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Evolution of surgical modalities and distribution of pathological types in ovarian cancer patients over five years

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ABSTRACT
In many female groups, ovarian cancer is one of the common malignant tumors of female reproductive organs, the incidence is 5% of all malignant tumors in women. According to clinical statistics, the survival rate of ovarian cancer patients within 5 years is only 25% to 39%. At present, with the continuous development of clinical medical technology, the treatment and surgical methods of clinical diagnosis of ovarian cancer are also changing. Based on the analysis of current clinical research results, it can be seen that in the current surgical treatment of ovarian cancer patients, the surgical method has gradually changed from the traditional comprehensive staging surgery to tumor cell reduction surgery, and the form of surgery has gradually changed from the initial open surgery to minimally invasive surgery. In the population of ovarian cancer patients, the main pathological type is epithelial ovarian cancer. In this study, based on the research and review of existing medical literature, the evolution of surgical methods and the distribution of pathological types of ovarian cancer patients in the past five years were reviewed, hoping that this study could provide some practical experience sharing and reference for the clinical treatment of ovarian cancer patients.

KEYWORDS
Ovarian Cancer; Evolution Of Surgical Procedures In Five Years; Distribution Of Pathological Types

Ovarian cancer is one of the common malignant tumors of female reproductive organs, its incidence accounts for about 5% of female malignant tumors, and seriously threatens the life and health of women[1]. At present, in the clinical treatment of ovarian cancer patients, the main treatment plan is surgery. However, due to the different surgical plans adopted in the clinical treatment of patients, the effect of different surgical treatment is also different, and it will also have different effects on the prognosis and survival rate of patients[2]. In recent years, with the continuous improvement of medical technology in our country and the accumulation of rich clinical experience, the surgical treatment of ovarian cancer has been further optimized and improved. Therefore, in this study, through the way of review, the evolution of surgical methods and the distribution of pathological types in ovarian cancer patients in the past five years are understood, hoping that this study can provide practical reference for the clinical treatment of ovarian cancer patients.

1 Evolution of surgical methods for ovarian cancer

In the clinical surgical treatment of ovarian cancer patients, the main operation is open surgery. However, in recent years, with the continuous improvement of medical technology, in the process of clinical treatment for ovarian cancer patients, the earliest is open surgery. With the continuous improvement of clinical medical technology, the surgical treatment plan for ovarian cancer patients has also been continuously optimized.

(1) Traditional open surgery

Traditional open surgery is the main treatment method for early ovarian cancer[3]. This type of surgery is performed through a large abdominal incision, which allows the doctor to directly observe the location and size of the tumor, allowing for complete removal. Surgery usually includes oophorectomy, hysterectomy, and pelvic lymph node dissection[4]. These procedures are intuitive and doctors can easily control the procedure to ensure the complete removal of the tumor. However, the disadvantages of traditional open surgery are also obvious. Due to the large surgical incision, patients have a longer recovery time after surgery, a strong sense of pain, and a relatively long hospital stay[5]. In addition, the surgical trauma is large, easy to lead to postoperative complications, such as infection, intestinal obstruction and so on. For early ovarian cancer patients, especially young patients, traditional open surgery may have a greater impact on their reproductive function and quality of life.

(2) Minimally invasive surgery

With the continuous progress of medical technology, minimally invasive surgery is more and more widely used in the treatment of ovarian cancer. Minimally invasive surgery is mainly carried out by laparoscopy and other instruments, with small surgical incision, small trauma to the patient's body, and fast recovery[6]. Laparoscopic surgery involves making small holes in a patient's abdomen, inserting surgical instruments and a camera, and the doctor performs the operation using the images observed by the camera. The advantages of minimally invasive surgery are obvious. First of all, because the surgical trauma is small, the patient recovers quickly after the operation, the pain is less, and the hospital stay is short. Secondly, minimally invasive surgery can reduce the occurrence of postoperative complications and improve the quality

of life of patients. In addition, for young patients, minimally invasive surgery can better preserve their reproductive function, which is of great significance for their future lives.

Minimally invasive surgery includes laparoscopic oophorectomy, laparoscopic hysterectomy and so on. These surgical methods are technically demanding and require doctors with extensive laparoscopic experience. With the continuous development and popularization of laparoscopic technology, more and more ovarian cancer patients are able to benefit from minimally invasive surgery.

(3) Comprehensive treatment

Comprehensive treatment refers to the combination of surgery, chemotherapy, radiotherapy and other treatment methods to improve the treatment effect of ovarian cancer. In recent years, with the deepening of the understanding of ovarian cancer and the enrichment of treatment methods, comprehensive therapy has been widely used in the treatment of ovarian cancer. Comprehensive treatment can make personalized treatment plan according to the specific situation of patients, improve the treatment effect and the survival rate of patients.

