

Review article

Laparoscopic Hysterectomy - Perspectives and Alternatives

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Abstract

The advancement of minimally invasive gynecological surgery has significantly impacted the approach to laparoscopic hysterectomy. In 1994, under the leadership of Prof. Kopjar, we performed the first laparoscopic hysterectomy in Southeast Europe, just five years after the world's first by Prof. Reich. Now, with over a thousand procedures performed and 30 years of experience, we can confidently state that this technique has revolutionized surgical gynecology, challenging long-standing paradigms. As we enter the fourth decade of performing laparoscopic hysterectomies, we can critically assess its benefits. This procedure's minimal invasiveness has made it a widely accepted option, aligned with proper medical indications. Today, laparoscopic hysterectomy is well-established in clinical practice, and robotic hysterectomy is becoming increasingly prevalent due to its enhanced precision, reduced invasiveness, and faster patient recovery. While its high cost remains a barrier, emerging technologies and more affordable equipment offer hope for broader accessibility. From a public health perspective, laparoscopic hysterectomy offers substantial benefits, including quicker postoperative recovery and a lower rate of complications. These advantages contribute to faster reintegration of patients into the workforce and reduced healthcare burdens. Given that hysterectomy remains one of the most common gynecological surgeries, continued adoption and technological advancement are expected. We are optimistic that the integration of cutting-edge, cost-effective technologies will expand the availability of minimally invasive procedures, ultimately benefiting both individual patients and the broader healthcare system.

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Laparoscopic hysterectomy - recent findings

It is undeniable that the concept of minimally invasive gynecological surgery imposes a different philosophy in the approach to gynecological pelvic diseases. The above also applies to the frequency and indication area for performing laparoscopic hysterectomy. Although hysterectomy is still one of the most common gynecological operations today, we have had to redefine and update our previous knowledge in many areas (1-5).

Numerous considerations have also been redefined, and for a long time now the issue of laparoscopic morcellation has been approached in a different and strictly indicated manner, primarily in accordance with modern gynecological oncological and endoscopic settings (6).

In many other areas, laparoscopic hysterectomy is no longer approached in the same way as it once was, and alternative methods that exclude hysterectomy are increasingly being used. Today's environment is primarily focused on the wishes of our patients, their primary well-being, but also on the quality of life and patient satisfaction (7,8).

On these foundations, scientific and professional knowledge and procedures regarding laparoscopic hysterectomies themselves are evolving. Thus, in benign pathology, there are centers that do not use uterine manipulators in their surgical technique, as well as those for which their use is still mandatory (9). Numerous other technical settings also determine the indication areas and techniques of laparoscopic hysterectomies themselves today. Will the patient undergo laparoscopically assisted vaginal hysterectomy, total laparoscopic hysterectomy, supracervical laparoscopic hysterectomy or robotic hysterectomy? We must also include in our considerations the field of gynecological oncology with total radical laparoscopic hysterectomy, where in modern times it has a very strong place, especially in the treatment of endometrial cancer (10,11).

The prospects of laparoscopic hysterectomy in the future will certainly be directed towards its minimally invasive component. The continuous progress of science, technology, experience, as well as the change of paradigm related to laparoscopic hysterectomy, are fundamentally changing the atmosphere in which we live and work. Since the world never stands still, and scientific research and the amount of new knowledge is multiplied immeasurably, the aforementioned aspirations do not bypass pelvic medicine, and therefore the issue of laparoscopic hysterectomies. Surgical techniques, given the development of technology and modern surgical techniques as well as instrumentation, are today much more advanced and provide our patients with a very safe and acceptable alternative for further consideration and making the best decisions. By promoting and adopting modern knowledge, educating a large number of endoscopists, today we have a positive atmosphere with a large number of centers where endoscopic techniques are applied in minimally invasive gynecological surgery. The prospects today are much better than they were ten, twenty or thirty years ago. Many centers use laparoscopic surgery methods, including laparoscopic hysterectomy, in routine practice. Since today, in accordance with strictly indicated cases, we have very precise decision-making capabilities and patient selection, making decisions about the type of surgical endoscopic procedures becomes much easier and more defined. Whether one of the many possible types of hysterectomy, especially laparoscopic, will be applied today must be considered multidisciplinary, first and foremost accepting strict indication frameworks and the well-being of the patient. We must also include in our considerations the field of gynecological oncology with total radical laparoscopic hysterectomy, where in modern times it has a very strong place, especially in the treatment of endometrial cancer. It is undeniable that the development and success of laparoscopic hysterectomy depend to a large extent on the education and training of the operator, which is why continuous education and training of

endoscopists are of exceptional importance (12-15).

