

Case report of ovarian torsion mimicking ovarian cancer as an uncommon late complication of laparoscopic supracervical hysterectomy

Michał Ciebiera, Arkadiusz Baran, Aneta Słabuszewska-Jóźwiak, Grzegorz Jakiel

I Department of Obstetrics and Gynaecology, The Centre of Postgraduate Medical Education, Warsaw, Poland

Abstract

Laparoscopic supracervical hysterectomy (LSH) is an example of a partial hysterectomy, performed due to benign gynaecological complaints. Better endoscopic instruments and operational techniques have led to a great reduction in the number of abdominal hysterectomies. It is believed that LSH is a safe and minimally invasive hysterectomy technique. The Cochrane Database meta-analysis proves the benefits of minimally invasive surgery compared with abdominal gynaecological surgery, including decreased pain, surgical-site infections and hospital stay, quicker return to activity, and fewer postoperative adhesions. According to recent publications, the overall complication rate of all hysterectomy methods is about 1-4.5%. Adnexal torsion is a correlated complication. About 3-5% of patients undergoing emergency surgery due to pelvic pain are diagnosed with this condition. It may be the cause of acute abdomen and correlated symptoms such as vomiting, nausea, or severe pain.

To the best of our knowledge a case of asymptomatic, delayed ovarian torsion mimicking ovarian tumour has not been reported so far. In the presented case, torsion successfully imitated neoplastic process as both ROMA score and IOTA 'simple rules' indicated a malignancy with high degree of probability. This case demonstrates that, if ovarian tumour is detected in the postoperative period, a torsion of ovarian pedicle should be taken into consideration as it may mimic malignant neoplasm.

Key words: laparoscopy, supracervical hysterectomy, LSH, adnexal torsion, ovarian cancer.

Introduction

Laparoscopic supracervical hysterectomy (LSH) is an example of a partial hysterectomy performed due to benign gynaecological complaints such as uterine fibroids or excessive bleeding. It is believed that LSH is a safe and minimally invasive hysterectomy technique. Adnexal torsion is one of the gynaecological conditions that might require emergency surgical intervention. It may be the cause of acute abdomen and correlated symptoms such as vomiting, nausea, or severe pain. About 3-5% of patients undergoing emergency surgery due to pelvic pain are diagnosed with this condition, especially young women in reproductive age. The differential diagnosis at an early stage is complicated, because there are no pathognomonic symptoms.

This article describes a case of a delayed adnexal torsion mimicking malignant ovarian tumour seven months after surgery.

Case report

A 46-year-old multipara was admitted to our centre due to ovarian mass detected during control check-up.

The patient reported the last menstruation at the age of 44 years. The patient had a history of laparoscopy due to multiple uterine fibroids and an ovarian cyst seven months earlier. The surgery included a laparoscopic supracervical hysterectomy with removal of adnexal structures (left adnexa and right fallopian tube). Postoperative histopathology confirmed uterine fibroids. The ovarian cyst was diagnosed as a haemorrhagic cyst. A few months later, a check-up gynaecological ultrasound scan detected a solid tumour-like lesion, 87 × 67 × 80 mm in size (Fig. 1, 2). The patient was referred to hospital due to suspicion of an ovarian tumour.

On admission, the patient complained of sporadic distention on the right side of the abdomen and the lumbar region. The patient was afebrile and without any problems with urination and defecation. The abdomen was soft on palpation and slightly tender on the right lower side. Peritoneal symptoms were negative. Circulatory parameters were normal. Speculum examination revealed smooth ectocervix and no signs of bleeding. Pelvic exam revealed a large, smooth, round change in the pouch of Douglas (approximately 9 cm in diameter). Laboratory exam results were as follows: WBC 11.02 K/ μ l; RBC 3.6 M/ μ l; HGB 12.2 g/dl; PLT 407

Corresponding author:

Michał Ciebiera, I Department of Obstetrics and Gynaecology, The Centre of Postgraduate Medical Education, Warsaw, Poland, e-mail: michal.ciebiera@gmail.com

