# Cervical Dysplasia (CIN III) Disseminating to the Fallopian Tube during Laparoscopic Hysterectomy

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Over the past decade, modern laparoscopic equipment and techniques have expanded the role of diagnosis and operative laparoscopy. Several studies have shown laparoscopy-assisted vaginal hysterectomy and total laparoscopic hysterectomy to be technically efficacious and well tolerated in benign gynecological diseases. In 1995 Kadar [1] predicted that as techniques improve, women with endometrial or cervical carcinoma who are surgical candidates will be treated laparoscopically rather than by traditional techniques. Indeed today, a growing number of patients are enjoying the advantages of minimal-access surgery, including patients with gynecological malignancies. While overall survival and recurrence rates with laparoscopy and laparotomy were reported to be similar, laparoscopy is associated with less morbidity and a shorter hospital stay [2]. However, the use of laparoscopy in cancer and pre-cancer states bears the potential complication of tumor spread and tumor implantation in different sites. Cases of tumor spread with distant metastases and port-site recurrence after laparoscopy were reported for different abdominal or pelvic carcinomas.

Several reviews on PSR in colorectal and ovarian carcinomas treated laparoscopically have been published [3], but only a few cases of PSR after laparoscopy for cervical carcinoma have been reported [4]. A PubMed review of the English-language literature did not identify any case of cervical intraepithelial neoplasia grade III disseminating to the fallopian tube in association with laparoscopy. We present a case of dissemination of CIN III to the fallopian tubes in the course of laparoscopic hysterectomy, assisted by the transvaginal uterine manipulator.

PSR = port-site recurrence

## PATIENT DESCRIPTION

A 61 year old woman, gravida 4, was referred for colposcopy following a routine Pap smear that was reported as a high grade squamous intraepithelial lesion. Colposcopy was not satisfactory and a biopsy from the transformation zone suggested CIN III. The patient underwent the LLETZ procedure (a large loop excision of the transformation zone). Histology revealed areas of CIN I and CIN III with suspicion of microinvasion.

Given the histology analysis, the patient's age and personal desire, it was decided that simple hysterectomy was an appropriate therapy. Two weeks after the histological diagnosis an uneventful total laparoscopic hysterectomy and bilateral saphingoophorectomy were performed with the transvaginal uterine manipulator (Rumi-system, Cooper Surgical, USA). Pelvic inspection revealed no further pathologies.

CIN III = cervical intraepithelial neoplasia grade III

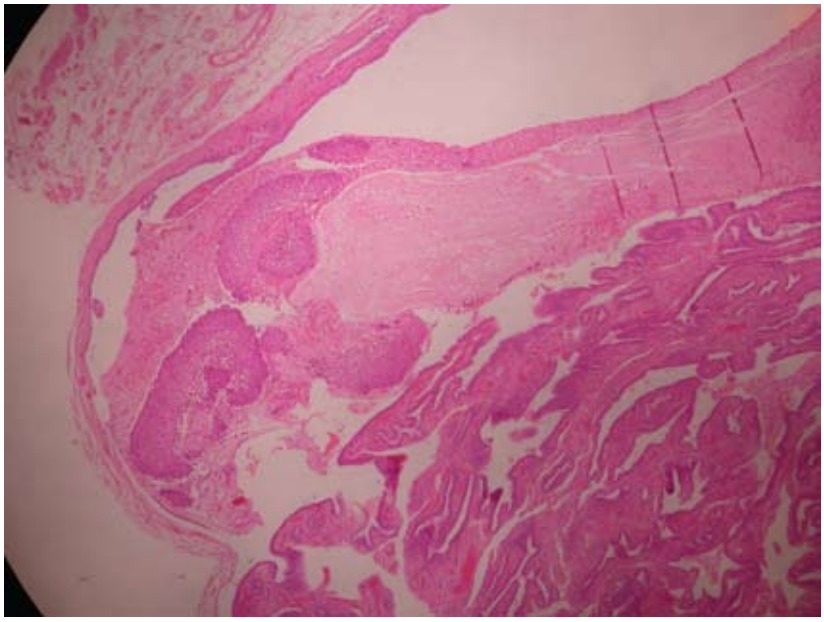
The patient made a rapid postoperative recovery and was discharged 36 hours after the operation. Histopathology of the surgical specimen revealed a cervix with a CIN III lesion measuring 1.8 cm in maximal length. CIN III was documented in the superficial epithelium and in the cervical epithelial crypts; exocervical surgical margins were also involved with CIN III. The uterus revealed endometrial atrophy with a focus of CIN III that was noticed in the isthmus; the parametrium, the ovaries and the left fallopian tube were normal. In the right fallopian tube chronic inflammation was noted and a 0.6 cm lesion of CIN III adjacent to the fallopian tube mucosa was documented. On high power field the lesion was located superficially in the ampular epithelium but no invasion was documented to the tubal stroma [Figure].

