
LETTER TO THE EDITOR

Re: Mechanical failure rate of da Vinci robotic system

L. S. Borden Jr., P. M. Kozlowski, C. R. Porter, J. M. Corman

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To the Editor:

We read with interest the article by Borden LS et al¹ that was recently published in your journal. The authors report on their large series of robotic-assisted laparoscopic prostatectomies (RALPs) treated at a major urology center in the US, focusing on cases of mechanical failure of the da Vinci system (Intuitive Surgical Inc., Sunnyvale, CA). To our knowledge, this is the only article in the English medical literature treating this important aspect of robotic urology surgery. The rate of malfunction appears to be low (2.6%) and in three cases the malfunctions occurred during the intervention, with the necessity to convert to open surgery from laparoscopic surgery.

In other series, sporadic cases of malfunction of the da Vinci system are described. In a large series of 322 RALPs, Hu et al cite two cases (0.6%) where the robot became unresponsive and refractory to troubleshooting measures.² At our center, after performing more than 200 RALPs since 2004, we had only one case of software malfunctioning after the trocar positioning, which subsequently needed an open surgery approach. As it emerges from the literature, this problem of malfunctioning appears to be underestimated, probably due to the exclusion of similar cases of malfunctioning from reported series, so the article by Borden LS et al is very interesting.

In our experience, we place great importance on frequently checking the proper functioning of the robot especially during the operator's learning curve. During the first 100 RALPs at our center, a technician from Intuitive Surgical Inc. was always present in the operating theatre, and a pool of nurses learned the principles of the functioning of the robot. Later on, a company technician was present in the operating room one day a week and was on call on other days. Also, the software, camera, monitors, and electronic components were periodically monitored for quality control. Our only case of robotic malfunctioning was explained by a general blackout of all computers and monitors in the operating block. That surgical procedure was converted from laparoscopy to open surgery, since it was impossible to perform a laparoscopy.

In accord with Borden LS et al, we maintain that it is essential to ensure careful preoperative counseling with the patient regarding the possibility of robotic mechanical failure. Moreover, we maintain that only a series of programmed, controlled, step-by-step checks of the robot and all the mechanical and electronic instruments could guarantee a severe reduction of similar episodes of robotic mechanical failure.

Sincerely,

Paolo Pierini, MD and Emanuele Baldassarre, MD
Division of Urology, Regional Hospital
Aosta, Italy

1. Borden LS, Kozlowski PM, Porter CR, Corman JM. Mechanical failure rate of da Vinci robotic system. *Can J Urol* 2007;14(2): 3499-3501.
2. Hu J, Nelson RA, Wilson TG et al. Perioperative complications of laparoscopic and robotic assisted laparoscopic radical prostatectomy. *J Urol* 2006;175:541-546.

Reply by the authors:

We appreciate the comments of Drs. Pierini and Baldassarre and concur that although robotic failure is unusual, instrument familiarity and careful patient counseling are important components of this minimally invasive surgical approach.

Sincerely,

Lester S. Borden Jr., MD
Paul M. Kozlowski, MD
Christopher R. Porter, MD
John M. Corman, MD
Virginia Mason Medical Center
Seattle, Washington, USA