

MEETING ABSTRACTS

Seminar of Gynecological Oncology of the International Conference on Psychiatry and Neurorestoratology (ICPN2022)

Organizing Committee of ICPN 2022^{1,*}

¹*The International Conference on Psychiatry and Neurorestoratology (ICPN2022)*

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Abstract

The International Conference on Psychiatry and Neurorestoratology (ICPN2022) will be held in Zhengzhou in November, 2022 with the theme of psychiatry and global mental health under the current global context.

On the ICPN 2022, a seminar on gynecological oncology was held and panel reports were shared.

In recent years, the treatment of gynecological tumors has produced inspiring progress.

On the one hand, medical technology has seen tremendous advances, and medical imaging, treatment methods, and surgical plans have undergone new changes. On the other hand, the barriers of different medicine segments are breaking down. Multi-level synergistic treatment has become a popular trend. In addition, traditional Chinese medicine therapy also provides a supplement for the diagnosis and treatment of gynecological tumors.

The discussions of the seminar focused on some controversial issues of gynecological malignant tumor surgery, process management of breast cancer, imaging diagnosis of gynecological tumors, precise diagnosis and treatment of gynecological tumors, infection and nursing of gynecological malignant tumors, and in particular the traditional Chinese medicine.

These research and academic exchanges, from a multi-perspective and multidisciplinary aspect, enable researchers and clinicians to better address concerns of gynecological oncology patients. Through this conference, we look forward to receiving more discussions and solutions on the whole management model of gynecological tumor prevention and treatment from multiple perspectives, thus to promote the vigorous development of gynecological oncology.

Reviewer of the Abstracts: Dongmei Zhang

1. Analysis of influencing factors on the incidence of complications after implantation of upper arm infusion port in breast cancer patients with cluster nursing

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Objectives: Implantation of an upper arm infusion port is a common treatment for breast cancer, and complications are often associated with the surgery. Complications after implantation of upper arm infusion port in breast cancer patients include venous thrombosis, port exposure, catheter blockage, no blood in withdrawal, and local skin infection. Aiming at the above complications, this study adopts the method of cluster nursing, and analyzes the effect of this nursing method on various complications, in order to reduce the incidence of complications after implantation of upper arm infusion port in breast cancer patients.

Methods: From the same hospital, 70 breast cancer patients who had undergone upper arm infusion port implantation were randomly selected. All patients had signed the informed consent. The patients were randomly divided into two equal groups. One was treated with traditional postoperative care, and the other was treated as the experimental group. The duration of the experiment was 2 weeks, that is, 14 days. After the experiment, the specific number of complications of each type in the two groups was counted to obtain a comparative effect.

Results: After the 14-day experimental period, the number of complication cases in the two groups is shown in Table 1. It can be seen from Table 1 that there was a significant difference in the number of cases of each type of complication between the two groups, and the number of concurrent cases in the experimental group was significantly smaller than that in the control group. In addition, it can be seen that among the types of complications, no blood withdrawal is a common symptom, while other cases are relatively rare. According to the analysis of significant results, the number of cases of each symptom was significantly different between the two groups ($p <$

0.05), which was statistically significant.

Conclusion: Complications after implantation of upper arm infusion port in breast cancer patients are the issues that need to be paid attention to in postoperative care. The study used cluster nursing as the postoperative nursing method, and the results showed that compared with traditional nursing, the effect was better, and the incidence of complications was effectively reduced.

Table 1. Complications in both groups.

Symptom	Control group (N = 35)	Experience group (N = 35)	p
Venous thrombosis	5	1	<0.05
Exposed port body	5	2	<0.05
Duct blockage	4	1	<0.05
Draw back without blood	12	8	<0.05
Local skin infection	4	2	<0.05

2. A case of breast cancer with retroperitoneal liposarcoma combined with low malignant potential polycystic renal tumor of left kidney

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Objectives: The clinical features of low-grade malignant potential polycystic renal tumors are not obvious, and are easily misdiagnosed as other renal cystic diseases. Polycystic kidney tumors are mostly seen in female patients. Meanwhile, the probability of women suffering from breast cancer is increasing. The retroperitoneal liposarcoma showed occult growth, and the symptoms appeared later. For the differential diagnosis of breast cancer combined with retroperitoneal liposarcoma and low-grade malignant potential polycystic renal tumor of the left kidney, the Computed Tomography (CT) image shows cystic, muscular or fatty attenuation. It is easy to distinguish from other calcified lesions of the adrenal gland. Therefore, given the above cases, the study adopted CT-enhanced imaging combined with surgery and observed the specific clinical effects through experiments.

Methods: In this experiment, 49 patients with breast cancer and 62 patients with low-grade malignant potential polycystic kidney tumors were observed. The medical records and surgical data of the patients were collected, including gender, age, current medical history, previous history, physical examination, blood routine, liver and kidney function, electrolyte, tumor markers, adrenal-related endocrine examination, B-ultrasound, CT or Magnetic Resonance Imaging (MRI) and other imaging examinations, and preoperative preparation. See Table 1 for details.

Table 1. Patients with low malignant potential polycystic renal tumors.

Variable	Gender		Reason for visit						
	Male	Female	Abdominal pain	Low back pain	Abdominal mass	Abdominal distension	Hypertension	Accidental discovery	
N	18	44	16	15	1	2	3	25	
Percentage/%	29.03	70.97	26	24	2	3	5	40	

It can be seen from Table 1 that the diagnosis of low-grade malignant potential polycystic kidney tumors is mostly due to accidental factors, and the clinical symptoms of obvious abdominal mass are very few, with only one case. The surgical plan will compare the effects of open surgery and laparoscopic surgery.