## COMMENT

Distal dissemination of cervical pathologies during laparoscopic surgeries was recently described [5]; however, we could find no report on CIN III lesions disseminating towards the fallopian tubes during laparoscopic hysterectomy.

Since the pathological assessment protocol in our institute starts with separation of the fallopian tubes from the uterus to assess them separately, it is unlikely that the presence of focus of CIN III is an artifact due to the pathological gross sectioning of the specimen. Most cervical pathology dissemination after laparoscopic procedures was described in the port sites. The suggested mechanism for these findings included contamination after unprotected tissue

High power field of the fallopian tube with CIN III lesion that was located superficially in the ampular epithelium. (hematoxylin and eosin, original magnification x 10).



extraction, manipulation of the surgical specimen or intraoperative rupture of the lower or cervical uterine segment [5].

The effect of $CO_2$ insufflation, the chimney effect, neoplastic ascites, washings or local conditions caused by the trocars were suggested as contributing factors for the presence of port-site metastases, but these phenomena are not well understood [5]. In the literature most cases of port-site metastasis occurred after extensive disease and the majority of the reports were of adenocarcinoma with ovarian origin [3].

We found no report of cervical dysplasia disseminating to the fallopian tube. In our patient, with no intraperitoneal disease and with the presence of a CIN III lesion in the uterine isthmus and in the fallopian tube after laparoscopic hysterectomy, it seems that the migration of the pathological cervical dysplasia can be attributed to the surgical procedure. We assume that the uterine manipulator, which is inserted in the cervical canal with direct contact to the cervical lesion, and the constant use of the instrument during the surgical procedure may be responsible for the described dissemination of the CIN III lesions.

Our case revealed dissemination of pathological tissue towards the uterine isthmus and the fallopian tube; however, other circumstances could reveal distal dissemination that could be more hazardous especially when the procedure is performed for more advanced malignancies of the cervix.

This report emphasizes the need for extra caution during laparoscopic hysterectomy for malignant and pre-malignant states of the cervix. Dissemination of the cervical pathological tissue can be prevented by tubal cauterization at the beginning of the hysterectomy as performed in laparoscopic hysterectomy for endometrial cancer, avoiding the use of a manipulator in cases of cervical carcinoma, and performing a thorough examination and washings of the pelvis and the abdomen at the end of the procedure.

In addition, our case raises the importance of a thorough pathological examination to detect such unexpected findings, which in some circumstances might worsen the patient outcome. Nonetheless, we believe that in pre-malignant cervical lesions there is no need to do a frozen section of other gynecological organs during the operation.

Although individual case reports of port-site recurrences and intraabdominal dissemination do not indicate the magnitude of this complication, they do serve to highlight a problem with laparoscopic surgery that should be discussed with the patient as part of the informed consent process. We believe that every gynecological oncologist should be familiar with this possible complication and should therefore consider the above mentioned precautionary steps in the laparoscopic management of malignant and pre-malignant states of the uterine cervix.

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## References

1. Kadar N. Laparoscopic management of gynecologis malinencies. In: Sanz LE, ed. Gynecologic Surgery. 2nd edn. Oxford: Blackwell Scientific, 1995: 291-307.
2. Roy M, Plante M, Renaud MC. Laparoscopically assisted vaginal radical hysterectomy. *Best Pract Res Clin Obstet Gynecol* 2005; 19: 377-86.
3. Ramirez PT, Frumovitz M, Wolf JK, Levenback C. Laparoscopic port-site metastases in patients with gynecological malignancies [Review]. *Int J Gynecol Cancer* 2004; 14: 1070-7.
4. Carmignani CP, Sugarbaker PH. Regional lymph node metastasis from port site implants after laparoscopic surgery. *Surg Endosc* 2004; 18: 1818-22.
5. Wang PH, Yuan CC, Lin G, Ng HT, Chao HT. Risk factors contributing to early occurrence of port site metastases of laparoscopic surgery for malignancy. *Gynecol Oncol* 1999; 72: 38-44.