Robotic-assisted surgery in reconstructive surgery

Open and laparoscopic radical prostatectomy: experience at our center

Minimally invasive surgery in Mexico, referring to initial Laparoscopic Surgery, has developed greatly over the last years. Laparoscopic procedures are currently more frequently performed in many centers in our country. These include oncologic surgery, as well as reconstructive surgery, especially in the upper urinary tract, such as laparoscopic ureteropyeloplasty. Now with the availability of robotic-assisted technology, the question is whether we will take it as far as other countries, considering that the open techniques are still the criterion standard, except in the case of ureteropyeloplasty.1

It is also true that different surgical areas, such as those of gynecology and coloproctology, among others, have increased their experience in minimally invasive, laparoscopic, and robotic-assisted surgery, which has generated flows of patients that require support in reconstructive procedures.

Robotic-assisted ureteropyeloplasty

The laparoscopic approach described by Shueessler in 1993 with the same indications as for open surgery, is a procedure that requires previous training in laparoscopy of greater technical complexity, the performance of intracorporeal suturing, and when necessary, the placement of intraoperative double-J ureteral stent. However, once experience is acquired, these are movements that can be performed transperitoneally or retroperitoneally. They are facilitated through robotic surgery, reducing the complexity of the reconstruction. The robotic-assisted Anderson-Hynes repair is currently regarded as an alternative with a low complication rate, shorter hospital stay, and faster recovery period.3

Robotic-assisted ureteral reimplantation

Ureteral repair due to a variety of causes has been described by different authors. Among them is the laparoscopic Psoas Hitch technique for distal ureter stricture repair.4 It is clear that reconstructive surgery of both the upper and lower ureter can be performed laparoscopically, including the difficulties of the movements and the manipulation of such a delicate structure, but with a better visualization of it. In their description of the robotics procedure, Mufarrij et al., with their vast experience, propose ureteral reconstruction secondary to ureteropelvic obstruction, ureterolithotomies, and ureteral reimplantations in their series.3 Robotic-assisted ureteral reimplantation with Psoas-Hitch has been developed by experienced surgeons with excellent results (fig. 1), blood loss of 48 ml, surgery duration of 208 min, and an average hospital stay of 4 days with no conversion data.6

Robotic-assisted ureterovaginal fistula closure

Fistula is generally secondary to abdominal or vaginal hysterectomy, cesarean section, or anterior colporrhaphy. Ureterovaginal or vesicovaginal fistulas can also result from urologic surgery, surgery of the colon, and in those patients that have undergone radiation or pelvic trauma surgery and their laparoscopic repair has been performed and described.7

Nowadays, many groups carry out robotic-assisted hysterectomies on a learning curve, although no significant differences have been demonstrated in surgery passing from benign to malignant pathology management.1 Radical hysterectomy or surgery for benign pathology is a frequent intervention and is on the rise as a robotic-assisted...
A procedure. An excellent alternative is simultaneous repair when the lesion is detected, but if they are undetected, the ideal approach is through the same via, which is increasingly being requested by the patients themselves (fig. 2). Robotic surgery offers us three-dimensionality and support in the spaces of the pelvis that enable correct repair, even in complex situations.

Robotic-assisted colposacral suspension

The repair of the different compartments has given rise to different procedures with or without meshes that have been subjects of debate with respect to results, functionality, and complications. The abdominal approach is adequately indicated in those patients with previous vaginal repair, isolated prolapse, or enterocele. It has been reproduced laparoscopically and has been compared with the open technique. The robotic-assisted technique has also had similar results, also in obese patients; for many years obesity was considered an impediment. Today there are similar results between laparoscopic and robotic-assisted surgery.

With the growth of minimally invasive surgery in its areas of laparoscopy and robotics we are able to reproduce many of the reconstructive techniques that have followed the evolutionary course of surgery from the open technique to robotic-assisted procedures. This should make it clear to us that the therapeutic option exists and that it is reproducible with good results. There should be no obstacles to this surgery when it is the best option for a given case. Many cases require delicate movements and precise reconstructions, which are two of the great characteristics of robotic surgery, together with improving our vision for correctly identifying planes in anatomies that have been modified or seriously compromised.

References


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