Results: The experimental results showed that the operation time of the laparoscopic operation group was 79.67 ± 24.37 h, which was shorter than that of the open operation group (118.43 ± 37.92 h); The bleeding volume of the laparoscopic operation group was 54.44 ± 18.21 mL, which was less than that of open operation group (152.84 ± 43.65 mL); The gastrointestinal recovery time in the laparoscopic operation group was (2.0 (2.0, 2.5) days), which was not significantly different from that in the open operation group (2.0 (2.0, 3.0) days). The drainage tube removal time in the laparoscopic operation group was (5.0 (4.0, 5.0) days), which was shorter than that in the open operation group (6.0

(5.0, 7.0) days). The postoperative hospitalization days in the laparoscopic operation group (6.0 (6.0, 7.0) days), which was shorter than that in the open operation group (10.0 (9.0, 11.0) days). The experimental data show that laparoscopic surgery is superior to open surgery for patients with low-grade malignant potential polycystic kidney tumors.

Conclusion: Low-grade malignant potential polycystic kidney tumor is a rare tumor. Its clinical characteristics lack specificity, and the incidence rate of women is higher than that of men. Therefore, preoperative imaging examination is helpful to the initial diagnosis. In addition, laparoscopic surgery is superior to open surgery for patients with low-grade malignant potential polycystic kidney tumors, in terms of the operation time, bleeding volume and postoperative hospitalization days.

3. A comparative study on the curative effect of Da Vinci robotic surgery system and conventional surgery in the treatment of gynecological tumors

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Objectives: This study recorded a series of efficacy indicators of the Da Vinci robotic surgery system and conventional surgery in the treatment of gynecological tumors. Through comparative analysis, it aims to explore the application value of the Da Vinci robotic surgery system in the treatment of gynecological tumors.

Methods: A total of 174 gynecological cancer patients treated in our hospital from March 2019 to October 2021 were selected as the research subjects. The patients were divided into the benign group and the malignant group according to their condition. There were 130 cases in the benign group, of which 61 patients were treated with the Da Vinci robotic surgical system (experimental group), and 69 were treated with conventional surgery (conventional group); in the malignant group, there were 44 patients, of which 20 patients were treated with the Da Vinci robotic surgery system (experimental group), and 24 were treated with conventional surgery (conventional group). All operations in the group were completed by the same doctor. Patient-related data were recorded, including operation time, intraoperative blood loss, postoperative exhaust time, postoperative first ambulation time, postoperative pain level, postoperative complication rate and postoperative hospital stay.

Results: In the records for benign tumors, the efficacy indicators such as the amount of intraoperative blood loss, the first time to get out of bed after surgery, and the length of postoperative hospital stay in the experimental group were less than those in the conventional group, which showed significant differences ($p < 0.05$). In the records for malignant tumors, the curative effect indexes such as the intraoperative blood loss, the first time to get out of bed, the postoperative hospital stays, the operation time, and the degree of pain in the experimental group were better than those in the conventional group, and there was a significant difference ($p < 0.05$). The efficacy index data of each group are shown in Table 1.

Conclusion: Among the recorded efficacy indicators, the Da Vinci robotic surgery system is generally better than the conventional surgical methods. The application of the Da Vinci robotic surgery system for treatment can significantly improve the surgical effect and postoperative recovery of patients with gynecological tumors.

Acknowledgment: The research is supported by: Study on injury mechanism of mechanical dormancy breaking of grass seed in alpine pasture and technology of low-injury dormancy breaking (51665001, 2017–2020); Study on mechanism of physicochemical coupling dormancy-breaking damage and methods of inhibiting-damage of typical forest-grass seeds in Qilian Mountains (51965002, 2019–2022).

Table 1. The index values of each group in the treatment of gynecological tumor.

Index	Benign		Malignant	
	Experimental	Routine	Experimental	Routine
Blooding/mL	121.25	132.46	221.31	293.49
Out of bed/d	1.25	1.61	1.73	1.91
Hospital stay/d	5.56	6.65	9.47	12.12
Operation time/min	97.57	107.23	171.47	189.23
Complication/%	10.2	12.1	20.2	22.1
Exhaust time/d	1.64	1.73	2.43	2.44
Pain level	1.46	1.57	2.37	3.24

4. Intervention effect of vitamin D intake and serum 25(OH)D level on ovarian cancer risk

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Objectives: Ovarian cancer is one of the common gynecological malignancies with a high mortality rate. In this study, the intervention effect of vitamin D intake and serum 25 hydroxyvitamin D (25(OH)D) level on ovarian risk was compared and analyzed experimentally, providing a new direction for future clinical methods of ovarian cancer treatment.

Methods: The study selected 60 immunodeficient nude mice, 6–7 weeks old. Nude mice were adaptively reared for 5 days before the experiment, and then subcutaneously inoculated with 4×10^5 fluorescently labeled ovarian cancer cells. They were divided into positive control group, negative control group and blank control group by staining markers. The nude mice in the positive control group received vitamin D intake, and those in the negative control group received the solvent control treatment. Other experimental conditions were the same. Nude mice were observed regularly after inoculation with the proliferation rate and migration rate of cancer cells, the survival time of nude mice and the changes in 25(OH)D levels recorded.

Results: The experimental results showed that the cancer cell proliferation rate of nude mice in the positive control group decreased by -12.34% , and the cancer cells in the other control groups all increased by about 90% , with a statistically significant difference ($p < 0.01$). The cancer cell migration rate of nude mice in the positive control group was 11.89% , and the survival time was longer, with an average of 67.34 days, which was significantly different from other groups ($p < 0.01$). As the number of cancer cells increased, the serum 25(OH)D content also increased. The specific index changes are shown in Table 1.

Conclusion: It can be seen from the experiment that after the intervention of vitamin D intake, the proliferation rate of ovarian cancer cells decreased, the migration rate was lower, the survival time of nude mice was longer, and the level of serum 25(OH)D decreased. Vitamin D intake has a good effect on the risk intervention of ovarian cancer cells.

Table 1. The results of changes in various indicators under the intervention.

