

Analysis of Causes of Iatrogenic Spread of Gynecologic Malignancy and Discussions on Prevention thereof

Yajun Chen

Department of Oncology, Jingzhou Central Hospital, The Second Clinical Medical College, Yangtze University, Jingzhou, Hubei Province, 434020, China

hubeiwenbo@163.com

Abstract

It is especially important to strictly control possible iatrogenic spread of gynecologic malignancy in the process of diagnosis and treatment. This paper aims to discuss and analyze the causes of iatrogenic spread of gynecologic malignancy, and put forward preventive measures for the diagnosing phase and the treatment phase, for reference.

Keywords

Gynecologic Malignancy; Iatrogenic Spread; Cause; Preventive Measures.

1. Introduction

In recent years, the incidence rate of gynecologic malignancy became increasingly high, and it took on a trend of patients becoming younger in average age. The application of effective therapeutic strategies is of great significance to guaranteeing the life of patients with gynecologic malignancy. Due to subjective and objective factors, however, patients are likely to suffer iatrogenic tumor spread in the process of clinical diagnosis and treatment, which will affect the therapeutic effect and the prognosis effect.

2. Analysis of Causes of Iatrogenic Spread of Gynecologic Malignancy

2.1 Gynecological Examination

Excessively squeezing and pressing in bimanual gynecological examination, anal examination or vagino-recto-abdominal examination are liable to cause exfoliation of cancer cells or cancer embolus. Especially for large ovarian malignancy of which the vesicle wall is thin or fragile, excessively pressing and squeezing may cause rupture of tumor and then result in neoplasm spread [1, 2].

2.2 Diagnostic Curettage

Diagnostic curettage is a conventional diagnostic method to identify the causes of vaginal bleeding on the account of womb. Yet this method also will promote spread of cancer cells of patients with endometrial carcinoma. It is mainly because that the womb will be damaged by pressing and squeezing in the process of curettage, which causes tumor cells to immerse into myometrium, and promotes tumor cells to transfer via lymph vessel or blood vessel. The larger the impact scope is, the larger the probability of spread is [3, 4]. The patients whose cervix is so tight that their cervix needs to be enlarged for examination are vulnerable to cervix damage and tumor cell spread.

2.3 Tumor Biopsy Diagnosis

Tumor biopsy can provide an important basis for diagnosing gynecological tumor, including incisional biopsy and excisional biopsy. The probability of iatrogenic tumor spread depends on what kind of biopsy is adopted. Incisional biopsy may cause tumor cells to spread, especially in the event that the capsule of tumor is incised; excisional biopsy mainly refers to completely excising the tumor from patient, and sending it for pathologic examination [5]. The probability of tumor spread caused by this diagnostic mode is relatively low.

2.4 Inappropriate Surgical Operation

2.4.1 Malignancy operation with local anesthesia

It is inappropriate to implement local anesthesia for malignancy operation, because injecting solution around the tumor will raise the pressure and cause tumor spread. Local anesthesia is liable to cause edema of tumor tissues, and make the tumor boundary be difficult to define, so that it is difficult to accurately estimate the excision extension. Regional nerve blocking anesthesia does not count this.

2.4.2 Improper incision and squeezing tumor

If an undersized incision is made, or the incision is not made at a proper position, or the exposure is indistinct, pressing and squeezing the tumor will cause the pressure inside the tumor rise and even make the tumor break, to promote tumor spread.

2.4.3 Intraoperative transplantable spread of carbuncle

With excision of tumor, many cancer cells will fall off. Experiments and clinical data show that rough surface of wound due to surgical treatment or other trauma usually is more liable to grow tumor than normal mucosa or serous membrane. That surgical instruments, gauze and surgeon's gloves that have been polluted by cancer cells touch the surface of wound will cause transplantable spread of tumor [6].

3. Measures for Preventing Iatrogenic Spread of Gynecologic Malignancy

3.1 Preventative Measures in Diagnostic Procedure

3.1.1 Preventative Measures in Gynecological Examination

① Examiner should be gentle, and especially should not press or squeeze heavily when judging the texture of tumor or observing the correlation between tumor and tissues around it; ② The patients diagnosed to suffer from gynecological tumor should be kept from unnecessary examination as far as possible, and the patients suspected to suffer from malignancy should be kept from repeated examinations.

3.1.2 Preventative Measures in Tumor Biopsy

① It should be ensured that the normal tissues enclosing tumor are excised together with the tumor, so as to prevent the tumor capsule from breaking to a certain extent; ② The biopsy examination should be carried out immediately before the surgical treatment as far as possible.

3.1.3 Preventative Measures in Hysteroscopy

① As to hysteroscopy over a patient suspected to suffer from endometrial carcinoma, the pressure of uterus enlarging should not be too high, so as to prevent cancer cells from spreading to the pelvic cavity as far as possible; ② The time hysteroscopy should be minimized; ③ Complete curettage should be avoided; ④ Once a patient is diagnosed to have endometrial carcinoma, surgical treatment should be carried out as soon as possible.