Submitted: 27.11.2016

Accepted: 29.12.2016



Fig. 1. Ovarian tumour – scan before referral



Fig. 2. Ovarian tumour – scan before referral, different plane

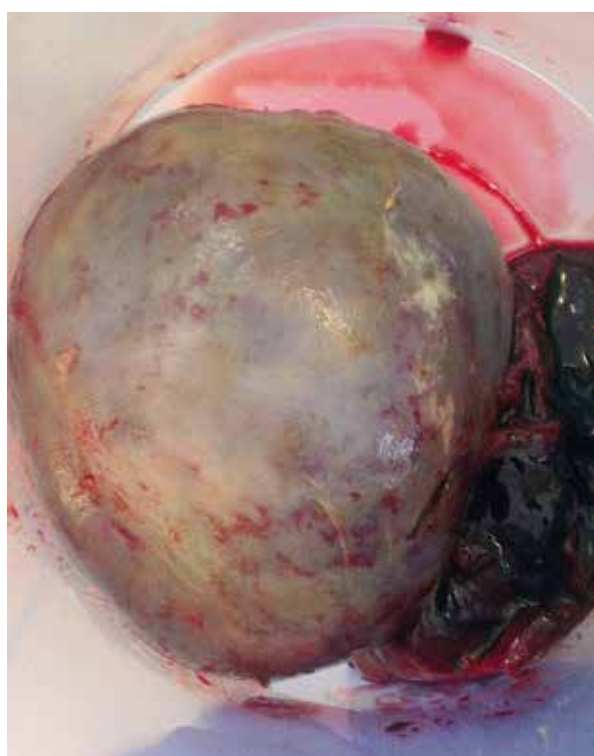


Fig. 3. Tumour after surgery

K/μl; CRP 64 mg/l; AFP 1.7 ng/ml; Ca19-9 5.2 U/ml; CEA 1.2 ng/ml; creatinine 0.8 mg/dl; D-dimers 0.9 mg/l; estradiol < 11.8 pg/ml; FSH 71.5 mIU/ml; and progesterone 0.18 ng/ml. Additionally, Ca125 and He4 markers were measured (41.1 U/ml and 83.1 pmol/l, respectively). The ROMA score was counted as 31.5%; this classified the patient in the ‘high-risk for ovarian cancer’ group. Vaginal ultrasound revealed a multi-chamber solid-cystic lesion, partially haemorrhagic, with hypoechogenic foci. Vascular flow was detected by colour Doppler. Free fluid was visualised in the pouch of Douglas. Tumour size was measured as 105 × 80 × 66 mm, which met the M4 International Ovarian Tumour Analysis (IOTA) “simple rules” malignancy criteria. The LR2

IOTA model was also used and determined the risk for malignancy to be approximately 52%. A computed tomography was performed to improve the diagnostic accuracy. It revealed a solid-cystic mass (98 × 75 × 75 mm in size) with heterogeneous enhancement after contrast administration. After detailed analysis, due to an elevated malignancy risk, the patient was qualified to surgery – laparotomy, unilateral oophorectomy (right ovary), phrenic dome smear, peritoneal lavage, and mid-surgical evaluation with the possibility of conversion to a full oncological profile (excision of the cervix, greater omentum, appendix, and lymphadenectomy). During surgery a midline incision was performed, and the material for cytological examination was collected. The right ovary proved to be a haemorrhagic cyst (10 × 8 × 8 cm in size) (Fig. 3). The contents consisted of old, organised blood clots. Notably, the ovarian pedicle was twisted twice around its axis. The lesion was freed from adhesions and excised. Mid-surgical examination confirmed the diagnosis of ovarian torsion. Cytology smears were free of cancerous cells. On the fifth post-operative day the patient was discharged from hospital in good condition. The patient reported no complaints on follow-up. Hormone replacement therapy (HRT) was administered to her.

Discussion

Laparoscopic supracervical hysterectomy is becoming a more popular technique than it was several years ago, accounting for 0.3% of all hysterectomies in 1990 to almost 12% in 2003 [1]. Better endoscopic instruments and operational techniques have led to a great reduction in the number of abdominal hysterectomies. LSH is one of the approaches recommended in patients with benign gynaecological conditions, e.g. dysfunctional and excessive uterine bleeding, uterine fibroids, or adenomyosis [2, 3]. According to the most recent French Guidelines the vaginal and laparoscopic approach are recommended for hysterectomy due

to benign disease, even if the uterus is large. Patient obesity is also not a contraindication for such methods. The choice between surgical approaches depends on the surgeon's experience, anaesthesia, and organisational factors [4]. The Cochrane Database meta-analysis proves the benefits of minimally invasive surgery compared with abdominal gynaecological surgery; these are: decreased pain, as well as decreased surgical-site infections occurrence and hospital stay, quicker return to activity, and fewer postoperative adhesions [5]. LSH is associated with a relatively small number of complications, especially if performed by an experienced endoscopic surgeon [6].

According to recent publications the overall complication rate of all hysterectomy methods is about 1-4.5% depending on the source [6-9]. In one of the recent studies intraoperative complications in the abdominal group occurred in 7.4% of cases, followed by vaginal (3.9%) and laparoscopic (3.7%) groups [8]. Other studies presented the hysterectomy conversion rate as 0.93% and the complication rate as 0.9% (mostly total laparoscopic hysterectomies) [9].