Indicators	Positive control group		Negative control group		Blank control group	
	Before	After	Before	After	Before	After
Proliferation rate	4×10^5	-12.34%	4×10^5	89.39%	4×10^5	93.87%
Migration rate	4×10^5	11.89%	4×10^5	45.53%	4×10^5	49.12%
Mice survival time	4×10^5	67.34 d	4×10^5	45.76 d	4×10^5	47.21 d
25(OH)D level change (ng/mL)	41.23 ± 6.23	35.12 ± 6.67	43.51 ± 5.78	49.21 ± 6.12	42.56 ± 6.12	47.11 ± 6.44

Note:25(OH)D is the abbreviation of 25 hydroxyvitamin D.

5. Clinical study of VBA-based diffusion kurtosis imaging technique on cognitive dysfunction of breast cancer patients undergoing chemotherapy

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Objectives: Breast cancer has developed into one of the most common cancers in women, accounting for about 12% of new cancer patients. In this study, Diffusion Kurtosis Imaging (DKI) technology based on Voxel-Based Analysis (VBA) was used to analyze its effect on the whole brain microstructure of breast cancer patients and on the correlation between the whole brain microstructure and cognitive dysfunction, so as to provide a scientific basis for the early diagnosis and prevention of cognitive impairment.

Methods: From May 2021 to January 2022, 46 patients diagnosed with breast cancer in the oncology department of our hospital were selected as the observation group, and the people with normal physical examinations were selected as the control group. All subjects were required to compare Radial Kurtosis (RK), Axial Kurtosis (AK), Mean Kurtosis (MK) parameter maps, and the Montreal Cognitive Assessment Scale (MoCA), Connection Test A(CT-A), Trail Making Test

A (ATMT-A), Auditory Word Learning Delay Test (AVLT), Clock Drawing Test (CDT), and four neuropsychological cognitive measures surface. At the same time, the correlation between parameter values and neuropsychological test scores was analyzed by means of Pearson's bivariate correlation analysis.

Results: There were statistically significant differences in MoCA scores, Auditory Word Learning Delay 5min (AVLT2), Clock Drawing Test (CDT) scores and DKI parameter values (MK, RK) in breast cancer patients before and after chemotherapy. Correlation analysis showed that the MK value of the right posterior cingulate gyrus after chemotherapy was positively correlated with the AVLT2 results ($r = 0.548, p = 0.007$); the RK value of the corpus callosum after chemotherapy was positively correlated with the results of MoCA ($r = 0.654, p = 0.001$). Fig. 1 refers to the correlation results of AVLT2 and MK.

Conclusion: As one of the common treatments for breast cancer, although chemotherapy can significantly reduce the recurrence rate of cancer, it will lead to many adverse reactions such as cognitive impairment. Breast cancer patients will have brain microstructure damage after chemotherapy, which is accompanied by cognitive function damage. The parameter value has a certain value in predicting the diagnosis and evaluation of cognitive dysfunction.

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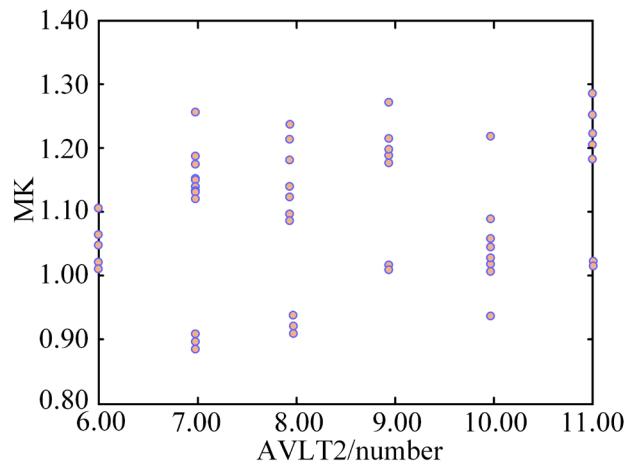


Fig. 1. Correlation results of AVLT2 and MK. AVLT: Auditory Word Learning Delay Test; MK: Mean Kurtosis.

6. Analysis of the application effect of imaging technology in the diagnosis of gynecological tumors

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Objectives: Gynecological tumors are more obvious in clinical manifestations, usually observed as abdominal mass and vaginal bleeding. At present, with the change in people's diet, the incidence rate of gynecological tumors in women is increasing year by year. Malignant gynecological tumors are an important cause of disability and even death of middle-aged and old women. Generally speaking, early detection of benign and malignant tumors can effectively improve the efficacy of patients and reduce their disability. The current X-ray diagnostic technology is characterized by a poor diagnostic detection rate and easy-to-miss diagnosis. In view of the above conditions, color Doppler ultrasound was used for diagnosis. Experienced physicians observed and evaluated the images to analyze the diagnostic effect.

Methods: In this experiment, 100 patients with gynecological tumors were observed, and the diagnostic effect of color doppler ultrasound was observed by comparing the ultrasonic examination results of patients with pathological examination results. Among the 100 patients with gynecologic tumors, 51 were benign tumors and 36 were malignant tumors. Later pathological examination showed that 55 patients with benign tumors were benign lesions and 40 patients with malignant tumors were malignant lesions. The specific comparison results and the morphological characteristics of gynecologic tumors detected by color doppler ultrasound are shown in Table 1.

Table 1. Comparison of color doppler ultrasound and routine pathology.

	Ultrasound group		Pathological group	<i>p</i>	χ^2
Specificity	92.31%		100.00%	1.000	0.000
Accuracy	92.00%		100.00%	0.024	5.128
Sensitivity	91.95%		100.00%	0.024	5.128
-	Benign tumor	Malignant tumor			
Number of cases	51	36			
Envelope	48 (94.12%)	18 (50.00%)			
Cystic	36 (70.59%)	10 (19.61%)			
Substantiality	18 (35.29%)	16 (31.37%)			
Cystic and solid	20 (39.22%)	12 (23.53%)			

It can be seen from Table 1 that the gynecologic tumors detected by color Doppler ultrasound extremely matched with the pathological examination, and the morphological detection of malignant tumors was relatively clear, with an accuracy rate of 92%. Therefore, the reliability of gynecological tumor examination was high.

