

Editorial

The Impacts of Endoscopic Surgery, Imaging, Minimally Invasive Technology, and Therapy in Gynecological Disease: Possibilities and Risks

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I was honored to review this special issue for the Journal Clinical Experimental Obstetrics and Gynecology, which will publish several papers presenting scientifically important advances.

Haixia Xie *et al.* [1] addressed the complex topic of endoscopic treatment of intramural pregnancy (IMP). This rare type of ectopic pregnancy has an extremely delicate and complex pathology. These researchers conducted a retrospective analysis of 12 IMP patients who underwent laparoscopic treatment in their gynecology department over the course of 11 years. The efficacy of laparoscopic therapy for IMP was assessed, with the authors concluding that early IMP can be successfully treated with this approach, while still preserving the uterus.

Michico Honda *et al.* [2] also presented research on the topic of ectopic pregnancy. The use of laparoscopic salpingostomy to treat tubal ectopic pregnancy (TEP) is growing, as patients prefer future pregnancies to be spontaneous. Persisting trophoblasts (PT) are uncommon after laparoscopic salpingectomy, with their incidence reported to range from 5–29%. In order to identify risk factors for PT, these authors investigated serum hCG levels in 62 cases with “high hCG” treated by laparoscopic salpingostomy. Using multivariate analysis, they showed the time required for the serum hCG level to decline 1000-fold was 37 days with laparoscopic salpingostomy and 30 days with salpingectomy. Following their study on the relationship between serum hCG levels and PT, the selection criteria for PT proposed by the authors was a serum hCG level of >2000 and >4000 mIU/mL, respectively.

The majority of ureteral injuries caused by electro-surgery are discovered after surgery. San Il Kim *et al.* [3] investigated potential ureteral injury complications during total laparoscopic hysterectomy (TLH). They conducted a retrospective review of 480 patients who underwent TLH and assessed the viability and safety of vascular ligation using the Hem-o-lok clip to prevent heat damage to the ureter during this procedure. The two uterine veins were tied with Hem-o-lok clamps, as well as the gonadal arteries if the patient underwent unilateral or bilateral salpingo-

oophorectomy. The clinical results were then evaluated, including any perioperative and postoperative problems. Six patients experienced perioperative problems, including four cases of stump dehiscence and two of bladder damage. All bladder damage occurring during the procedure was discovered.

Daiki Hiratsuka *et al.* [4] conducted a retrospective case-control study of 65 endometrial cancer patients who underwent robotic-assisted laparoscopic hysterectomy (RALH) or total laparoscopic hysterectomy (TLH). This allowed them to assess which of the two methods is more viable and beneficial for stage I endometrial cancer patients when performed at a rural hospital where a single, non-laparoscopic-specialized surgeon performs oncologic surgery and provides outpatient care. They compared the surgical results of 34 patients who had robotic surgery with those of 31 patients who had laparoscopic surgery. Factors taken into account included the patient’s history, operating time and blood loss. Neither procedure resulted in serious adverse effects or ureteral damage necessitating repeat surgery or laparotomy conversion. Robotic surgery for the surgical treatment of stage I endometrial cancer was associated with a much shorter operation time, shorter hospital stays, and no overt problems. The results of this study suggest that robotic surgery is a promising method for long-term implementation of minimally invasive surgery for stage I endometrial cancer, particularly in remote hospitals or institutions with few gynecologists.

We are in a unique period in which our discipline is completely different from just 50 years ago, and in which we have witnessed a major transformational process. The tremendous changes that medicine has undergone are quite astounding. Hospitals did not use computers, and revolutionary procedures like robotic surgery, genetic testing, computerized tomography (CT), and magnetic resonance imaging (MRI) had not yet been developed.

The number of scientific papers is increasing exponentially, and together with access to big data has led to groundbreaking advances. The research presented in this special issue highlights the importance of endoscopic surgery,



imaging, and minimally invasive technology in gynecological disease. Indeed, ectopic pregnancy is one of the most frequently diagnosed pathologies in gynecology and can now be managed with minimally invasive treatment, thanks to timely diagnosis using imaging obtained with advanced instrumentation [5].

Although the complications arising from laparoscopic surgery are now well defined, they still persist. They can however be reduced using minimally invasive technology, thus benefiting both the patients and the doctors who use these techniques.

Since its inception, robotic surgery has proven to be a very practical and useful surgical tool in endoscopic surgery. Its use in oncological surgery has allowed radical intervention to be carried out more effectively and safely.

However, it must be emphasized that surgical endoscopy and minimally invasive technology must always be performed with an adequate skill level in order to maintain attention and to avoid risky situations.

To achieve the best results and uniform procedures, the important role of the surgeon must be highlighted, together with universal surgical principles such as minimalism and evidence-based practice. Surgeons need to keep up with recent advances in their specialty. Strict protocols should be used to assure safety, and surgical results should be examined in relation to the specific surgical procedure.

Despite the recent changes, it still remains evident that the doctor-patient relationship, the capacity for listening, and human values and warmth should always be the main considerations. The essential traits in surgery will always be personal touch, empathy, and dedication.

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AT wrote the manuscript and GP revised the manuscript.

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Conflict of Interest

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