During laparoscopic supracervical hysterectomy the amputated uterine corpus must be fragmented and extracted from the abdominal cavity. This is done by power morcellation. There have been reports of the endometriosis, parasitic fibroids, adenomyomas, cervical tissue, endometrial cancer, and uterine sarcoma spread after morcellation. The major concern is the possible malignancy spread. The Food and Drug Administration (FDA) released a guideline discouraging the use of power morcellators [10]. Present studies show no complications or injuries directly related to morcellation [7, 11].

Due to many concerns about the best hysterectomy method, a multicentre study to develop a laparoscopic hysterectomy dynamic quality assessment tool has been proposed. This could serve as a new, quality indicator and may improve surgical performance. The studies are underway [12].

Current literature about ovarian cancer tumorigenesis mentions fallopian tube and endometrium as the prime foci [13, 14]. Recent studies confirmed that salpingectomy is an effective method to prevent ovarian cancer in patients presenting benign gynaecological diseases requiring surgery [15, 16].

Adnexal torsion is another kind of hysterectomy-related complication. The definition of torsion is: at least one complete twist of the adnexa around their axis, less frequently as fallopian tube twist around the pedicle, with subsequent infarction of the feeding vessels [17]. The twisted structure continues to receive blood via arteries, but outflow vessels (veins) are blocked, which leads to tissue distension and complete obstruction. Differentiation includes urinary and gastric complaints [17-20]. Adnexal or ovarian torsion presents clinically as sudden, acute pain within the lesser pelvis, common-

ly associated with nausea, vomiting, or diarrhoea; 10% of the affected women are febrile. Adnexal torsion is responsible for 3-5% of indications for emergency surgical intervention in gynaecology [18-21]. Early diagnosis is extremely important because ischaemia or necrosis can cause consumptive coagulopathy, gangrene, or peritonitis. The available literature offers no comparative studies on the risk for adnexal torsion after hysterectomy [22, 23]. To the best of our knowledge, a case of asymptomatic, delayed ovarian torsion mimicking ovarian tumour has not been reported so far.

In the presented case, ovarian torsion successfully imitated neoplastic process because both the ROMA score and IOTA 'simple rules' indicated a malignancy with high degree of probability. Similarly, the LR2 IOTA model also determined high risk for malignancy. The IOTA 'simple rules' and the LR2 IOTA model are among the best predictive models to detect malignant lesions in gynecological practice, with high effectiveness and rare error occurrences [23-25]. Colour Doppler intensity, vascular localisation, and morphological grey-scale assessment have to be considered in initial differentiating diagnostics of adnexal tumours [26]. The ROMA score (in the presented case 31.5% after menopause – high risk) is characterised by lower sensitivity and specificity as compared to advanced gynecological ultrasound testing, but it is still a useful tool for differentiating between benign and malignant tumours [25, 27]. All available diagnostic tools failed in the presented case.

Conclusions

The tumour, despite oncologic suspicion, proved to be an occurrence of uncommon ovarian torsion, seven months after surgery. It was almost asymptomatic, with atypical ultrasound presentation. After reoperation the patient recovered quickly and is free of symptoms. The question of whether the torsion was the consequence of the earlier operative method remains unanswered. Further studies are necessary because the abovementioned data merely demonstrate that, despite advances in the diagnostic and treatment modalities, postoperative complications may be extremely non-typical, making all available diagnostic methods insufficient.

The presented case demonstrates that, if an ovarian tumour is detected in the postoperative period, uncommon torsion of the ovarian pedicle should be taken into consideration because it may mimic malignant neoplasm.

Disclosure

Authors report no conflict of interest.