Results: The experimental results showed that the detection rate of color Doppler ultrasound was 55%, the capsule rate of benign tumors was 94.12%, and the solid rate was 35.29%. The solid rate of malignant tumors was 31.37%, and the solid and cystic rate was 23.23%. Meanwhile, the sensitivity, specificity and accuracy of color Doppler ultrasound were 91.95%, 92.31% and 92% respectively. The experimental data showed that there was no significant difference between the color Doppler ultrasound group and the case group, indicating that the results of the two groups were basically consistent.

Conclusions: Gynecological tumor is a common disease in clinics, which can be divided into benign tumor and malignant tumor. The gynecological tumor is not only complicated but also expensive through surgical treatment. Color Doppler ultrasound is widely used in the diagnosis of gynecological tumor because of its simple operation and low price. At the same time, it also has high diagnostic accuracy in the actual operation process.

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7. Construction of diagnosis and treatment knowledge model of the gynecological tumor with blood stasis syndrome based on traditional Chinese medicine thinking

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Objectives: Blood stasis syndrome is caused by internal obstruction of blood stasis, mainly pain, mass, bleeding, blood stasis and other symptoms. Women's unique physiological activities have long been dependent on blood nourishment. In addition, gynecological tumors belong to the category of “sticking mass” in traditional Chinese medicine, and blood stasis syndrome is important pathogenesis of their occurrence. The current gynecological tumor blood stasis syndrome based on the combination of traditional Chinese and western medicine does not reflect the thinking of traditional Chinese medicine. At the same time, the medical diagnosis system of artificial intelligence also relies too much on big data. In view of the current situation of the intelligent diagnosis and treatment system of blood stasis syndrome of gynecological tumors based on the combination of traditional Chinese and western medicine, a new diagnosis and treatment knowledge model was built to achieve intelligent prescription medication by taking the blood stasis syndrome of gynecological tumors as the bridge.

Methods: 37 symptoms of 1068 patients with blood stasis syndrome of gynecological tumors were grouped into 3 categories by clustering method, so as to determine the 6 syndrome elements of blood stasis syndrome of gynecological tumors. At the same time, factors such as the cause of disease, the period of illness, and weather changes should be fully considered to determine the irrelevant symptoms between the syndrome elements and other diseases. The order of syndrome elements should be obtained by weighting, and the main syndrome (or side syndrome) corresponding to each disease type should be determined. The addition and subtraction of prescriptions should be calculated according to the corresponding relationship of “theory law prescription medicine”. Other unrelated manifestations of the patient were considered “concurrent symptoms”. The model dynamically adjusted the weight of different syndrome factors and the importance of concurrent symptoms to achieve the purpose of clinical application. Its model structure is shown in Fig. 1.

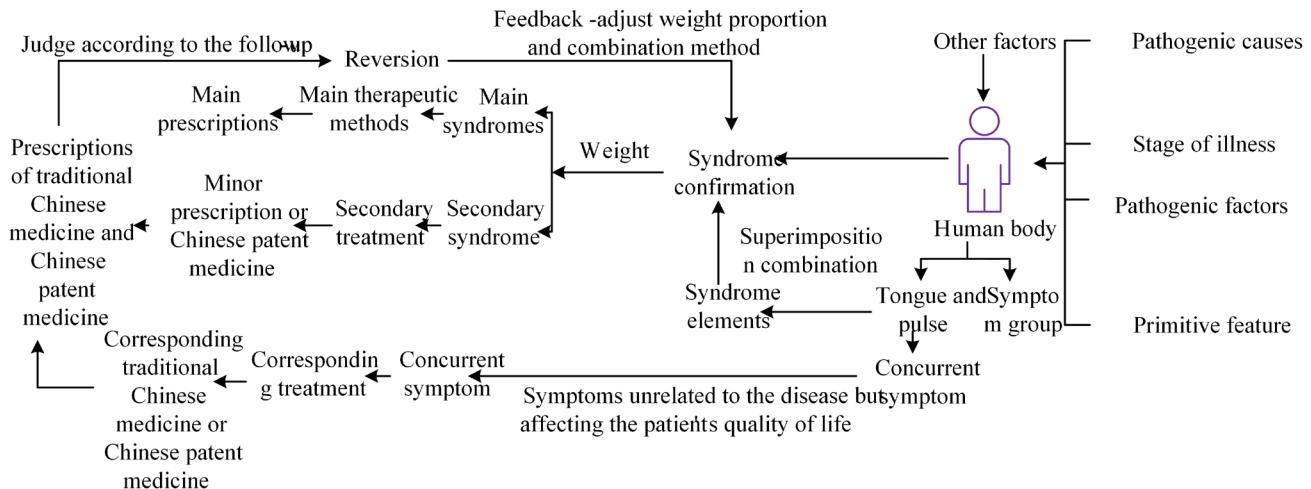


Fig. 1. Knowledge model structure of diagnosis and treatment of gynecological tumor with blood stasis syndrome based on TCM thinking.

It can be seen from Fig. 1 that the diagnosis and treatment knowledge model was constructed according to the thinking of traditional Chinese medicine and strictly followed the diagnosis and treatment process of traditional Chinese medicine. At the same time, it deeply considered the symptomatic elements of blood stasis syndrome of gynecological tumors and treated them according to the prescriptions of traditional Chinese medicine, so as to achieve the right treatment.

