CLINICAL CASE

Extended bilateral pelvic lymphadenectomy in cancer of the penis: technical aspects


Urology Division, Hospital General “Dr. Manuel Gea González”, Mexico City, Mexico

Abstract  The most important prognostic factor in cancer of the penis is the presence of lymph node metastases and they are detected in 28% to 64% of the cases. Lymphadenectomy is curative in 75% of the patients presenting with one or 2 positive lymph nodes and in 20% of the patients with pelvic invasion. Thus it is the most effective treatment for eradicating lymph node metastases in selected patients. A 49-year-old man presented with an indurated, exophytic, 3.5 cm vegetative tumor in the glans penis and a right inguinal increase in volume. A biopsy was taken that reported invasive squamous cell carcinoma. Partial phallectomy and bilateral extended superficial inguinal lymphadenectomy were performed. The histopathologic study reported moderately differentiated squamous cell carcinoma measuring 3.7 cm that affected the corpus spongiosum, and disease-free margins. There was positive lymph node invasion; 8 right inguinal lymph nodes were found, one of which was positive and 5 left inguinal lymph nodes were identified, one of which was positive. Laparoscopic bilateral extended lymphadenectomy was performed, with 2 positive right obturator lymph nodes. Cancer of the penis is a disease with an unfavorable outcome. Surgery is essential for attempting to cure the patient with lymph node invasion and it improves outcome, reaching a 5-year survival rate above 60%; in the cases of pelvic lymph node invasion that rate is 20%. The laparoscopic approach has advantages in relation to morbidity and pain control, as well as an adequate oncologic result.
Extended bilateral pelvic lymphadenectomy in cancer of the penis: technical aspects

Introduction

Squamous cell cancer of the penis is a rare pathology in the developed countries. It represents 0.4% to 0.6% of all neoplasias. The most important prognostic factor is the presence and extension of lymph node metastases. They are located in 28% to 64% of the patients at the time of diagnosis and 47% to 85% of the cases are confirmed; 25% of cases will present with metastases without palpable lymph nodes.

Due to the fact that the 5-year survival rate is reduced to less than 50% when there is lymph node invasion, lymphadenectomy plays a very important role in treatment. It is curative in 75% of the cases in which there are one or 2 invaded lymph nodes and in 20% of the cases with pelvic invasion. Thus bilateral ilioinguinal lymphadenectomy is the most effective treatment for eradicating lymph node metastases. However, despite its being the recommended management, it is not exempt from complications. Its reported morbidity is between 24% and 87% and includes infection, flap necrosis, wound dehiscence, lymph edema, or lymphocele and has a procedure-related mortality rate of 1%-3%.

Techniques have been developed for limiting this morbidity and mortality. Catalona proposed a modified lymphadenectomy to reduce morbidity and conserve the therapeutic benefit by excluding the dissection of the lymph nodes that are lateral to the femoral artery and caudal to the oval fossa, sparing the saphenous vein and not transposing the sartorius muscle. Flap necrosis of 2.5% and lymphedema of 3.4% have been reported with this technique.

Another option that reduces the percentage of overtreatment of these patients and decreases its associated morbidity is sentinel lymph node biopsy, originally described by Cabañas. Currently, through dynamic marking, we can locate the first group of nodes and identify the presence or absence of tumor cells, carrying out the lymphadenectomy accordingly.

Case presentation

A 49-year-old married businessman, Catholic, resident of Mexico City with a past medical history of appendectomy 22 years earlier, had disease onset in April 2012. A 3.5 cm vegetative tumor appeared on the glans penis that was indurated, exophytic, and painless. He later presented with a progressive increase in volume in the right inguinal area. Fine needle aspiration biopsy was done in the private medical sector that reported invasive squamous cell carcinoma. The patient underwent partial phallectomy and bilateral extended superficial inguinal lymphadenectomy. Daseler zones I, IV, and V, which are the sites of greater metastasis frequency, were evacuated. The histopathologic study reported moderately differentiated squamous cell carcinoma. The tumor measured 3.7 cm, was flat and ulcerated, and affected the corpus spongiosum. Surgical margins were free from tumor, lymph node invasion was positive, and vascular and perineural invasion was not identified. Of 8 right inguinal lymph nodes, one was reported as positive, and of 5 left inguinal lymph nodes one was also reported as positive.

Surgical technique

The patient was placed in the dorsal decubitus position and the Veress needle was introduced into the umbilicus. The pneumoperitoneum was created with CO₂ insufflation at 12 mmHg. A 12 mm trocar and the laparoscopic camera were placed at 1 cm below the umbilicus. A 10 mm working trocar was placed at the midline under direct vision and the second and third 5 mm working trocars were placed laterally at approximately 7 cm to the left and right. The procedure began with an incision in the parietal peritoneum and right spermatic cord dissection. The vas deferens was identified, ligated with titanium clips, and cut (fig. 1). Traction was applied to the duct and dissection of the common iliac vein was begun (fig. 2). The adventitia was dissected, resecting...
the perivascular tissue; the circumflex vein was dissected, tied, and cut; the inguinal ligament was located at the upper edge, as were the ligament of Cooper and the pubic tubercle, and the lymph node tissue was removed. Once this was done, the iliac vein was separated and dissected toward the iliac artery in a posteroinferior direction. The obturator nerve was located and the lymph nodes were removed from the obturator fossa. Upon removal of the lymph node tissue, the iliac vein, obturator nerve, inguinal ligament, and the ligament of Cooper could be adequately identified (fig. 3), completing the pelvic lymphadenectomy. The same procedure was performed on the contralateral side and closed drains were left in both pelvic regions. The postoperative progression of the patient was adequate, and he was released from the hospital 4 days after surgery. The histopathologic study reported 2 obturator lymph nodes positive for metastasis (T2G2N0M0) and the patient was referred for adjuvant therapy to begin chemotherapy and radiotherapy.

Discussion

The advent of laparoscopic surgery has permitted faster recovery, less postoperative pain, and in the case of pelvic lymphadenectomy, less procedure-related morbidity, particularly regarding lymphocele and intraoperative blood loss,22,23 in addition to better visualization of the anatomic structures. We therefore consider that the laparoscopic approach for the combined performance of extended pelvic lymphadenectomy and modified inguinal lymphadenectomy in high risk patients is safer and results in less morbidity than the more commonly used techniques.

Conclusions

Squamous cell cancer of the penis is a pathology with an unfavorable outcome in the cases that present with metastases and therefore early treatment is essential. Surgery, as an integral part of treatment, is fundamental for attempting to cure the patient with localized and locoregionally disseminated lymph node disease; it improves outcome, enabling a 5-year survival rate of more than 60%; the same survival is achieved in 20% of the cases with pelvic lymph node invasion. The laparoscopic approach has certain advantages in relation to morbidity and recovery, in addition to offering adequate oncologic results.

Conflict of interest

The authors declare that there is no conflict of interest.

Financial disclosure

No financial support was received in relation to this article.

References