Neoadjuvant chemotherapy: Adjuvant chemotherapy refers to the chemotherapy treatment before surgery, which can reduce tumor volume, reduce the difficulty and risk of surgery, and improve the success rate and safety of surgery [7]. For patients with advanced ovarian cancer, adjuvant chemotherapy can also reduce tumor load, improve the effect of chemotherapy and the survival rate of patients. Postoperative adjuvant therapy: Postoperative adjuvant therapy refers to adjuvant therapy such as chemotherapy and radiotherapy after surgery, which can kill residual tumor cells, reduce the risk of recurrence and metastasis, and improve the survival rate of patients. For high-risk patients and advanced patients, postoperative adjuvant therapy is particularly important.

2 Distribution of pathological types of ovarian cancer

There are many pathologic types of ovarian cancer, including ovarian epithelial carcinoma, ovarian germ cell tumor, and ovarian sex cord stromal tumor. Different pathological types of ovarian cancer have different biological behaviors and clinical manifestations, which also have an important impact on the prognosis and treatment of patients.

(1) Ovarian epithelial cancer

Ovarian epithelial carcinoma is the most common pathological type of ovarian cancer, accounting for about 70% to 80% of ovarian cancer. This pathological type of ovarian cancer originates from the epithelial tissue on the surface of the ovary and is highly malignant and aggressive [8]. The onset age of ovarian epithelial cancer is more than 50 years old, the early symptoms are not obvious, and the late symptoms can appear abdominal distension, abdominal mass, ascites and other symptoms. The prognosis of ovarian epithelial cancer is poor, and the five-year survival rate is only 30% to 40%.

Serous cancer: Serous carcinoma is the most common pathological type of ovarian epithelial carcinoma, accounting for about 50%-70% of ovarian epithelial carcinoma [9]. This pathological type of ovarian cancer originates from serous epithelial tissue on the surface of the ovary and is highly malignant and aggressive. Serous cancer has a poor prognosis and a low five-year survival rate.

Mucinous cancer: Mucinous carcinoma is a rare pathological type of ovarian epithelial carcinoma, accounting for about 10% to 20% of ovarian epithelial carcinoma. This pathological type of ovarian cancer originates from the mucous epithelial tissue on the surface of the ovary, the degree of malignancy is relatively low, and the prognosis is good. The five-year survival rate of mucinous carcinoma is higher than that of serous carcinoma.

Endometrioid cancer: Endometrioid carcinoma is a rare pathological type of ovarian epithelial carcinoma, accounting for about 10% ~ 15% of ovarian epithelial carcinoma. This pathological type of ovarian cancer originates from the endometrioid epithelial tissue on the surface of the ovary, the degree of malignancy is low, and the prognosis is good. The five-year survival rate of endometrioid carcinoma is higher than that of serous and mucinous carcinoma.

(2) germ cell tumor of ovary

Germ cell tumors of the ovary are tumors originating from germ cells of the ovary, accounting for about 10% to 20% of ovarian cancer. This pathological type of ovarian cancer is more common in children and adolescents, the degree of malignancy is low, and the prognosis is good. Germ cell tumor of ovary includes teratoma, asexual cell tumor, yolk sac tumor and so on.

Teratoma: Teratoma is the most common pathological type of ovarian germ cell tumors, accounting for more than 95% of ovarian germ cell tumors [10]. This pathological type of tumor originates from ovarian germ cells and has a variety of tissue components, including skin, hair, teeth, etc. Most teratomas are benign, but a few are malignant. The prognosis of benign teratoma is good, while that of malignant teratoma is poor.

Asexual cell tumor: Asexual cell tumor is a rare pathological type of ovarian germ cell tumor, accounting for about 3% ~ 5% of ovarian germ cell tumor. This pathological type of tumor originates from the primordial germ cells of the ovary and has a high degree of malignancy but a relatively good prognosis. Asexual cell tumor is sensitive to radiotherapy and chemotherapy, and the treatment effect is good.

Yolk sac tumor: Vitelline cyst tumor, also known as endodermal sinus tumor, is a rare pathological type of ovarian germ cell tumor, accounting for about 1% to 3% of ovarian germ cell tumors. This pathological type of tumor originates from ovarian yolk sac cells and has a very high degree of malignancy and a poor prognosis. Yolk sac tumor is sensitive to chemotherapy, but prone to recurrence and metastasis.