Results: In practical application, the diagnosis and treatment model of gynecological tumor blood stasis syndrome knowledge were built on the basis of traditional Chinese medicine thinking. Factor analysis was used to study its 37 symptoms attacking 6 syndrome elements, accounting for 80% of the weight of gynecological tumor blood stasis syndrome, which is of great significance for diagnosis. The results show that the dialectical thinking of traditional Chinese medicine fully considers many factors, and treats patients by observing symptoms simultaneously. At the same time, it can realize the outcome according to the actual situation of patients, save the patients' treatment time to the maximum extent, and can systematically record the patients' conditions, dynamically describe the syndrome and treatment rules of blood stasis syndrome of gynecological tumors, with high diagnostic accuracy.

Conclusions: The development of Traditional Chinese Medicine (TCM) intelligence will certainly experience the transformation from a knowledge learning mode driven by excessive reliance on big data to an independent intelligence. During this period, it is necessary to take TCM thinking as the knowledge, combine symptoms, and strictly follow the diagnostic sequence of "disease syndrome element symptom". In this way, gynecological tumors with blood stasis syndrome can be treated case by case. It can also ensure the accuracy of diagnosis of diseases and syndromes, and achieve intelligent prescription medication.

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8. Research on image guided path planning for gynecologic tumor thermal ablation

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Objectives: Gynecological tumor is one of the major diseases endangering women's life and health. Thermal ablation is a widely used minimally invasive method in tumor treatment. The current clinical hot ablation surgery path planning mainly depends on the surgical experience and professional skills of doctors. Unreasonable surgical planning will lead to aggravation of the disease and many complications. It is necessary to study the use of Computed Tomography (CT) image guidance technology and to design an automatic planning of thermal ablation surgery path for gynecological tumors to improve the success rate of surgery.

Methods: The study selected 100 patients with gynecological tumors admitted to a hospital from 2018 to 2020. The traditional surgical path planning mode was used. The automatic surgical path planning method was improved for surgical intervention. The effectiveness of the method was evaluated using the accuracy of path planning, patient

treatment effect and other dimensions. Follow up ultrasound was used to check the improvement of the tumor.

Results: From the evaluation of the accuracy of surgical path planning and the postoperative examination of patients with gynecological tumors, the thermal ablation operation with automatic planning of surgical path can improve the success rate of surgery, and the cure rate and postoperative recovery of patients were significantly better than those of the control group, with a statistically significant difference. (See Table 1).

Conclusion: The research results show that the use of image-based guided thermal ablation surgery path planning technology can improve the success rate of gynecological tumor surgery, and the cure rate and timely recovery of patients were also better than traditional thermal ablation surgery. Therefore, the application of this method in gynecological tumor surgery has an important application value.

Table 1. Postoperative recovery of patients with gynecological tumors.

Group	Cure rate	Improvement rate
Experience group	68%	83%
Control group	53%	62%
<i>p</i>	<0.05	<0.05

9. Clinical Effect of Wenyang Tongyu Decoction on Hypercoagulability of Gynecological Tumor in Literature Professionals

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Objectives: Hypercoagulability is an abnormal blood system state caused by multiple factors, such as vascular endothelial cell damage, abnormal increase of coagulation factors and platelets. After increasing the blood coagulation of the body, it is easy to form a thrombus and pose a serious threat to the life safety of patients with gynecological malignant tumors. In order to provide literature practitioners with early intervention on the hypercoagulable state of gynecological tumors, Wenyang Tongyu Decoction was used to relieve the hypercoagulable state of gynecological tumor patients.

Methods: From 2017 to 2020, 70 patients with gynecological tumors admitted to our hospital were divided into an experimental group and a control group. The experimental group was treated with Wenyang Tongyu Decoction combined with conventional anticoagulation therapy. The control group was treated with conventional anticoagulation therapy, with one dose a day for 21 days. Platelet, fibrinogen, D-dimer and blood stasis score were used as therapeutic evaluation indicators.

Results: From the comparison of the two groups of patients, it was found that there was no statistically significant difference in various indicators between the two groups before treatment. After treatment, the indexes decreased significantly, and the difference was statistically significant. (See Table 1).

Conclusion: The research results show that Wenyang Tongyu Decoction has an obvious effect on the treatment of gynecological tumors of literature practitioners in the hypercoagulable state, which can effectively improve the blood stasis of patients and improve the quality of life of patients.

Table 1. Comparison of various indicators between the two groups.

Group	Time	PLT/ $\times 10^9 \cdot L^{-1}$	D-D/ug·L $^{-1}$	FIB/g·L $^{-1}$
Control group	Before treatment	248.6 ± 89.5	3.9 ± 2.8	5.4 ± 0.8
	After treatment	211.3 ± 95.2 [*]	2.7 ± 2.6 [*]	3.6 ± 1.2 [*]
Experience group	Before treatment	246.4 ± 90.7	4.0 ± 3.1	5.2 ± 1.0
	After treatment	193.9 ± 83.9 ^{*D}	2.4 ± 2.7 ^{*D}	3.4 ± 1.1 ^{*D}

Note: * represents the comparison between the same group before and after treatment: ^{*} $p < 0.05$; ^D means comparison between groups after treatment: ^D $p < 0.05$

10. Clinical treatment of human local uterine fibroids based on the work intensity of transportation personnel using focused ultrasound

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Objectives: To evaluate the intervention effect of traffic motion and focused ultrasound High Intensity Focused Ultrasound (HIFU) on patients with uterine fibroids mainly by intra-voxel incoherent motion diffusion-weighted imaging (IVIM-DWI). By comparing the data before and after the experiment, the patient parameter values were obtained, and the efficacy of the intervention program was evaluated.