Laparoscopic hysterectomy - development, research and perspectives

We must proudly point out that the development of minimally invasive gynecological surgery is changing the perception in the field of minimally invasive gynecological surgery, including laparoscopic hysterectomy. We must once again recall the pioneering successes of gynecological endoscopy in the areas of Southeast Europe, which had an unstoppable course. We must remember the year 1994 when the first laparoscopic hysterectomy in Southeast Europe was performed at the Zabok General Hospital. The team that included Prof. Miroslav Kopjar and Dr. Nikša Knezović truly performed a revolutionary operation at that time, bypassing the spatial, technological and organizational circumstances. However, after a great deal of effort, education and experience spanning more than three decades, today we must proudly say that the process that we have gone through and brought to life, truly has no alternative. The facts that speak of the historical truth, that in Zabok and Croatia, the first laparoscopic hysterectomy was performed only five years after the pioneering one performed in 1999 by Prof. Harry Raich, are truly something we should be proud of. The passage of time is the best way to see the achievements of the aforementioned pioneering steps, which changed paradigms that have existed for decades, and even centuries, which is very difficult to change.

It is undeniable that today, as we enter the fourth decade of performing laparoscopic hysterectomy, we can see all the significant elements of laparoscopic hysterectomies much more objectively. We should always emphasize the most important component related to the surgical procedure itself, which is its minimal invasiveness. With strict indication postulates, laparoscopic hysterectomy is now established in clinical practice. Robotic hysterectomy is also entering routine clinical practice in a big way,

which today truly represents the highest stage in the development of technology and brings our patients numerous benefits, while offering the additional component of minimal invasiveness. The high price of the device and consumables is still associated with the aforementioned technique, but even today we have much cheaper and more sophisticated systems on the market. It is undeniable that a complete public health system using laparoscopic hysterectomy has numerous advantages. In doing so, we must always emphasize the much faster postoperative inclusion of patients in the working environment and with a much lower incidence of comorbidities. The fact is that even today, hysterectomy, including laparoscopic hysterectomy, is one of the most frequently performed surgical procedures in gynecology. We expect that millions of laparoscopic hysterectomies in the world and thousands of laparoscopic hysterectomies performed in Croatia will be the best guarantee for the implementation of the method even in the few centers where the aforementioned methods are still not implemented. We should certainly hope that the aforementioned changes will take place in the near future and that the introduction of the most modern technological systems and knowledge, as well as their practical application and accessibility, will ensure additional quality for patients, healthcare workers, and the entire public health system. We are convinced that the continuous and unprecedented development of minimally invasive gynecological surgery, including the development of laparoscopic hysterectomy techniques, cannot be stopped. On these postulates, it is still necessary to invest significant efforts aimed at continuously raising the level of education, training and continuous improvement of new generations of gynecological endoscopists, as well as maintaining the level of training of the existing staff. To the extent that we will succeed in our efforts, and we see no reason why it would not be so, it is certain that the future of minimally invasive gynecological surgery is indeed guaranteed in our region. And the role of laparoscopic hysterectomy in that process will continue to be in the center of interest (16-18).

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Laparoskopska histerektomija: perspektive i alternative

Sažetak

Napredak minimalno invazivne ginekološke kirurgije značajno je utjecao na pristup laparoskopskoj histerektomiji. Godine 1994., pod vodstvom prof. Kopjara, izveli smo prvu laparoskopsku histerektomiju u jugoistočnoj Europi, samo pet godina nakon što je prof. Reich izveo prvu takvu operaciju u svijetu. Danas, s više od tisuću izvedenih zahvata i 30 godina iskustva, s pravom možemo reći da je ova tehnika revolucionirala ginekološku kirurgiju i promijenila dugogodišnje paradigme. Ulaskom u četvrto desetljeće izvođenja laparoskopske histerektomije, možemo objektivno sagledati njezine prednosti. Minimalna invazivnost ove metode učinila ju je široko prihvaćenom, u skladu s medicinskim indikacijama. Danas je laparoskopska histerektomija standard u kliničkoj praksi, dok robotska histerektomija sve više dobiva na značaju zahvaljujući većoj preciznosti, manjoj invazivnosti i bržem oporavku pacijentica. Iako visoka cijena još uvijek predstavlja prepreku, razvoj novih, pristupačnijih tehnologija nudi nadu za širu dostupnost. S javnozdravstvenog aspekta, laparoskopska histerektomija donosi brojne prednosti, uključujući brži postoperativni oporavak i manju učestalost komplikacija, što omogućuje brži povratak pacijentica na posao i smanjenje opterećenja zdravstvenog sustava. Budući da histerektomija i dalje ostaje jedan od najčešćih ginekoloških zahvata, očekuje se daljnje širenje ove metode. S optimizmom gledamo na daljnju integraciju suvremenih i dostupnijih tehnologija koje će proširiti primjenu minimalno invazivnih zahvata na dobrobit pacijentica i cijelog zdravstvenog sustava.

Ključne riječi: totalna laparoskopska histerektomija, minimalno invazivna ginekološka kirurgija, robotska kirurgija.