

# Videoendoscopic Inguinal Lymph Node Dissection: Our First Experience

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## ABSTRACT

**Background:** Inguinal lymph nodes dissection has been the mainstay treatment for penile squamous cell carcinoma with resectable inguinal lymph nodes metastasis. Traditionally, inguinal lymph node dissections were performed with a classical open approach with high complications and morbidity rate. We are reporting our first experience with videoendoscopic inguinal lymph nodes dissection as an alternative to the classic open approach in our center.

**Case Presentation:** This article reports a case of squamous cell carcinoma of the penis. A case report of post partial penectomy with pT3N2M0 squamous cell carcinoma of the penis and palpable bilateral inguinal lymph nodes in a 52-year-old male. In this patient, we perform our first experience with videoendoscopic inguinal lymph nodes dissection as an alternative to the traditional classic open approach inguinal lymph node dissections.

**Conclusions:** Videoendoscopic approach for inguinal lymph nodes dissection in penile cancer is feasible and has been demonstrated to have a better outcome on complications & morbidity compared to the traditional open approach. In the end, we propose that the videoendoscopic approach, if available, could be the main choice for inguinal lymph nodes dissections for the future.

## INTRODUCTION

Inguinal lymph nodes dissection has been the mainstay treatment for penile squamous cell carcinoma with resectable inguinal lymph nodes metastasis. Traditionally, inguinal lymph node dissections were performed with a classical open approach with high complications and morbidity rate (1). We are reporting our first experience with videoendoscopic inguinal lymph nodes dissection as an alternative to the classic open approach in our center.

Our patient was a 52-year-old male post partial penectomy with pT3N2M0 squamous cell carcinoma of the penis and palpable bilateral inguinal lymph nodes. We performed videoendoscopic inguinal lymph nodes dissection. The patient was positioned in supine with the legs abducted. The femoral triangle was drawn to indicate the surgical field, which includes the area between the inguinal ligament (superiorly), the sartorius muscle (laterally), and the adductor longus muscle (medially). Initial incision was made 25 cm below the inguinal ligament in the midline, and the initial working space was created through blunt dissection. Port for the camera was then inserted and the working space insufflated to 12 mmHg with CO<sub>2</sub>. We used a 30-degree

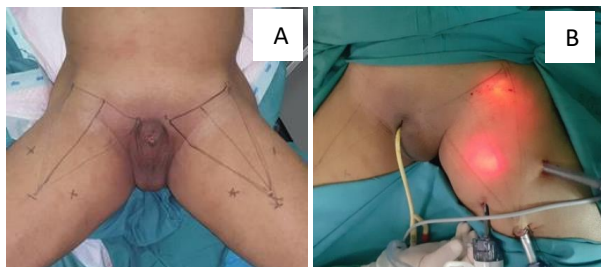
camera, one 10 mm port, and one 5 mm port for dissection. Four lymph nodes were harvested from each side. Postoperative bed rest and elastic bandage for both legs was applied. Vacuum drain was placed and removed on postoperative day three, and the patient was discharged on the following day. Follow up examination on outpatient clinic revealed acceptable cosmetic without remarkable complication. The pathological report confirmed positive metastasis from both sides. The patient then underwent adjuvant chemotherapy.

## CASE PRESENTATION

We are presenting a 52-year-old male patient with squamous cell carcinoma of the penis. Partial penectomy had been done previously, and bilateral inguinal lymph nodes were palpable. CT scan confirmed enlargement of the inguinal lymph nodes with the largest diameter of 2 cm. The patient was staged as pT3N2M0 squamous cell carcinoma of the penis. The patient was then informed, and bilateral inguinal lymph nodes dissection was planned.