Methods: A total of 60 female patients diagnosed with uterine fibroids and engaged in transportation for a long time between May 2019 and May 2020 in our hospital were retrospectively analyzed. The age distribution was between 36–51, with an average age of 42. 60 people were engaged in the transportation industry. They adopted the transportation exercise conditioning plan recommended by the doctor to reduce exercise intensity, and jointly participate in the treatment of uterine fibroids with focused ultrasound technology. IVIM-DWI imaging technology was used to evaluate the health status of patients before and 1 day after the operation. SPSS19.0 software was used for statistical analysis of data in the experiment and paired *t*-test was used to analyze the ablation foci and adjacent tissues D and D' of the ablation foci before and after treatment.

Results: Before the experiment, Contrast-enhanced MRI (CE-MRI) scans of 60 patients with uterine fibroids engaged in transportation were performed, and the lesions of 60 patients were all realized as a heterogeneous enhancement. CE-MRI scans were performed on the two groups of patients after the operation. In the two groups, the ablation area showed a low signal and non-perfusion area without enhancement, while the adjacent tissue of the ablation area showed irregular edge enhancement. The postoperative condition of the patients was evaluated by IVIM-DWI. The boundary between adjacent tissues and ablation lesions was unclear in the IVIM-DWI parameter map, and there were obvious tissue boundaries between adjacent tissues and ablation lesions in the IVIM-DWI images of f and D'. Before and after the experiment, there was a significant difference between the patient's uterine fibroids and the ablation foci ($p < 0.05$), and the data before and after the experiment had significant statistical differences, as shown in Table 1.

Conclusion: HIFU is a high-efficiency tumor treatment technology in the medical field. The principle is to use ultrasonic aggregation to interfere with tumor tissue, increase the temperature of the tumor tissue area in a relatively short time, and cause damage to the tumor tissue to treat corresponding tumor diseases. Considering the long-term high-load exercise of patients with uterine fibroids in transportation, it is recommended to moderately adjust the amount of exercise according to the doctor's advice, combining with HIFU treatment for uterine fibroids, to achieve obvious effects.

Table 1. Comparative analysis between uterine leiomyoma and ablation focus before and after the experiment.

Value type	Value of ablation focus	Value of corresponding tumor before operation	<i>t</i>	<i>p</i>
D value ($\times 10^{-3}\text{mm}^2/\text{s}$)	1.34 ± 0.42	0.69 ± 0.12	5.76	0.00
D' value ($\times 10^{-3}\text{mm}^2/\text{s}$)	3.21 ± 0.62	18.65 ± 1.95	29.22	0.00
F value/%	9.45 ± 0.72	21.65 ± 1.12	35.48	0.00

11. Analysis of the effect of ionizing radiation on ovarian cancer in NC machining environment

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Objectives: Ovarian cancer is one of the malignant tumors in gynecological tumors, and its mortality is very high. The common treatment means are mainly surgical treatment, while there are many auxiliary means, such as chemotherapy,

radiotherapy, etc. In the Numerical Control (NC) processing environment, mineral dust, metal smoke and other substances will be produced, which will cause certain harm to human body. When tungsten electrodes are used, X-rays will be produced, resulting in ionizing radiation hazards. In relevant studies, it was pointed out that ionizing radiation could inhibit the expression of multidrug resistance genes in tumor cells and reverse drug resistance. However, radiotherapy can induce tumor cells to develop drug resistance. Radiotherapy has dual effects on multidrug resistance genes, and autophagy can participate in the regulation of multidrug resistance genes. Therefore, to study the effect of ionizing radiation on autophagic death of drug-resistant ovarian cancer cells, and to explore the differences between different ionizing radiation modes.

Methods: In this study, the drug resistant human ovarian cancer cell SKVCR was obtained by increasing the dose of vincristine after cell culture. It was digested and subcultured in α -MEM medium. During the study, cells in logarithmic growth period were selected. During the study, the selected drug resistant cell SKVCR atmosphere was divided into three groups: sham irradiation group, fractionated irradiation group and single irradiation group. The three groups received drug intervention through VePesid (VP)-16 and Cis Dichlorodiammonium Platinum (II) (DDP) of different concentrations, while the control group was cultured normally without drug intervention. The corresponding ionizing radiation mode is adopted according to different groups, and the drug sensitivity of cells is detected by 3-(4,5-Dimethylthiazol-2-yl)-2,5-diphenyltetrazolium bromide (MTT) method. The drug action time is 48 h.

Results: After different irradiation methods and different drug interventions, the cell survival rates of different groups are shown in Fig. 1.

In Fig. 1, after different irradiation methods and different drug interventions, the cell survival rates of different groups are different. In general, under VP-16 drug intervention, the survival rate of the fractionated irradiation group decreased more significantly ($p < 0.05$). While the survival rate of the sham irradiation group was the highest at low concentrations. However, under the intervention of DDP drugs, the cell survival rates of the three groups were similar ($p > 0.05$).

Conclusions: Ovarian cancer is the most lethal gynecologic tumor, endangering women's health. Promoting the autophagic death of drug-resistant cells in ovarian cancer is helpful for the treatment of ovarian cancer. The ionizing radiation generated in the NC processing environment can improve the autophagic ability of cells and reduce the survival rate of drug-resistant cells.

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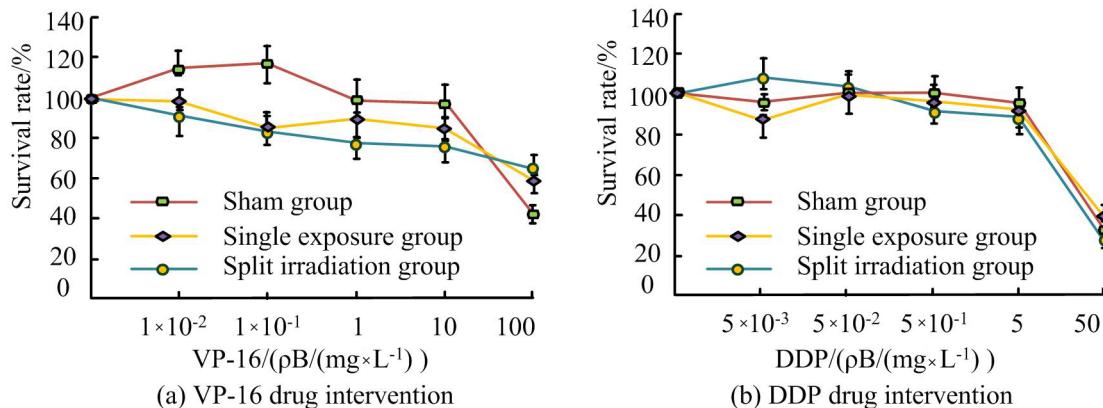


Fig. 1. Cell survival rate of different groups. VP-16: VePesid-16, DDP: Cis Dichlorodiammonium Platinum (II).

