



2019 Annual Report of Surgery in the Department of Gynecology, West China Second University Hospital of Sichuan University

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Abstract: This is the first annual report issued by the Department of Gynecology of West China Second University Hospital of Sichuan University (WCSUH-SCU) to document the achievements of the gynecologic surgery teams at WCSUH-SCU in 2019. Patients who received gynecologic surgeries between January 1, 2017 and December 31, 2019 in the Department of Gynecology were retrospectively collected. Detailed data on surgical volume, procedures for different gynecologic diseases (cervical cancer, endometrial cancer, ovarian cancer, and endometriosis) were analyzed separately. The research and educational accomplishments of our department's surgical teams in 2019 were also reported. In the year 2019, 62 doctors (14 senior doctors, 16 associate senior doctors, 25 attending doctors, and 7 residents) performed 13,934 surgical procedures for 890 cervical cancer patients, 546 endometrial cancer patients, 409 ovarian cancer patients, and 3176 endometriosis patients. The total surgical volume increased by 16.2% over 2018. In 2019, the department showed improvements in the quality and quantity of surgeries and also made significant progress in scientific research, education, and other areas. All staff in the department will continue to offer quality care to patients, promote the development of our discipline, and work to increase the department's academic impact.

Keywords: Gynecologic procedures; surgical volume; scientific research; education

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West China Second University Hospital of Sichuan University (WCSUH-SCU) was originally Yan Chai Women's Hospital, which itself was founded in 1896. Today, WCSUH-SCU operates two campuses, Huaxi and Jinjiang, with obstetrics and gynecology, and pediatrics as its two major disciplines.

The Department of Gynecology adheres to the WCSUH-SCU motto of "Fraternity, Professionalism, Innovation, and Dedication" as well as the core values of "patient-centered and staff-respected", as inspired by national and hospital policies. The department currently has 280 beds across the Huaxi and Jinjiang campuses, with staff members and supplies being efficiently allocated and exchanged between the two sites.

In 2019, all three gynecology wards in the Jinjiang

campus were officially opened, offering 182 beds for public use. Standard operating procedures (SOPs) have been developed for the Department of Gynecology in the new campus, laying a solid foundation for the smooth operation of the gynecological wards there. The department has also opened its first VIP gynecological ward, which was designed to create a "doctor-patient home" to offer "one-stop", continuous medical services with humanistic care.

In 2019, a total of 15,189 patients were admitted, and 13,934 surgical operations were performed. The number of surgical patients increased by 16.2% over 2018 (*Figure 1*). The department currently has 62 doctors including 14 senior doctors, 16 associate senior doctors, 25 attending doctors, and 7 residents (*Figure 2*).

The gynecologic surgery teams in our department have

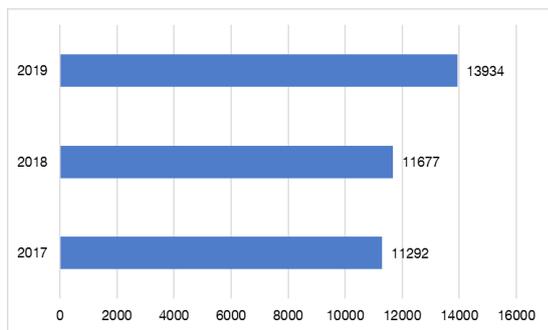


Figure 1 Annual surgical volume in WCSUH-SCU from 2017 to 2019. WCSUH-SCU, West China Second University Hospital of Sichuan University.

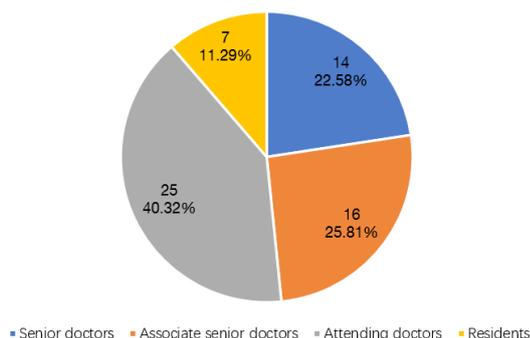


Figure 2 Staff structure in the Department of Gynecology.

