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Editorial

"Lateral Window Technique" for Bladder Dissection During Laparoscopic Hysterectomy: Relatively Safe Approach

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Hysterectomy is surgical removal of uterus. Worldwide it is one of the commonest performed operation and most common indication for doing hysterectomy is uterine fibroids (40%) endometriosis (17%) and prolapse [1].

Commonly used approaches for doing hysterectomy are

1. Abdominal hysterectomy (66%).
2. Vaginal hysterectomy (12%).
3. Laparoscopic assisted vaginal hysterectomy.
4. Total laparoscopic hysterectomy.
5. Non descent vaginal hysterectomy.
6. Robotic assisted hysterectomy.

Nowadays laparoscopic hysterectomy is indicated as an alternative to laparotomy when vaginal approach is difficult either due to large uterus or poor vaginal accessibility. Laparoscopic hysterectomy is widely accepted to result in less pain and earlier return to work [2].

Injury to urinary tract involving bladder and ureter is a recognised complication of hysterectomy given the close anatomic relationship between genital and urinary tract. By far bladder injury is more common than ureteric injury and any pelvic pathology secondary to either infection or endometriosis or adhesion or scarring from previous cesarean section may put the patient at increased for bladder injury at subsequent hysterectomy [3].

It is been reported that bladder injuries are common during hysterectomy especially in patients with previous cesarean section and increasing number of cesarean section worldwide may contribute to higher incidence of bladder injuries during subsequent hysterectomy due to dense vesico-cervical adhesion and distorted anatomy.

It is been found that after cesarean section adhesion between bladder and lower uterine segment are commonly limited to vesico-cervical space with sparing of parametrical space so as to minimise the chances of bladder injuries, creating a lateral window in broad ligament and dissecting it from lateral to medial side with separation of central adhesions under vision appears to be a safe and alternative approach to central bladder dissection [4].

Urinary bladder injury is considered as most common complication during cesarean section and hysterectomy and dome of bladder is commonly involved in injury during hysterectomy. Nowadays many patients who requires hysterectomy came with history of having

previous cesarean section or severe bladder adhesions due to prior endometriosis surgery or pelvic inflammatory disease so it becomes imperative to use a safe approach for bladder dissection during hysterectomy so as to prevent or minimises the complications [5].

The idea behind using the lateral window approach to bladder dissection is based on the fact that after cesarean the most common point of bladder adhesion is the central region with free parametrical space bilateral so if we go from lateral side separating the anterior and posterior leafs of broad ligaments and do dissection of central fibrous adhesions under vision to prevent damage to bladder [6].

Ever since Harry Reich., *et al*. performed first laparoscopic hysterectomy in 1988 it stimulated a widespread interest in laparoscopic approach to hysterectomy.

Evidence based studies had shown that laparoscopic hysterectomy is a better alternative to abdominal hysterectomy in terms of lower postoperative morbidity, early return to normal activities, better cosmetic results lower costs and improved quality of healthcare. At the same time laparoscopic hysterectomy introduced a new set of complications in addition to known ones observed in abdominal and vaginal hysterectomies, especially the damage to bladder and ureters [7].

The most common complication of laparoscopic hysterectomy is urinary tract injury with a frequency reported between 0.37 to 2.8%, it is imperative that surgeon has a thorough knowledge of pelvic anatomy and strict adherence to surgical principles will help to prevent urinary tract injuries [8].

Technique of lateral window creation and bladder dissection

Under anaesthesia patient is placed in dorsal lithotomy position, urinary catheter is inserted, standard 4 port placement is done. Upon introduction of telescope a comprehensive abdominal and pelvic survey is done. Any omental adhesions needs to be separated, we use uterine manipulator, it will help in manipulation the uterus and also using traction. Surgery starts with coagulating and cutting of round ligament approximately 3 cm from cornu, and then fallopian tube and utero-ovarian ligament is cut from the uterus. We then separate the leaves of broad ligament and holding the anterior leaf of broad ligament with grasper and going medial to uterine vasculature a space or window is created between posterior bladder wall and lower uterine segment or at cervico-vesical fascia. As far as possible we resort to sharp dissection using harmonic or shearer, then after adequate space is developed between bladder and cervix same steps were repeated from right parametrical space, this will free the bladder from lateral aspects leaving only central adhesions and that can be separated safely under vision. We resort to standard steps of hysterectomy then [9].

