at 10%.^[1] The challenge with prompt diagnosis of OT however is the broad differential diagnosis. For example, ectopic pregnancy, pelvic inflammatory disease, appendicitis, diverticulitis, painful or ruptured cyst, and renal colic can all present in

similar ways.^[1] Confirmative diagnosis is surgical, requiring visualization of a torsed ovary; however, abnormal flow detected by Doppler ultrasound can be a useful diagnostic tool.^[3] The treatment of OT is surgical, and involves detorsion, cystectomy or oophorectomy. Here, we present a case of a patient presenting with torsion of her right ovary 9 days after surgery for the removal of a dermoid cyst on that same ovary. Her presentation was unusual in that she had previously had significant postoperative pain at 2 days which resolved, but then represented a week later with sudden pain which was revealed to be from OT. The HiREB in Hamilton Ontario Canada confirmed that this case report was exempt from review as it is simply describing an interesting case, not answering a research question, and we obtained written consent from the patient to share her information.

Article History:

Submitted: 12 June 2020

Revised: 13 July 2020

Accepted: 14 January 2021

Published: 5 November 2021

Access this article online

Quick Response Code:



Website:
www.e-gmit.com

DOI:
10.4103/GMIT.GMIT_24_20

Address for correspondence: Dr. Sarah Scattolon,

Department of Obstetrics and Gynaecology, McMaster University,
1280 Main St. West HSC 2F43, Hamilton, ON, Canada.

E-mail: sarah.scattolon@medportal.ca

This is an open access journal, and articles are distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 4.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.

For reprints contact: WKHLRPMedknow_reprints@wolterskluwer.com

How to cite this article: Chang P, Leyland N, Scattolon S. Ovarian torsion occurring nine days after ipsilateral dermoid cystectomy. *Gynecol Minim Invasive Ther* 2021;10:262-4.

CASE REPORT

The patient is a 34-year-old G5P3 woman who had gynecologic assessment for an enlarged right ovarian cyst suspected to be a dermoid, measuring 10.3 cm × 10.1 cm × 9.3 cm in size on ultrasound. Surgical management of the cyst was chosen, and workup included a negative serum beta-human chorionic gonadotropin, and her Ca-125, Ca-19, carcinoembryonic antigen, alpha-fetoprotein (AFP), and lactate dehydrogenase (LD) were all within normal boundaries. The patient had a history of a previous incomplete laparoscopic ovarian cystectomy that was stopped prematurely due to surgical complications, although records of this could not be found. She was an occasional smoker. The patient was otherwise healthy.

The patient underwent her initial operation which was a laparoscopic bilateral salpingectomy and cystectomy of a large right dermoid cyst, and a left cystectomy of a small simple cyst. Upon examination of the pelvis, a 2 cm cyst was noticed on the left ovary, and on the right ovary a 12 cm dermoid-appearing cyst was seen sitting within the cul-de-sac. The uterus, fallopian tubes, and remaining pelvis were otherwise normal in appearance. The cystectomy began on the left side, and the small cyst was excised without complication. On subsequent dissection of the right ovary away from the cyst capsule, there was rupture with intra-abdominal sebaceous spill. After this took place, another dermoid cyst could be appreciated and was excised before managing the spill. The abdomen was then copiously irrigated using approximately 25 L of normal saline, with the patient in both regular and reverse Trendelenburg positions for complete lavage of all sebaceous material. Ovarian cyst walls and both tubes were sent for pathological analysis. Proper hemostasis of the right ovary was obtained and the blood loss was minimal. The patient tolerated the procedure well, was sent stable to recovery and was discharged home the same day.

Two days later, the patient re-presented with concerns surrounding her incisions. On inspection, her laparoscopic sites were healing well, and hemostasis was noted. However, the patient was experiencing significant pain out of keeping for her postoperative course. She was passing flatus, with no nausea/vomiting or abdominal distention. A pelvic ultrasound showed an 8.0 cm × 7.0 cm × 4.7 cm complex mass-like lesion in the right adnexa, initially suspicious for hematoma within the ovary as a result of surgery. The patient was admitted overnight for pain management and monitoring. The pain resolved and the patient was discharged home the following day with a plan for outpatient follow-up and reimaging.

The patient then presented again 1 week later with worsening *de novo* right lower quadrant pain. Doppler ultrasound showed an enlarged right ovary (7.2 cm × 5.2 cm × 6.2 cm) as well as a swirling vessel sign, suggestive of OT. Upon consideration of the patient's clinical status, she was taken back to the operating room (OR) for urgent laparoscopy. Examination revealed numerous filmy adhesions between the greater omentum and rectosigmoid colon, consistent with remnants of the sebaceous material from the prior ruptured dermoid cyst. Inspection also revealed a torsed and necrotic right ovary that did not appear salvageable by detorsion. After a repeated round of irrigation for the removal of residual sebaceous material, the surgeons proceeded with a right oophorectomy. There were no complications and there was good hemostasis. Of note during this procedure was a lengthy infundibulopelvic ligament on the right side. There were no other abnormalities in the abdomen. The patient was stable throughout and after surgery, was taken to the recovery room. She was discharged on postoperative day 1, as the patient was eating and voiding well, with pain well controlled on naproxen and acetaminophen with no need for narcotics. At her postoperative follow-up, the patient reported no concerns with no ongoing bleeding or pain. Her pathology results from her first operation were reviewed, which revealed a benign mature teratoma/dermoid. She did not require any further follow-up.