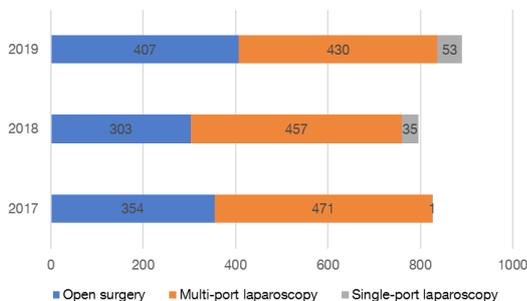


Figure 3 Surgical procedures for cervical cancer in 2017 to 2019.

extensive experience in performing surgery for primary and recurrent malignant tumors, laparoscopic surgery, fertility-preserving surgery in patients with malignant tumors, and treatment for endometriosis, as well as various interventional therapies for complex reproductive tract malformations, reproductive tract fistulas, and pelvic floor

diseases. Our teams success and expertise in these surgeries have garnered an excellent reputation across a full range of subspecialties. Since minimally invasive surgery is a safe and effective treatment that can provide satisfactory cosmetic outcomes and rapid recovery for the patient, it has been widely applied in our department. Many young doctors have become skilled in minimally invasive techniques. Moreover, our department has adopted the Enhanced Recovery After Surgery (ERAS) protocol and has implemented safe and effective perioperative transitional care programs and clinical pathways in an attempt to accelerate postoperative physical and mental recovery, improve patients' quality of life and surgical outcomes, and save medical resources.

Methods

Materials

Data from patients who received gynecologic surgeries between January 1, 2017 and December 31, 2019 in the Department of Gynecology were retrospectively collected. Detailed data on surgical volume from procedures for different gynecologic diseases (cervical cancer, endometrial cancer, ovarian cancer, and endometriosis) were analyzed separately.

Statistical analysis

Categorical variables are expressed as percentage frequency. The data from 2019 were compared with the data from 2018 and 2017. Statistical analysis was carried out using the SPSS software (version 22.0, USA) and Excel (version 2016, Microsoft, USA).

Results

Cervical cancer

In 2019, 890 patients with cervical cancer underwent surgery, representing an increase of 10.7% from 2018. Surgical approaches included open surgery (n=407, 45.7%), multi-port laparoscopic surgery (n=430, 48.3%), and single-port laparoscopic surgery (n=53, 6.0%); including vaginal natural orifice transluminal endoscopic surgery (vNOTES) in 2 cases (Figure 3). Laparoscopic surgeries without uterine manipulation were performed in 23 cases and included 20 cases of multi-port laparoscopy and 3 cases of single-port laparoscopy.

Among all patients who received surgery for cervical

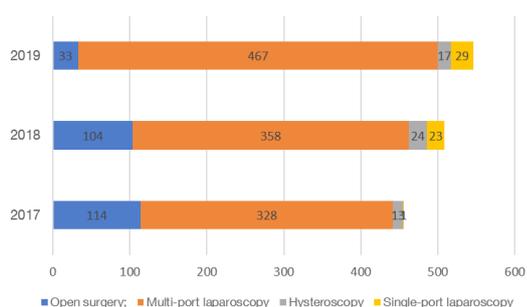


Figure 4 Surgical procedures for endometrial cancer in 2017 to 2019.

cancer, 9 patients underwent extensive cervical resection, including fertility-preserving surgery for 4 young patients (laparoscopic and open surgery in 3 cases and 1 case, respectively) and surgery for cervical stump cancer in 5 other patients with (laparoscopic and open surgery in 3 and 2 cases, respectively). The remaining patients received radical resection of cervical cancer.

According to the Laparoscopic Approach to Cervical Cancer (LACC) study published in the *New England Journal of Medicine* in November, 2018, for patients with International Federation of Gynecology and Obstetrics (FIGO 2009) Stage IB1 cervical cancer lesions with a tumor size of ≤ 4 cm, the risks of recurrence and death in patients treated with minimally invasive surgery were 3.7-fold and 6.0-fold higher, respectively, than in those who underwent open surgery. The findings of the LACC study had a significant impact on the healthcare community. Both the U.S. National Comprehensive Cancer Network (NCCN) Guidelines for Cervical Cancer, Version 3.2019 and the latest statement from the European Society of Gynaecological Oncology (ESGO) have emphasized that radical hysterectomy is the gold standard for early-stage cervical cancer. The American Gynecological & Obstetrical Society (ASCO), and the British Gynecological Cancer Society also agree that minimally invasive surgery is associated with a lower rate of survival than open surgery. A multicenter study involving Korea, Argentina, Canada, and the American state of Alabama has revealed similar findings. Many studies have demonstrated that patients treated with minimally invasive surgery have worse oncological outcomes than those who undergo open surgery, as proposed by the LACC study.

Based on these new research findings, the outpatient department at WCSUH-SCU aims to fully inform patients

and their families of the advantages and disadvantages of open surgery versus minimally invasive surgery before surgery is elected, and the indications for minimally invasive surgery have been applied much more strictly.

