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Editorial

Robotic Radical Cystectomy - A New Way of Resecting

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Robotic radical cystectomy remains the hardest operation within urology. As surgeons, we consistently look to improve our outcomes. The use of indocyanine green (ICG) fluorescence imaging during robotic assisted laparoscopy has been shown to be helpful in identifying critical structures during cholecystectomies [1]. Additionally, injection of intravenous ICG highlights pelvic vasculature. This can aid in identifying blood supply to myomas during robotic assisted laparoscopic myomectomy and decrease surgical blood loss [2]. The question then becomes, how can this be used to improve surgical outcomes for robotic radical cystectomy?

There are several steps within cystectomy that can use Firefly fluorescence to guide it further. This technology can assist in localizing a lesion in the bladder. The localization of the disease with this technology is efficient and precise, minimizing the lack of tactile feedback to localize the pathology during robotic assisted surgery [3]. This allows for a much more precise resection. Additionally, by integrating intraoperative near infrared fluorescence imaging into a robotic system, surgeons can identify the vascular anatomy in real-time with the technical advantages of robotics that is useful for meticulous lymph vascular dissection [4]. This technique can allow for precise lymph node dissection within the pelvis and identification of the SMA. This allows for a safe controlled resection.

Indocyanine green (ICG) fluorescence technology has also been used to delineate bowel perfusion. The optimal point of transection can be marked under white (visible) light followed by intravenous injection of 6-8 mg of ICG [5]. The bowel is then visualized via near infrared laparoscopy and the point of transection of the proximal is revised based on optimal bowel perfusion. This demonstrates the feasibility and advantages of the use of fluorescence imaging during creation of anastomosis; the advantages of endoscopic imaging to delineate integrity of the anastomosis as well the technique with regards to creating the anatomises [5]. This can be used as part of cystectomy, when forming the conduit.To take this one step further, it can also be used, to assess the vasculature of the ideal conduit segment.

In conclusion, we have another 'pair of eyes' to enable us to conduct a safe controlled resection, with good vascular control, and which also allows us to conduct as safe anastomosis at the most precise location.

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