DISCUSSION

Here, we present a case of ipsilateral OT occurring a week postdermoid cystectomy. We reviewed the literature and to our knowledge no other case reports demonstrate the presentation of OT as a short term postoperative complication of cystectomy.

Although the exact mechanisms by which OT develop are unclear, risk factors such as the presence of ovarian cysts as well as prior pelvic surgery are associated with its presentation.^[1] In general, it seems that the etiology is related to mechanical factors that allow for the twisting of adnexal vasculature in a way that occludes blood flow. While this patient did not have a large ovarian mass *in situ* when she developed OT, she did have ultrasonographic evidence of a mass, which may have been cystic remnants from the previously excised dermoid cyst, the residual ovarian cortex or a hematoma. The change in structure of the ovary caused by the removal of the dermoid cyst was likely a causative factor in the development of this patient's presentation. Furthermore, this patient was found to have an elongated infundibulopelvic ligament on the affected side, which may have contributed to the torsion events similar to that which can be seen in the pediatric population. The pain this patient

experienced 2 days' postcystectomy is still difficult to explain. It could have been due to intermittent torsion of the adnexa, or due to an unrelated postoperative pain issue such as the suspected hematoma. Either way, this patient's clinical course should remind clinicians to consider structural changes to the ovary postcystectomy, particularly after the removal of a large cyst which leaves behind a collection of ovarian cortex, as being a potential risk factor for rotational misalignment and subsequent torsion.

Of note is a secondary question that arose in the care of this patient, if prophylactic oophoropexy could have been of any value in preventing the torsion. Oophoropexy, which is the fixing of the ovary to the abdominal wall, uterus, or accompanying ligaments to prevent rotation, is increasingly being considered in the management of recurrent torsion, where no obvious cause can be found, or those with congenitally long ovarian ligaments.^[4] This is considered as a means of prophylaxis for future events after a first event of OT, and is often utilized in children with recurrent OT.^[5-8] There is still controversy as to the indications and techniques used due to the scarcity of research on this topic. That being said, current evidence still does not apply to our patient, as there is no research that identifies cystectomy alone as an indication for oophoropexy. It must also be kept in mind that dermoid cystectomy is quite a common gynecological procedure and prophylactic oophoropexy on all patients should not be recommended on the sole basis of preventing OT, which is a much rarer event. As well, oophoropexy may have risks of its own.^[9] Whether or not our patient could have benefitted from a contralateral oophoropexy after her right oophorectomy to prevent asynchronous bilateral OT is unknown.

Ethical review

It was determined that this case study did not require the Research Ethics Board approval as it does not meet the

definition of research, as the data was not obtained through systematic investigator or with prior research intent. The relevant REB board, HiREB in Hamilton ON, was consulted and agreed with our assessment.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient has given her consent for her images and other clinical information to be reported in the journal. The patient understands that her name and initial will not be published and due efforts will be made to conceal identity, but anonymity cannot be guaranteed.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

REFERENCES

1. Asfour V, Varma R, Menon P. Clinical risk factors for ovarian torsion. *J Obstet Gynaecol* 2015;35:721-5.
2. Lo LM, Chang SD, Horng SG, Yang TY, Lee CL, Liang CC. Laparoscopy versus laparotomy for surgical intervention of ovarian torsion. *J Obstet Gynaecol Res* 2008;34:1020-5.
3. Huang C, Hong MK, Ding DC. A review of ovary torsion. *Ci Ji Yi Xue Za Zhi* 2017;29:143-7.
4. Kives S, Gascon S, Dubuc É, Van Eyk N. No. 341-diagnosis and management of adnexal torsion in children, adolescents, and adults. *J Obstet Gynaecol Can* 2017;39:82-90.
5. Kondrup JD, Measick J. Oophoropexy: The "Hotdog in a Bun" technique. *J Minim Invasive Gynecol* 2012;19:S177-8.
6. Fuchs N, Smorgick N, Tovbin Y, Ami IB, Maymon R, Halperin R, *et al.* Oophoropexy to prevent adnexal torsion: How, when, and for whom? *J Minim Invasive Gynecol* 2010;17:205-8.
7. Raicevic M, Saxena AK. Asynchronous bilateral ovarian torsions in girls-systematic review. *World J Pediatr* 2017;13:416-20.
8. Damigos E, Johns J, Ross J. An update on the diagnosis and management of ovarian torsion. *Obstet Gynaecol* 2012;14:229-36.
9. Fee EK, Kanj RV, Hoefgen HR. Recurrent ovarian torsion in an adolescent after oophoropexy. *J Pediatr Surg Case Rep* 2016;29:196-7.