References

1. Wu JM, Wechter ME, Geller EJ, et al. Hysterectomy rates in the United States, 2003. *Obstet Gynecol* 2007; 110: 1091-1095.
2. Mitri M, Fanning J, Davies M, et al. Minimally Invasive Hysterectomy at a University Teaching Hospital. *JLS* 2014; 18: e2014.00231.
3. American College of Obstetricians and Gynecologists. Committee Opinion No. 444: Choosing the route of hysterectomy for benign disease. *Obstet Gynecol* 2009; 114: 1156-1158.
4. Deffieux X, Rochembeau B, Chene G, et al. Hysterectomy for benign disease: clinical practice guidelines from the French College of Obstetrics and Gynecology. *Eur J Obstet Gynecol Reprod Biol* 2016; 202: 83-91.
5. Aarts JWM, Nieboer TE, Johnson N, et al. Surgical approach to hysterectomy for benign gynaecological disease. *Cochrane Database of Systematic Reviews* 2015, Issue 8. Art. No.: CD003677.
6. Grosse-Drieling D, Schlutius JC, Altgassen C, et al. Laparoscopic supracervical hysterectomy (LASH), a retrospective study of 1,584 cases regarding intra and perioperative complications. *Arch Gynecol Obstet* 2012; 285: 1391-1396.
7. Smits RM, De Kruif JH, Van Heteren CF. Complication rate of uterine morcellation in laparoscopic supracervical hysterectomy: a retrospective cohort study. *Eur J Obstet Gynecol Reprod Biol* 2016; 199: 179-182.
8. Rahimi S, Jeppson PC, Gattoc L, et al. Comparison of Perioperative Complications by Route of Hysterectomy Performed for Benign Conditions. *Female Pelvic Med Reconstr Surg* 2016; 22: 364-368.
9. Bettaiah R, Reddy CA. Laparoscopic hysterectomies: our 10 years experience in a single laparoscopic center. *J Obstet Gynaecol India* 2016; 66: 274-281.
10. <http://www.fda.gov/MedicalDevices/Safety/AlertsandNotices/ucm424443.htm> [online 15.07.2016].
11. Park DS, Shim JY, Seong SJ, et al. Torsion of parasitic myoma in the mesentery after myomectomy. *Eur J Obstet Gynecol Reprod Biol* 2013; 169: 414-415.
12. Driessen SR, Van Zwet EW, Haazebroek P, et al. A dynamic quality assessment tool for laparoscopic hysterectomy to measure surgical outcomes. *Am J Obstet Gynecol* 2016; 215: 754.e1-754e8.
13. Kurman RJ, Shih IM. The origin and pathogenesis of epithelial ovarian cancer: a proposed unifying theory. *Am J Surg Pathol* 2010; 34: 433-443.
14. Erickson BK, Conner MG, Landen CN Jr. The role of the fallopian tube in the origin of ovarian cancer. *Am J Obstet Gynecol* 2013; 209: 409-414.
15. Kamran MW, Vaughan D, Crosby D, et al. Opportunistic and interventional salpingectomy in women at risk: a strategy for preventing pelvic serous cancer (PSC). *Eur J Obstet Gynecol Reprod Biol* 2013; 170: 251-4.
16. Committee on Gynecologic Practice. Committee opinion no. 620: Salpingectomy for ovarian cancer prevention. *Obstet Gynecol* 2015; 125: 279-281.
17. Chang HC, Bhatt S, Dogra VS. Pearls and pitfalls in diagnosis of ovarian torsion. *Radiographics* 2008; 28: 1355-1368.
18. Albayram F, Hamper UM. Ovarian and adnexal torsion: spectrum of sonographic findings with pathologic correlation. *J Ultrasound Med* 2001; 20: 1083-1089.
19. Houry D, Abbott JT. Ovarian torsion: a fifteen-year review. *Ann Emerg Med* 2001; 38: 156-159.
20. Oelsner G. Adnexal torsion. *Clin Obstet Gynecol* 2006; 49: 459-463.
21. Grabowski A, Korlacki W, Pasierbek M. Laparoscopy in elective and emergency management of ovarian pathology in children and adolescents. *Videosurgery Miniinv* 2014; 9: 164-169.
22. Mashiah R, Canis M, Jardon K, et al. Adnexal torsion after laparoscopic hysterectomy: description of seven cases. *J Am Assoc Gynecol Laparosc* 2004; 11: 336-339.
23. Timmerman D1, Amey L, Fischerova D. Simple ultrasound rules to distinguish between benign and malignant adnexal masses before surgery: prospective validation by IOTA group. *BMJ* 2010; 14: 341: c6839.
24. Peces Rama A, Llanos Llanos MC, Sánchez Ferrer ML, et al. Simple descriptors and simple rules of the International Ovarian Tumor Analysis (IOTA) Group: a prospective study of combined use for the description of adnexal masses. *Eur J Obstet Gynecol Reprod Biol* 2015; 195: 7-11.
25. Nunes N, Ambler G, Foo X, et al. Use of IOTA simple rules for diagnosis of ovarian cancer: meta-analysis. *Ultrasound Obstet Gynecol* 2014; 44: 503-514.
26. Smoleń A, Stachowicz N, Czekerowski A. Evaluating the diagnostic accuracy of ultrasonography in differential diagnosis of adnexal tumours. *Fam Med Prim Care Rev* 2016; 18: 340-344.
27. Nowak M, Janas Ł, Stachowiak G, Stetkiewicz T, Wilczyński JR. Current clinical application of serum biomarkers to detect ovarian cancer. *Menopause Rev* 2015; 14: 254-259.