The proportion of patients treated with open surgery was markedly increased in 2019 compared to the previous year. In 2018, a total 795 patients (2019: 890 patients) underwent cervical cancer surgery, among whom 303 [38.1%; 2019: 407 (45.7%)] received open surgery and 492 [61.9%; 483 (54.3%)] received minimally invasive surgery.

Meanwhile, our department has actively participated in clinical research, including a non-randomized controlled study on the use of surgical treatment for early-stage cervical cancer. Professor Zhengyu Li and his team retrospectively analyzed the clinicopathological data of 678 patients with early-stage cervical cancer who were treated in our department between 2013 and 2015 (the article has been published) and found that tumor size was a key consideration for the treatment of early-stage cervical cancer: specifically, when the tumor was ≤ 4 cm in size, minimally invasive surgery had similar outcomes to open surgery; however, when the tumor diameter was >4 cm, open surgery was preferred. More studies are currently in progress.

Endometrial cancer

In the year of 2019, 546 patients received surgery for endometrial cancer, representing an increase of 6.8% from 2018. Surgical techniques included open surgery (n=33, 6.0%), multi-port laparoscopic surgery (n=467, 85.5%), hysteroscopic surgery (n=17, 3.1%), and single-port laparoscopic surgery (n=29, 5.3%) (Figure 4). Although there was only a slight increase in the total number of surgical procedures performed in 2019, the proportion of cases treated with minimally invasive surgery rose markedly from 2018 (79.6% in 2018 vs. 94% in 2019).

Among them, 19 young patients underwent fertility-preserving hysteroscopic lesion resection (hysteroscopy in 17 cases and hysteroscopy & laparoscopy in 2 cases).

Ovarian cancer

In 2019, a total of 409 patients underwent surgery for ovarian cancer, representing an increase of 9.8% from 2018. Surgical techniques included open surgery (n=294, 71.9%), multiport laparoscopic surgery (n=115, 85.5%), and single-port laparoscopic surgery (n=15, 3.7%) (Figure 5). The

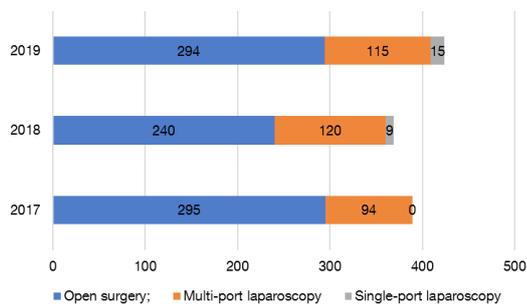


Figure 5 Surgical procedures for ovarian cancer in 2017 to 2019.

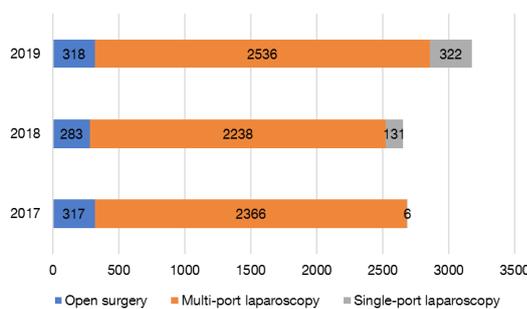


Figure 6 Surgical procedures for endometriosis from 2017 to 2019.

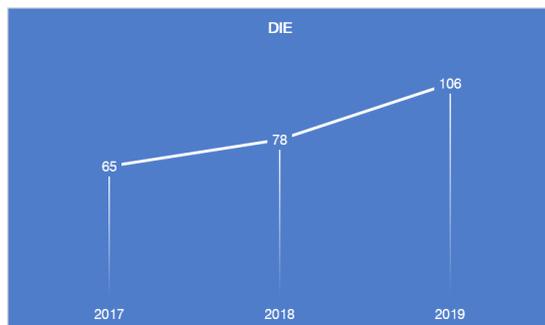


Figure 7 Surgical procedures for deep infiltrating endometriosis (DIE) from 2017 to 2019.

number of single-port laparoscopic surgeries increased by 40% from 2018 to 2019 (9 cases vs. 15 cases).

Endometriosis

In 2019, a total of 3,176 patients with endometriosis underwent surgery in our department, representing an

increase of 16.5% from 2018. Surgical techniques included open surgery (n=318, 10.0%), multiport laparoscopic surgery (n=2,536, 79.8%), and single-port laparoscopic surgery (n=322, 10.1%) (Figure 6).