12. Study on clinical dispensing rules of TCM prescriptions for ovarian cancer based on data mining technology

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Objectives: As ovarian cancer usually does not show obvious symptoms and the medical means for its early screening are still in the development stage, many patients when receiving the examination report are already in advanced cancer. At the same time, the current treatment for ovarian cancer is mainly through western medicine combined chemotherapy and maintenance therapy. Although this method has significant effects in the early stage of treatment, due to the multiple recurrence characteristics of ovarian cancer, after the chemotherapy sensitivity of patients is reduced, the cost performance of continuing to use western medicine is not high. Therefore, how to apply traditional

Chinese medicine to the treatment of ovarian cancer patients has become a major research focus. This study aims to analyze the regularity of a professor of traditional Chinese medicine's prescription for ovarian cancer through data mining technology, so as to provide clinical suggestions for the treatment of ovarian cancer with traditional Chinese medicine.

Methods: The source of the prescription was selected from the electronic medical record data and prescription drug data of ovarian cancer patients treated by an outpatient professor of a Chinese medicine college in the past three years. The data of patients with incomplete prescription records and other malignant tumor patients were excluded during data screening, thus avoiding the introduction of interference factors. According to the statistics, the number of patients considered in this study is 42, the total number of visits is 195, the average age is 52.74 years old, the average number of visits is 4.6, and the total number of Chinese medicine prescriptions is 194. All data were entered into Excel 2018 to form a prescription database, and classified statistics were made from the following aspects, including the frequency of drug use, four qi and five flavors, meridian tropism and drug efficacy. Among them, the frequency of drug use is arranged in a descending order, and those who use drug more than 70% are regarded as high-frequency drugs. In addition, the properties of drugs are merged into three categories of cold, warm and hot, and the tastes of drugs are merged into three categories of sweet, bitter and salty. Data mining technology is adopted to reflect the correlation between drugs, and SPSS18.0 is used for cluster analysis.

Results: Fig. 1 shows the results of high frequency and medium frequency drugs used in the treatment of ovarian cancer. It can be seen from Fig. 1 that there are a total of 19 kinds of high-frequency drugs, in a descending order: astragalus membranaceus and trifoliate orange (194 frequency), bupleurum chinense (191 frequency), white peony (190 frequency), dried tangerine peel (187 frequency), angelica sinensis, divine koji, hawthorn and malt (186 frequency), coix seed (182 frequency), pseudostellaria heterophylla (172 frequency), licorice root (169 frequency), smilax glabra (159 frequency), atractylodes macrocephala (125 frequency), zedoary rhizome (108 frequency), turmeric (100 frequency), cinnamon (98 frequencies), Chinese wolfberry (93 frequencies), and nutmeg (81 frequencies).

Conclusion: Traditional Chinese medicine has an obvious effect on relieving adverse reactions of western medicine chemotherapy. Therefore, the study analyzed the drug prescription law of a professor of traditional Chinese medicine through data mining techniques such as clustering analysis, and finally obtained the high-frequency drug clustering results used in the treatment of ovarian cancer.

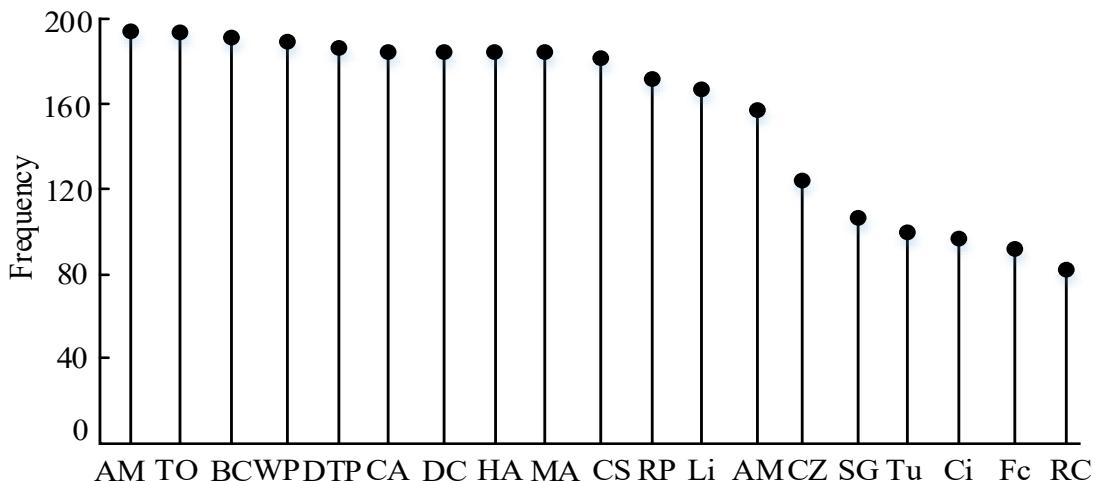


Fig. 1. Clustering results of high frequency and medium drug in treatment prescriptions for ovarian cancer.
 AM: astragalus membranaceus; TO: trifoliate orange; BC: bupleurum chinense; WP: white peony; DTP: dried tangerine peel; CA: angelica sinensis; DC: divine koji; HA: hawthorn and malt; CS: coix seed; RP: pseudostellaria heterophylla; Li: licorice root; AM: smilax glabra; CZ: atractylodes macrocephala; SG: zedoary rhizome; Tu: turmeric; Ci: cinnamon; Fc: Chinese wolfberry; RC: nutmeg.