The patient was positioned in supine with the legs abducted to make space for the operators and

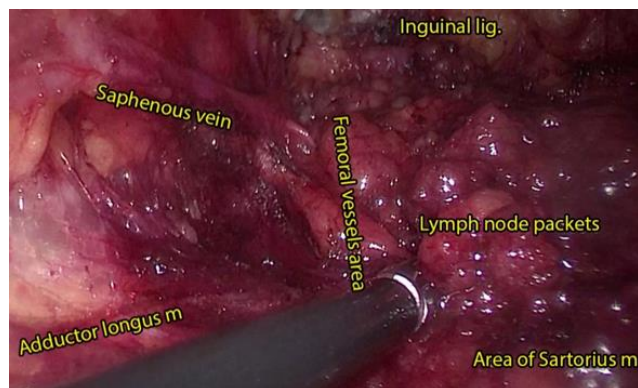
assistants. The trochar placement design was made in both inguinal regions. Vertical lines were made 15-25 cm from the pubic tubercle and superior anterior iliac crest. The femoral triangle was drawn to indicate the surgical field, which included the area between the inguinal ligament (superiorly), the sartorius muscle (laterally), and the adductor longus muscle (medially).



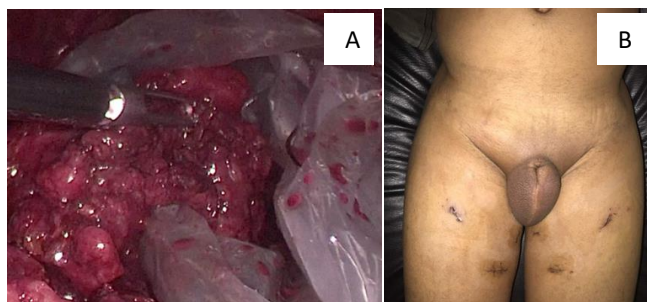
**Figure 1.** (A) Patient positioning; (B) Port placement

Dissection of the left inguinal was performed first. The initial incision was made 25 cm below the inguinal ligament in the midline, and the initial working space under the fascia lata was created through blunt dissection using the surgeon's finger. A port for the camera was then inserted, and the working space was insufflated to 12 mmHg with CO<sub>2</sub>. A 30-degree camera was used. A 10 mm port was then inserted superolaterally, and another 5 mm port was inserted superomedially. Dissection was performed superiorly up to the level of the inguinal ligament. The femoral vessels and saphenous vein were identified, the perforating branches of the vessels were ligated and divided. Multiple lymph nodes were identified and dissected. A total of 8 lymph nodes were harvested (4 from the right side and 4 from the left side). The lymph nodes were extracted through the 10 mm port. The sartorius muscle and the adductor longus muscle were approximated and sutured with one Vicryl 4-0, endoscopically. A vacuum drain was applied, and the port wounds were closed with subcuticular absorbable sutures.

A similar procedure was carried out for the right inguinal side. Postoperative bedrest and elastic bandage for both legs were applied. The vacuum drain was removed on postoperative day three and the patient was discharged the following day. Follow up examination on outpatient clinic revealed acceptable cosmetic without remarkable complication. The pathological report revealed positive squamous cell carcinoma with metastasis in two lymph nodes specimens, one from the right side and one from the left side (both superficial lymph nodes). Adjuvant chemotherapy regiment of Cisplatin, Methotrexate, and Bleomycin (CMB) was then administered to the patient. During the course of chemotherapy (after 2 cycles of CMB), the patient developed local recurrence and infection. He then decided to discontinue all treatments and died 6 months after the lymphadenectomy.



**Figure 2.** Endoscopic view of regional surgical anatomy (left side)



**Figure 3.** (A) Specimen extraction; (B) Postoperative wound

## DISCUSSION

Inguinal lymph nodes dissection has been the mainstay treatment for penile cancer to this day. The standard open technique has been used with known wound-related complications. Common complications include wound infection, lymphedema, lymphocele, and flap necrosis. Faut et al reported morbidity rate of 51% and concluded that perioperative protocol changes did not affect morbidity outcome in open inguinal lymph nodes dissections (1). This warrants the necessity for an alternative to standard open dissection technique.