(3) Ovarian sex cord stromal tumor

Ovarian sex cord stromal tumors are tumors originating from ovarian sex cord stromal cells, accounting for about 5% to 10% of ovarian cancer. This pathological type of ovarian cancer is more likely to occur in women of reproductive age, the degree of malignancy is low, and the prognosis is good. Ovarian sex cord stromal tumors include granulosa cell tumor, follicular membrane cell tumor, etc.

Granulosa cell tumor: Granulosa cell tumor is the most common pathological type of ovarian sex cord stromal tumors, accounting for more than 95% of ovarian sex cord stromal tumors. This pathological type of tumor originates from ovarian granulosa cells and has the function of secreting estrogen, which can cause menstrual disorders, endometrial hyperplasia and other symptoms. The degree of malignancy of granulosa cell tumor is low and the prognosis is good [11].

Follicular membrane cell tumor: Follicular membrane cell tumor is a rare pathological type of ovarian sex cord stromal tumor, accounting for about 5% of ovarian sex cord stromal tumors. This pathological type of tumor originated from ovarian follicular membrane cells, the degree of malignancy is low, and the prognosis is good. Most of the follicular membrane cell tumors are benign, but a few are malignant.

3 Third, the relationship between the evolution of surgical methods and the distribution of pathological types of ovarian cancer

When discussing the evolution of surgical methods for ovarian cancer, it is not difficult to find that there is a close correlation with the distribution of pathological types. Because different pathological types of ovarian cancer have significant differences in biological behavior and clinical manifestations, so for different pathological types of ovarian cancer, doctors need to take different surgical treatment, in order to achieve the best therapeutic effect.

For the pathological type of ovarian epithelial carcinoma, due to its high degree of malignancy and strong aggressiveness, comprehensive staging surgery and tumor cell reduction surgery are needed for treatment. Comprehensive staging surgery helps to accurately assess the stage of cancer, while tumor cell reduction surgery aims to remove as much tumor tissue as possible, thereby reducing the tumor load. In recent years, with the rapid development and increasing popularity of minimally invasive surgery technology, minimally invasive surgery has been widely used in the treatment of ovarian epithelial cancer. Minimally invasive surgery can not only significantly reduce surgical trauma and postoperative pain, but also effectively improve the quality of life of patients and shorten the recovery time.

Ovarian germ cell tumor and ovarian sex cord stromal tumor can be treated with fertility preserving surgery because of their lower malignant degree and better prognosis. This type of surgery is designed to preserve the patient's fertility as much as possible, which is extremely important for young patients. By choosing the surgical method to preserve fertility function, patients have the chance to have their own children in the future while successfully treating cancer, which has a positive impact on the psychological and quality of life of these patients.

Therefore, there is a close correlation between the evolution of surgical methods and the distribution of pathological types of ovarian cancer. With the continuous progress of medical technology, there may be more innovative surgical methods in the future to provide more accurate and personalized treatment for ovarian cancer patients with different pathological types.

4 Conclusion

In the past five years, the surgical method of ovarian cancer has gradually changed from traditional open surgery to minimally invasive surgery, and there are certain differences in the distribution of different pathological types of ovarian cancer. Different pathologic types of ovarian cancer need to be treated with different surgical methods. Minimally invasive surgery has a wide application prospect in the treatment of ovarian cancer, which can reduce surgical trauma and postoperative pain and improve the quality of life of patients. At the same time, comprehensive treatment is also one of the important means to improve the therapeutic effect of ovarian cancer.

To further improve the effectiveness of ovarian cancer treatment, we recommend:

Strengthen the early screening and diagnosis of ovarian cancer. Through regular physical examination and gynecological examination, timely detection and diagnosis of ovarian cancer, improve the detection rate of early ovarian cancer.

Promote minimally invasive surgical techniques. Minimally invasive surgery can reduce surgical trauma and postoperative pain and improve patients' quality of life. Therefore, the promotion and application of minimally invasive

surgical techniques should be strengthened.

Develop a personalized treatment plan. According to the specific conditions and pathological types of patients, personalized treatment plan is developed to improve the treatment effect and the survival rate of patients.

Strengthen comprehensive treatment. The combination of surgery, chemotherapy, radiotherapy and other therapeutic means can improve the therapeutic effect of ovarian cancer.

Conduct basic research on ovarian cancer. The study of the pathogenesis and biological behavior of ovarian cancer provides new ideas and methods for the prevention and treatment of ovarian cancer. In the future, with the continuous progress of medical technology and the accumulation of clinical experience, the treatment of ovarian cancer will be more perfect and diversified. At the same time, we also look forward to more basic research and clinical research to provide new breakthroughs and progress for the prevention and treatment of ovarian cancer.

About the Author

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