13. Diagnosis of cervical cancer by ultrasound graduates using intelligent three-dimensional imaging

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Objective: The focus of cervical cancer is a relatively complex three-dimensional shape, and it is difficult to diagnose

cervical cancer through gynecological examination and two-dimensional measurement with good application effect. The research enables medical graduates majoring in ultrasound to use vaginal color Doppler ultrasound and three-dimensional energy Doppler ultrasound to diagnose and analyze the condition of cervical cancer patients, so as to provide reference for the follow-up treatment intervention.

Methods: By selecting 60 patients with cervical cancer and 30 women who were clinically diagnosed as healthy in a hospital, the patients with cervical cancer were randomly divided into experimental group 1 and experimental group 2, and the healthy patients were the control group. In experimental group 1, the GE730 (GEVoluson730Expert) three-dimensional Doppler ultrasound diagnostic instrument was used for vaginal ultrasound examination. The preset values of the diagnostic instrument were: pulse repetition rate 0.9 kHz, volume angle 90 degrees, wall filter Low 1, pulse transmission frequency mid, and line density 8. The three-dimensional presetting was carried out with high quality and sampling angle 90 degrees. Experiment group 2 uses the same ultrasonic instrument for diagnosis. What is different from experiment group 1 is that experiment group 2 carries out two-dimensional presetting, specifically, gray scale 0, medium frequency, medium quality, dynamic range 7, residual gray 2, edge enhancement 2, and suppression 15. During the experiment, the blood flow index, angiogenesis index, angiogenesis blood flow index, tumor size and other indicators of the patients were examined. In the course of the experiment, the difference analysis of the experimental data was carried out with the help of statistical difference analysis to compare variables through *t* test or Fisher exact test, and compare the differences between groups under the two test methods.

Results: The peak systolic flow rate and end diastolic flow rate in the transvaginal color Doppler ultrasound group were higher than those in the experimental group 1 and the control group, and the resistance index was lower than those in the other two groups, with significant statistical significance ($p < 0.05$). In the experimental group 1 using three-dimensional ultrasound, it was found that the tumor size was linearly negatively correlated with the resistance index, and its angiogenesis index the blood flow index and angiogenesis blood flow index were higher than those in the control group ($p < 0.05$). The area of Receiver Operator Characteristic (ROC) curve of blood flow index value in experimental group 1 and the diagnostic effectiveness of cervical cancer in experimental group 2 were greater than those in experimental group 2 (area under ROC curve $0.906 > 0.789$, sensitivity $75.1\% > 72.6\%$, specificity $100.0\% > 75.0\%$). Three-dimensional ultrasound diagnosis has a good application effect. Fig. 1 shows the ultrasonic ROC curve results of experimental group 1 and experimental group 2.

Conclusion: The diagnosis and treatment of early cervical cancer by vaginal three-dimensional Doppler ultrasound can effectively provide a new method for blood flow detection, and its diagnostic effect is significantly higher than that of two-dimensional ultrasound, with high specificity and sensitivity. Therefore, in the future diagnosis and intervention of cervical cancer, we should actively play the advantages of three-dimensional ultrasound imaging detection, and we can also consider joint detection to improve the accuracy of diagnosis.

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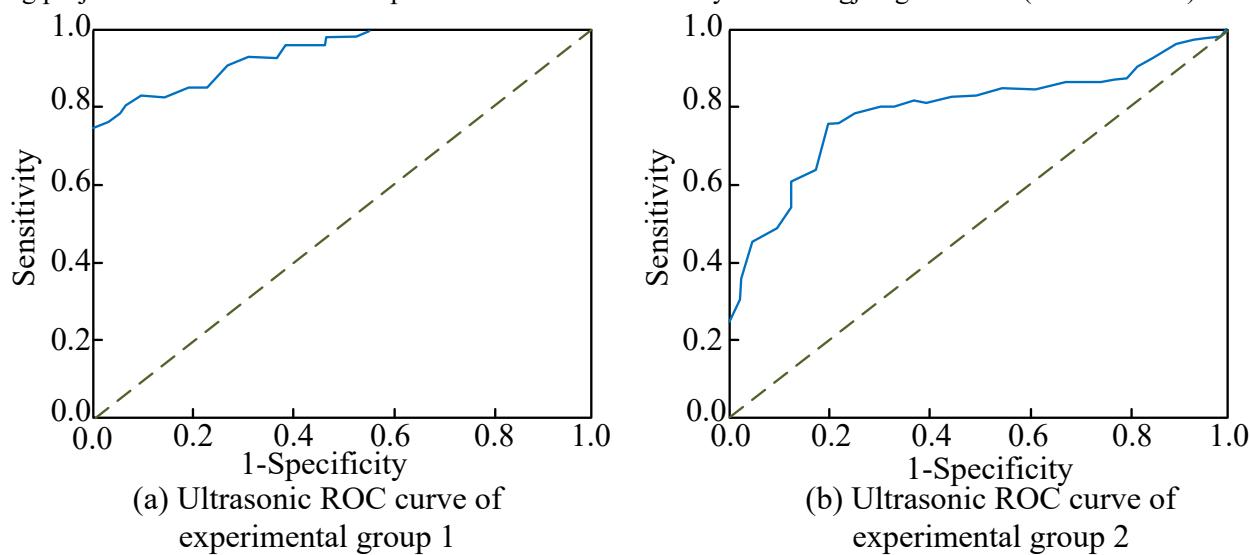


Fig. 1. Results of ultrasonic ROC (Receiver Operator Characteristic) curve of experimental group 1 and experimental group 2.