Videoendoscopic inguinal lymph nodes dissection has been performed and reported in the last decade, with the first one reported as early as 2006 by Tobias-Machado et al (2). Since then, few studies have also reported successful attempts of videoendoscopic inguinal lymph nodes dissections with good results. In terms of skin complications, the videoendoscopic approach was far more superior compared to the open approach with reported complication rate as low as zero percent in several reports (3-5). Lymphatic related complication (such as lymphedema and lymphocele) rate was also reported to be as low as 6% (3).

In our case, postoperative suction drains were removed on postoperative day 3 and the patient was discharged on postoperative day 4. In other studies, postoperative suction drains were removed between 4-8 postoperative days (Pahwa et al) and up to 5-10

postoperative days (Pompeo et al) (4,6). Hospital stay was reported to be as short as 1 postoperative day (6). In our patient, two positive lymph nodes were identified, of which number is comparable to other studies mentioned above.

Kumar et al compared the outcome of videoendoscopic approach versus open approach for inguinal lymph nodes dissection in 42 patients. They demonstrated that videoendoscopic approach had a lower rate of wound complications (6% compared to 68% of open approach) and leg lymphedema (3% compared to 37% of open approach) (7). With similar mean operative time, the number of positive lymph nodes specimens was also significantly higher in the videoendoscopic group.

## CONCLUSION

Videoendoscopic approach for inguinal lymph nodes dissection in penile cancer is feasible and has been demonstrated to have a better outcome on complications & morbidity compared to the traditional Open approach. In the end, we propose that the videoendoscopic approach, if available, could be the main choice for inguinal lymph nodes dissections for the future.

## DECLARATION

### Competing Interest

The authors affirm no conflict of interest in this study.

### Acknowledgment

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## REFERENCES

1. Faut M, Heidema RM, Hoekstra HJ, van Ginkel RJ, Been SL, Kruijff S, et al. Morbidity after inguinal lymph node dissections: it is time for a change. *Ann Surg Oncol*. 2017;24:330-339.
2. Tobias-Machado M, Tavares A, Molina WR Jr, Zambon JP, Medina JA, Forseto PH Jr, et al. Video endoscopic inguinal lymphadenectomy (VEIL): initial case report and comparison with open radical procedure. *Arch Esp Urol*. 2006 Oct;59(8):849-52.
3. Russell CM, Salami SS, Niemann A, Weizer AZ, Tomlins SA, Morgan TM, et al. Minimally invasive inguinal lymphadenectomy in the management of penile carcinoma. *Urology*. 2017 (From <http://dx.doi.org/10.1016/j.urology.2017.04.022>).
4. Pahwa HS, Misra S, Kumar A, Kumar V, Agarwal A, Srivastava R. Video Endoscopic Inguinal Lymphadenectomy (VEIL) -a prospective critical perioperative assessment of feasibility and morbidity with points of technique in penile carcinoma. *World J Surg Oncol*. 2013;11:42.
5. Chaudari R, Khant SR, Patel D. Video endoscopic inguinal lymphadenectomy for radical management of inguinal nodes in patients with penile squamous cell carcinoma. *Urol Ann*. 2016;8:281-5.
6. Pompeo A, Tobias-Machado M, Molina WR, Lucio J, Sehr D, Pompeo AC. Extending boundaries in minimally invasive procedures with simultaneous bilateral video endoscopic inguinal lymphadenectomy (veil) for penile cancer: initial Denver health medical center and ABC school of medicine experience and surgical considerations. *BJU Int*. 2013; 39(4):587-592.
7. Kumar V, Sethia KK. Prospective study comparing video-endoscopic radical inguinal lymph node dissection (VEILND) with open radical ILND (OILND) for penile cancer over an 8-year period. *BJU Int*. 2017;119:530-4