



Laparoscopic Nerve-Sparing Radical Hysterectomy based on Precise Anatomy

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Editorial

Type III hysterectomy is performed in most patients with early stage cervical cancer currently. Though the technique allows for the optimal effect, it may give rise to severe bladder dysfunction and colorectal motility disorders. To minimize sympathetic and parasympathetic dysfunction, the superior hypogastric plexus and pelvic splanchnic nerve should be preserved. Because the nerve fibers are hard to be visualized directly and there are no remarkable anatomical landmarks in surgical dissection procedures, nerve-sparing radical hysterectomy should be modified so as to identify the precise anatomical information directing the technique for optimal preservation of bladder function.

Under the magnified view of the laparoscope, four fascial spaces surrounding the cervix can be distinguished, which are as follows: the para-vesical space, the para-rectal space, the Okabayashipara-rectal space and the fourth space. With fascial space dissecting technique based on the spaces mentioned above, the tissue containing nerves could be protected and preserved as much as possible.

The hypogastric nerve is located in the para-rectal space, near the rectum and it runs parallels to the utero-sacral ligament. After incision of the posterior leaf of the broad ligament, the superficial layer of the utero-sacral ligament should be dissected bluntly and pushed laterally to the pelvic wall. Then the para-rectal space was developed and the space between the recto-uterine ligament and meso-ureter was opened.

The fourth space should be located between the lateral side of the vagina and a deep layer of the vesico-cervical ligament with the bundle of nerve fiber and vessels. Development of the fourth space was completed when it extended to the vesico-ureteric junction. We were able to find the posterior leaf of the vesico-cervical ligament running between para-vaginal space and para-vesical space. In order to preserve the vesical nerve branch, severing the separated deep vein and its branches in the posterior leaf of the vesico-cervical ligament and the cardinal ligament and preserving the tissue behind the veins was important. Subsequently, we pushed the nerve bundle laterally with the remaining posterior part of the vesico-cervical ligament to expose the para-vaginal space and initiated the resection of the cardinal ligament from the paracolpium and the uterine branch from the inferior hypogastric plexus, detaching it from vaginal fornix. At this point, the para-rectal space was joined to the para-vaginal space and the nerve fibers from the hypogastric plexus and pelvic splanchnic nerve that run to the bladder were preserved. After development of the pre-rectal space, the utero-sacral ligament and rectal pillars were identified between the pre-rectal and the para-rectal spaces. We continually separated the medial utero-sacral ligament from the lateral nervous fibers. By pushing laterally on the hypogastric plexus bundle, the medial utero-sacral ligaments were resected and the pre-rectal space joined to the para-rectal space, while the lateral part with the terminal part of the hypogastric nerve and the cranial part of the inferior hypogastric plexus were saved.

The fascial space dissecting technique based on the precise anatomy makes it possible and feasible to preserve the sympathetic and parasympathetic nerves as much as possible and no need to separate them as nerve fibers.

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