Deep infiltrating endometriosis (DIE) is a clinicopathological type of endometriosis. Surgical treatment for DIE is especially challenging, due to its deep location. In 2019, a total of 106 patients underwent surgery for DIE in our department, representing a 26.4% increase from 2018 (Figure 7).

Scientific research and education

As one of the top facilities for clinical practice, teaching, and scientific research in the field of gynecology, our department is committed to training high-potential talent. A variety of training programs (including a weekly reading club and the bi-weekly mini-lectures) are offered to medical students, interns, trainees, and residents. A total of 106 hours of classroom- and bedside-based training sessions were completed in 2019. There were 75 master’s and doctorate candidates. As a standardized training base for residents, 142 residents completed training at our department in 2019.

In the same year, our department published 42 articles in Science Citation Index (SCI)-listed journals, including 14 articles that were published in journals with an impact factor of 3 or higher (highest impact factor: 15.545); 21 articles were published in MEDLINE® journals or core/statistical source journals; 14 research projects were supported by grants at all levels, with a total of 4.18 million CNY received in funding.

Doctors and nurses in our department are also encouraged and supported to seek refresher courses and accept new challenges. In 2019, two associate professors at our department received further training in the University of California and the University of Pennsylvania as visiting scholars. Four professors were invited to participate in the European Society for Gynaecological Endoscopy (ESGE) 28th Annual Congress in Greece, and three of them gave lectures at video conference sessions. Professor Ying Zheng and her team attended the 48th Global Congress of American Association of Gynecologic Laparoscopists (AAGL) in Canada; she made a speech at the conference, delivered a lecture at a session, and also chaired an academic session. Professor Zhengyu Li and his team attended the European Society for Medical Oncology (ESMO) Asia Meeting 2019 in Singapore, where they delivered a

speech to conference attendees and presented a poster. Furthermore, the nursing team of our department attended the International Council of Nurses Congress (2019 ICN), where they gave a speech. In 2019, medical staff in our department participated in more than 40 national academic activities, and more than 10 doctors and nurses gave speeches at conferences.

Our department also holds high-level national academic conferences to disseminate the latest knowledge in gynecology. In 2019, more than 10 academic events were held including “Improved Strategies for Early Diagnosis and Early Treatment of Gynecological Tumors”, “First Seminar on New Advances in Hysteroscopy”, and “Application of Single-port Laparoscopic Surgery in Gynecology”, with more than 1,000 attendees.

In addition to the above, the gynecologic surgery teams organized a series of live operation demonstrations as well as surgery courses and workshops, with the aim of sharing our professional expertise with peers across China. In 2019, our department also provided several webinars on surgical demonstrations, and these standardized and skilled surgical procedures earned unanimous praise from the audience and participants. The training courses held by our department in 2019 included those for single-port laparoscopic surgery, pelvic floor reconstruction, and level-4 gynecologic surgery. In these training sessions, professors from our department provided the trainees with detailed theoretical explanations and precise practical guidance on surgical procedures and skills, so that every participant benefited from each training program.

In April 2019, the “West China Women’s and Children’s Union Gynecology Alliance” was formally launched. During its first phase, some preparatory work, such as grassroots empowerment and framework construction, was carried out from June to December, 2019. After intensive training, a gynecological hospital alliance covering Chengdu and the rest of Sichuan was established, with WCSUH-SCU as the core institution for health care and medical education, district/county secondary hospitals as the secondary referral hospitals, and community health service centers as the grassroots base. The Gynecology Alliance offers a 14-lesson training course as required by the syllabus and includes 4 offline lessons and 10 online lessons. More than 90 medical staff in grassroots gynecological institutions have completed the training. Additionally, shadowing sessions were offered in the outpatient departments of WCSUH-SCU, with 25 gynecologists from grassroots institutions completing the training.

Discussion

This is the first annual report of the Department of Gynecology of WCSUH-SCU, which was issued to document achievements made by the gynecologic surgery teams of WCSUH-SCU in 2019. WCSUH-SCU is one of the higher profile hospitals for women and children in China, and has treated most of the critically ill women and children in western China. As the number of patients treated in our department has exceeded 11,000 for 3 consecutive years, this report was produced not only in an effort to inform our colleagues and patients about the new advances in gynecologic surgeries, but to also provide a summary of the recent developments in our department and serve as a reference for gynecologists at other institutions.

