—Preliminary Note—

A new radical cystectomy for advanced or multifocal urinary bladder cancer

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The presence of metastasis of advanced urinary bladder carcinoma to regional lymph nodes justifies the prognosis¹⁾. Whenever patients with a metastasis of regional lymph nodes undergo radical cystectomy with pelvic iliac lymph node dissection, the prognosis is very poor for a high pelvic recurrence and distant metastasis^{1,2)}. It has been suggested that regional lymph node dissection may be insufficient²⁾. The purpose of our new radical cystectomy is a complete pelvic iliac lymph node dissection and cystectomy with vesical fascia for advanced urinary bladder carcinoma.

From November 1985 to July 1986 4 patients underwent new radical cystectomy for urinary bladder cancer at the Nippon Medical School Hospital. Urinary diversion was performed with tubeless uretero cutaneostomy.

1. Anterior approach

The peritoneum, urinary bladder and prostate are swept off from the anterior abdominal wall, pubic symphysis and M. levator ani. The vas deferenses and spermatic cords are ligated and divided near the inguinal ligament.

2. Lateral approach

The sheath of external iliac vessels is swept off from the lateral wall. In this process the genitofemoral nerve and obturator nerve are exposed. All fibroareolar and lymphatic tissue of the external iliac sheath is swept off 1cm above the bifurcation of the aorta superiorly to the inferior epigastric artery distally. The external iliac vessels and obturator nerve are extracted laterally and the internal iliac vessels are swept off. Then the first and big branch of the posterior portion of the internal iliac vessels, the superior gluteal artery and vein are identified. The internal iliac vessels are ligated and divided distally to the superior gluteal vessels if possible. The obturator artery and vein are ligated and divided at the obturator foramen. The iliolumbar vessels are ligated and divided. The first sacral nerve should be identified and should be protected, and the inferior gluteal artery and vein are ligated and divided. The internal pudendal artery and vein are ligated and divided. Following this procedure, the bladder with vesical fascia and all lymph tissue of the external and internal iliac vessels are swept off from the lateral and posterior pelvic wall.

The ureters are mobilized and dissected at the distal portion. Once the peritoneum is opened, the peritoneum containing the vesical fascia is cut off and divided posteriorly along the margin of the rectum and at the level of the common iliac artery superiorly and extended to cul-de-sac inferiorly. The hypogastric nerves should be protected from injury if possible.

3. Approach to the lateral and posterior pedicle

After the denonvillier's fascia is cut between the seminal vesicles and rectum, a finger is advanced to the apex of the prostate along the prostate. The endopelvic fascia is cut sharply along the prostate. The finger is passed through between the prostate and rectum, and the prostate and seminal vesicles are detached from the rectum. Lateral pedicles of pelvic plexus and posterior pedicles of the middle rectal artery and vein are ligated and divided.

4. Division of puboprostatic ligaments and removal of the specimen

The puboprostatic ligaments and Santorini venous plexus are ligated and divided. The urethra are separated through the perineal incision. The urinary bladder, prostate, seminal vesicles, urethra and all lymph-bearing tissue are totally removed.

The 4 patients' ages ranged from 63 to 75 years. All the 4 patients were successfully undergone. Total regional pelvic iliac lymph node and the vesical fascia were removed by en bloc radical cystectomy. The urinary bladder, prostate and urethra were removed en bloc with the vesical fascia, regional peritoneum, external iliac vessel sheath and iliac vessel branches. In three of the 4 patients the unilateral superior gluteal arteries were sacrificed on account of excessive bleeding, however there was no complaint of buttock claudication. Blood loss ranged from 1300 to 4000ml, 2475ml on average.

Complications with new radical cystectomy were small bowel obstruction in one case, prolonged leakage of lymphatic fluid in two cases and stool incontinence in one case. Stool incontinence disappeared within a month after surgery. One of the 4 patients had multiple metastasis in iliac lymph nodes and vesical fascia (**Fig. 1**).

The lymph node metastasis rate of radical cystectomy ranged from 7 to 35 per cent^{1,3)}. The importance is emphasized of performing radical cystectomy with lymph node dissection

Fig. 1 Mapping examination of specimen with lymph node metastasis (TCC, pT3, N2, M0)

Many instances of micrometastasis (▲) could be recognized in the vesical fascia and lymph node. UL: Ulcer of tumor, N: Lymph node, V: Vas deference, U: Ureter. Black area (▲) is cancer tissue.

Fig. 2 The vesical fascia of the autopsy specimen (dotted line area) is shown

The vesical fascia the urinary bladder is connected posteriorly to the rectum through the iliac vessels.

B: Bladder, P: Prostate, R.: Rectum,
U: Urethra, EIA: External iliac artery

in advanced bladder carcinoma^{2,3)}. High stage groups without lymph nodes metastasis had 60 per cent high pelvic local recurrence rate. High stage groups with lymph nodes metastasis had 70 per cent pelvic local recurrence rate. As a result, it is clear that local lymph node dissection may not be sufficient for advanced bladder carcinoma, and that the lymph node should be removed completely²⁾. Routine radical cystectomy with lymph node dissection might not be complete in the removal of the vesical fascia which contains the trunk of the inferior vesical artery and vein and lymphatic tissue. The vesical fascia, which is a fatty tissue and joins with the Gerota fascia, is a very important region as a neurovascular corridor of vessel, nerve and lymph (**Fig. 2**). The method whereby the iliac lymph node and vesical fascia of the vesical neurovascular corridor are completely removed is sufficient for radical cystectomy.

In this content new radical cystectomy (Hiraoka's method) may be useful to remove completely the iliac lymph node and vesical fascia and to prevent local recurrence with favorable life expectancy in this disease condition.

References

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