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LETTER TO THE EDITOR

New perspectives about the role of robot-assisted surgery for the treatment of endometriosis

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To the Editor:

We read with great interest the recently published article by Comptour et al. entitled "Patient Quality of Life and Symptoms after Surgical Treatment for Endometriosis" [1].

Painful gynecological and digestive symptoms of endometriosis have been shown to severely affect the patients' quality of life (QoL), and various studies have described the benefits of surgery in the treatment of endometriosis, particularly in its worst presentation, namely, Deep Infiltrating Endometriosis (DIE). Comptour et al. have designed a prospective and multicenter cohort study to assess the impact of surgical treatment of endometriosis on quality of life and pain, and their results seem to confirm these benefits.

A minimally invasive approach is considered, nowadays the gold standard for surgical treatment of endometriosis, as it results in faster recovery, reduced hospital stay, improved cosmetic results, and lower postoperative morbidity if compared to laparotomy [2]. However, in the manuscript the authors reported and discussed only about the Direct Manual Laparoscopic Surgery (DMLS), without mentioning the possible role of the Robot-Assisted Laparoscopic Surgery (RALS) in this field. In our opinion, the robotic approach represents no more than a technological evolution of DMLS, developed with the aim to overcome its kinematic limitations [3], and as such, it should have been at least discussed.

We think that this is an important limitation of the study, as several papers had previously reported good results of RALS for endometriosis including DIE, in particular regarding functional outcomes and QoL [3, 4]. We understand that the main reason why the use of RALS has not spread how anyone could expect, and why some surgeons and gynecologists do not support its application, is the unfavorable cost–benefit evaluation reported in the past.

In the surgical treatment of DIE, the distorted anatomy, as well as the need of surgical radicality, often carries the inherent risk of an increased complication rate (i.e., rectovaginal fistulae, anastomotic leakage, and urologic sequelae), which is particularly not desirable considering the young age of the typical patient and the aim of this kind of surgery, always performed to improve the quality of life. Furthermore, it has been also reported that the use of laparoscopy has not decreased the incidence of sexual and urinary dysfunction, with a rate of genitourinary complications which is a higher or similar to open surgery, and this is particularly true for DIE.

In this scenario, we think that the role of RALS deserves to be further investigated and discussed, in particular as a consequence of some recent observations, suggesting that the perspectives about the RALS-related cost analysis are changing nowadays. Indeed, as we have recently published, the increased experience with the robotic platform and the introduction of the da Vinci Xi has both been associated with significant reduction of costs, and with an improvement of the surgical performances [5, 6]. Moreover, the published economic evaluations unfavorable to RALS with respect to DMLS have all almost been based on studies performed with the da Vinci Si, comparing expert laparoscopic with novice robotic surgeons and, for this reason no more current. Therefore, we retain that the use of da Vinci Xi, or of new surgical robots which are likely to enter quite soon in the market, with case series performed by expert robotic surgeons, may represent a totally different scenario, thus requiring careful objective re-evaluation of cost–benefit about robotic-assisted approach applied to DIE as well as to other fields.

In conclusion, although data available in the literature and individual experiences do not definitively support the hypothesis of the superiority of RALS in the management of endometriosis, more and more surgical teams are using,

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and will use robotic assistance with new systems, and will report their experience within the next few years. For these reasons, we think that the debate on the role of DMLS and RALS in DIE surgical management is far from being closed.

Compliance with ethical standards

Conflict of interest Furbetta Niccolò, Bianchini Matteo, Palmeri Matteo, and Morelli Luca declare that they have no conflict of interest.

References

1. Comptour A, Chauvet P, Canis M, Grémeau AS, Pouly JL, Rabischong B, Pereira B, Bourdel N (2018) Patient quality of life and symptoms after surgical treatment for endometriosis. J Minim Invasive Gynecol. https://doi.org/10.1016/j.jmig.2018.08.005 **(Epub ahead of print)**
2. Vitobello D, Fattizzi N, Santoro G, Rosati R, Baldazzi G, Bulletti C, Palmara V (2013) Robotic surgery and standard laparoscopy: a surgical hybrid technique for use in colorectal endometriosis. J Obstet Gynaecol Res 39(1):217–222
3. Siesto G, Ieda N, Rosati R, Vitobello D (2014) Robotic surgery for deep endometriosis: a paradigm shift. Int J Med Robot 10(2):140–146
4. Morelli L, Perutelli A, Palmeri M, Guadagni S, Mariniello MD, Di Franco G, Cela V, Brundu B, Salerno MG, Di Candio G, Mosca F (2016) Robot-assisted surgery for the radical treatment of deep infiltrating endometriosis with colorectal involvement: short- and mid-term surgical and functional outcomes. Int J Colorectal Dis 31:643–652. https://doi.org/10.1007/s00384-015-2477-2
5. Morelli L, Guadagni S, Lorenzoni V, Di Franco G, Cobuccio L, Palmeri M, Caprili G, D'Isidoro C, Moglia A, Ferrari V, Di Candio G, Mosca F, Turchetti G (2016) Robot-assisted versus laparoscopic rectal resection for cancer in a single surgeon's experience: a cost analysis covering the initial 50 robotic cases with the da Vinci Si. Int J Colorectal Dis 31(9):1639–1648. https://doi.org/10.1007/s00384-016-2631-5 **(Epub 2016 Jul 31)**
6. Morelli L, Di Franco G, Lorenzoni V, Guadagni S, Palmeri M, Furbetta N, Gianardi D, Bianchini M, Caprili G, Mosca F, Turchetti G, Cuschieri A (2018) Structured cost analysis of robotic TME resection for rectal cancer: a comparison between the da Vinci Si and Xi in a single surgeon's experience. Surg Endosc. https://doi.org/10.1007/s00464-018-6465-9 **(Epub ahead of print)**