As a referral center for difficult and critically ill patients in southwestern China, our department has a longstanding commitment to increasing its capability to diagnose and treat gynecological diseases. We have constantly strengthened the management and staff training of the department to improve the skills of surgeons at all levels. We have paid special attention to scientific research by encouraging the sponsorship of (or participation in) clinical trials and the research and development of new clinical technologies. We have also enhanced connections among basic research and clinical teams to facilitate the sharing of knowledge and expertise and advance our institution holistically. In 2019, significant achievements were made in many subspecialties, which together have promoted the development of the entire department.

Minimally invasive gynecologic surgery

Under the leadership of the department and hospital directors, minimally invasive techniques have been widely applied in our department. Minimally invasive surgery is a safe and effective treatment that can ensure satisfactory cosmetic outcomes and rapid recovery for patients.

In 2019, our department became the first center in Sichuan to perform laparoscopic pelvic exenteration and the first center in southwestern China to perform laparoscopic surgery without pneumoperitoneum.

Our department successfully applied to the special fund for support in establishing the “National County-level Hospital Laparoscopy Surgery Training Base” in 2018. In 2019, three cohorts of students were enrolled, and all have successfully completed their training. The vast majority of the trainees indicated that they had learned a great deal

of laparoscopic surgery-related knowledge during the 3-month training course and would like to participate again in future. This training course also has promoted discipline construction in our department and extended the reach of our department across southwestern China and further afield.

Since the first single-port laparoscopic surgery was carried out in April 2017, more than 1,800 single-port laparoscopic procedures have been performed in our department thus far. A number of technical breakthroughs have paved the way for our department to perform 166 radical resection procedures using single-port laparoscopic technology for cervical cancer, endometrial cancer, fallopian tube cancer, ovarian cancer, and other gynecological malignancies, securing its place at the leading level in Sichuan Province.

In September 2019, our department successfully held the first training course on single-port laparoscopic surgery, which led to the adoption of this technology in other southwestern provinces including Yunnan, Guizhou, and Chongqing. In December 2019, our department successfully held the provincial continuing education course “Application and Training of Single-port Laparoscopic Techniques in Gynecology”, which attracted nearly 200 trainees.

In 2019, 10 articles were published on single-port laparoscopy (4 in SCI journals) and 4 utility patent applications were filed. A collection of single-port laparoscopic surgery videos was also published, with the publication listed in the “Sichuan Province 2019–2020 Key Audiovisual Electronic Publishing Planned Projects”.

Pelvic floor rehabilitation

The Pelvic Floor Rehabilitation Center of our department offers diagnosis and treatment services at the Jinjiang campus, benefiting nearly 10,000 patients with pelvic floor dysfunction. A new venue, the West China Science and Technology Building, provides patients with a warm and friendly health care environment.

The Pelvic Floor Rehabilitation Center has held multiple sessions of the “Pelvic Floor Therapist Salon” in Chengdu, which has attracted many pelvic floor rehabilitation therapists from various areas of Sichuan. The center successfully sponsored the Sichuan Province Professional Training Course on the Prevention and Treatment of Pelvic Floor Dysfunction, the 2nd International Multidisciplinary Summit on Gynecological Oncology and Female Pelvic

Floor Dysfunction, and the 3rd Academic Conference on New Advances in Treating Pelvic Floor Dysfunction. The center also played a leading role in the founding of the Female Reproductive Plastic and Rehabilitation and Anti-aging Branch under the Sichuan Association of Plastics and Aesthetics.

Clinically, the center has performed almost 400 pelvic floor reconstruction procedures, more than 100 tension-free transvaginal tape (TVT) operations, and 250 sacrocolpopexy procedures, reaching the advanced level in China.

Radiotherapy for gynecological tumors

In 2019, the Subspecialty of Radiotherapy for Gynecological Tumors was successfully established, ending the 30-year no-radiotherapy history of WCSUH-SCU.

On December 2, 2019, the first session of radiotherapy was performed in a woman with cervical cancer, realizing the hospital’s 30-year dream of offering integrated diagnosis and treatment, including screening, surgery, chemotherapy, and radiotherapy, for patients with gynecological tumors.

Summary

This annual report summarizes the achievements of the Department of Gynecology, WCSUH-SCU in the year of 2019. All the staff in our department will continue to offer quality care to our patients, promote the development of our discipline, and work to further the department’s academic reach.

Acknowledgments

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Footnote

Conflicts of Interest: Both authors have completed the ICMJE uniform disclosure form (available at <https://gpm.amegroups.com/article/view/10.21037/gpm-20-56/coif>). PW serves as an unpaid editorial board member of *Gynecology and Pelvic Medicine* from Jun 2020 to May 2022. The other author has no conflicts of interest to declare.

Ethical Statement: The authors are accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

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