3.2 Preventative Measures in Therapeutic Process

Operative procedures of different types of gynecologic malignancy are different, and even the operative procedures of the same type of tumor in different stages also are different. Specific operative procedures depend on the biological behaviors of the tumor, and were established based on long-term clinical researches, which cannot be changed at will due to the application of laparoscopic surgery. Arbitrarily expanding or narrowing the scope of surgery regardless of patient's condition and physical condition is not allowed, which violates the specification for gynecological operation. Arbitrarily expanding the scope of surgery may cause complications, and hurt the patient; arbitrarily narrowing the scope of surgery may cause the tumor relapse or increase, and affect prognosis of the patient. This happens in the early stage of laparoscopic surgery of gynecologic malignancy, which is an important reason why laparoscopic surgery of gynecologic malignancy is widely questioned.

Of course, specifications are just for reference, which can be adjusted properly in practical operation without affecting oncotherapy and for purpose of facilitating operation. Nevertheless, the important

operation sequence should never be changed. For example, peritoneal washes should be taken before operation, in fear of diagnosis of false negative due to intraoperative blood contamination; bilateral fallopian tubes should be interrupted first when carrying out endometrial carcinoma operation, to avoid cancer cells spreading to the abdominopelvic cavity via fallopian tubes [5]; in the case that the tumor of a patient with ovarian cancer is visible, the adnexa should be excised and bagged first, and the bag mouth should be fastened, to avoid tumor cells falling off and spreading and growing in the abdominal cavity. The basic principle that should be observed in carrying out all types of malignancy operation is tumor-free performance, which provides that separation and incision should be conducted away from the tumor tissues as far as possible to thoroughly excise the tumor and the potential invasion and metastasis surrounding it. Otherwise, if incision is carried out near the tumor or in the tumor, tumor residual or tumor cells falling off and growing may be caused [7,8,9]. Especially for early-stage gynecologic malignancy that can be cured by means of excision, the tumor-free performance principle should be more strictly observed. Non-protective forceps clip or cleavage in laparoscopic surgery may cause tumor tissues to break and fall off, excision or coagulation with ultrasonic scalpel or electrical equipment may cause tumor tissues to break and atomize. These practices set forth above all may cause tumor to spread and grow or flow with the air in the abdominal cavity and spread, which must be avoided.

4. Conclusion

To sum up, in the process of diagnosing and treating patients with gynecological tumor, physicians should observe the operation procedures, and master surgical techniques, to reduce iatrogenic spread of gynecological tumor in the diagnosis and treatment process, and improve the quality of life of tumor patients.

References

- [1] Adams S. Suboptimal cytoreduction: the confounding effects of tumor biology, *Gynecologic oncology*, Vol. 139(2015) No.3, p.389-390.
- [2] Yamaguchi M , Tashiro H , Takaishi K , Honda R , Katabuchi H. A Giant Ovaria Tumor Causing Anasaca and Dyspnea Successfully Managed after Preoperative, *Gynecologic and obstetric investigation*, Vol. 80(2015) No.3, p.211-215.
- [3] Lu KH, Ring KL .One size may not fit all: the debate of univerual testing for Lynch syndrome, *Gynecologic oncology*, Vol. 137(2015) No.1, p.2-3.
- [4] Katner HP, Buckley RL, Smith MU, Henderson AM. Endoscopic cleaning anddisinfection procedures for preventing iatrogenic spread of human immunodef lency virus, *J Fam Pract*, Vol. 27(1988) No.3, p.271-276.
- [5] Montella M, Crispo A, Serraino D, Rezza G, Franceschi S.Is the spread of HCV in Southern Italy attributable to iatrogenic transmission through unsterile injec-Tions?, *Eur J Cancer Prev*, Vol. 12(2003) No.1, p.85-86.
- [6] Kosuge DD, Davis BJ. Obturator internus pyomyositis: iatrogenic haematogenous spread, *J Pediatr Orthop B*, Vol. 22(2013) No.1, p.49-51.
- [7] Lu B, Xu J, Pan Z. Iatrogenic parasitic leiomyoma and leiomyomatosis peritonealis disseminata following uterine morcellation, *J Obstet Gynaecol Res*, Vol.42(2016)No.8, p.990-999.
- [8] Hall T, Lee SI, Boruta DM, Goodman A.Medical Device Safety and Surgical Dissemination of Unrecognized Uterine Malignancy: Morcellation in MinimallyInvasive Gynecologic Surgery, *Oncologist*, Vol. 20(2015) No.11, p.1274-1282.
- [9] Abdullah A, Seagle BL, Bautista E, et al. Vulvar metastasis of an early-stage well differentiated endometrial cancer after minimally invasive surgery, *J Minim Inva-sive Gynecol*, Vol. 21(2014) No.4, p.708-711.