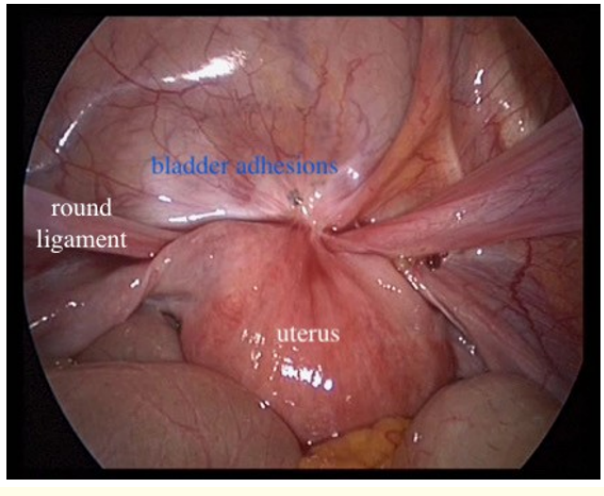

Figure 1: *Bladder adherent to lower uterine segment.*

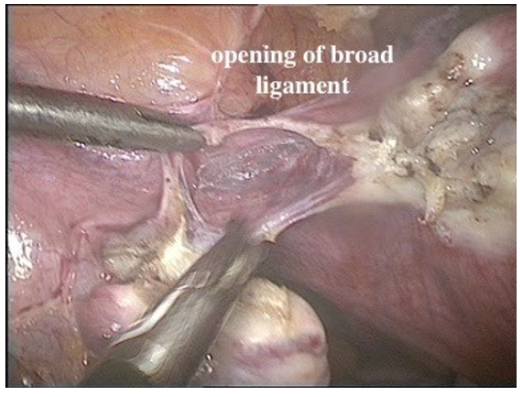

Figure 2: *Cutting to round ligament and opening of broad ligament.*

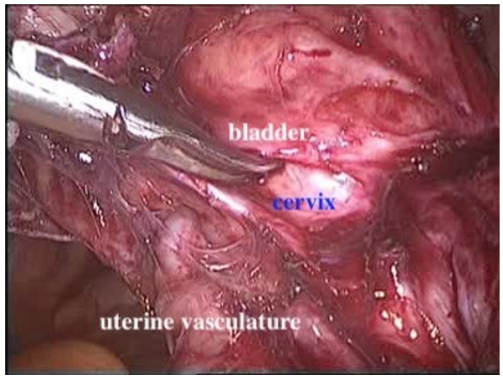

Figure 3: *Creation of lateral window medial to uterine vasculature.*

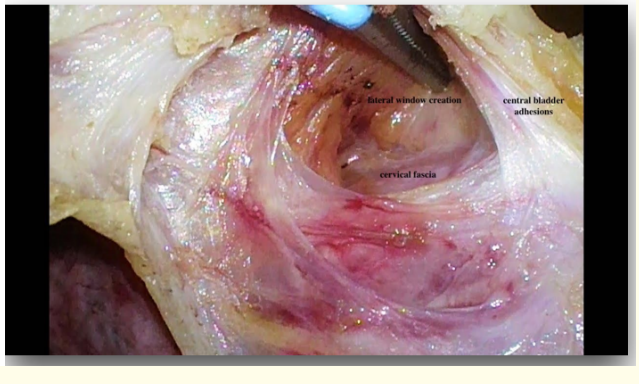

Figure 4: *Dissection in cervivo vaginal space, only central adhesions left.*

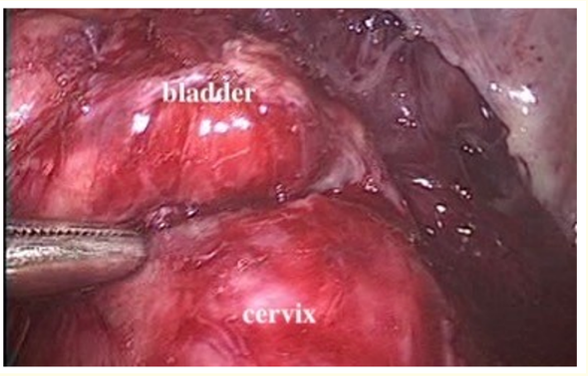

Figure 5: *Completion of bladder dissection.*

By starting the bladder dissection from relatively untouched avascular plane injury to the bladder can be prevented more or so in cases of previously operated patients and in cases of endometriosis. Due to close proximity of bladder and ureters to dissection field during hysterectomy, safeguarding test structures becomes challenge in setting of distorted anatomy or by adhesions of previous surgery. Thus by using lateral window technique of bladder dissection trauma to bladder can be prevented and this technique is found effective for patients with prior cesarean deliveries it also may be applied to any patients who has a scarred anterior cul-de-sac including in patients with history of previous myomectomy cesarean scar defect or endometriosis.

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