

# Usefulness of Disposable Skin Biopsy Punch for Cervical Occlusion after Cervical Conization

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## Abstract

Cervical occlusion is a rare but serious complication after conization of the uterine cervix. We report on a 69-year-old woman with cervical intraepithelial neoplasia (CIN) 2, who successfully underwent follow-up biopsy of an occluded cervical canal after conization using a disposable skin biopsy punch. The disposable skin biopsy punch was inserted into a slight dimple, which was considered a uterine os, in the direction of the cervical canal, and a sample of tissue was obtained from the occluded portion. This procedure was performed without anesthesia and was completed uneventfully. Histological examination of the excised tissue revealed CIN 3. In addition, the procedure resulted in recanalization of the occluded cervical canal. The occlusion was limited in the external portion of the cervical os and attributed to adhesion of scar tissue during the healing process. Our experience suggests that a disposable skin biopsy punch can be used for follow-up biopsy and recanalization in patients with cervical occlusion after conization as a less invasive approach.

**Keywords:** Cervical occlusion, conization, disposable skin biopsy punch, recanalization

## INTRODUCTION

Cervical occlusion is a rare but important cause of serious complications after cervical conization.<sup>[1-6]</sup> In premenopausal women, such major complications include retrograde menstrual flow, hematometra, chronic pelvic pain, and infertility.<sup>[5]</sup> These symptoms sometimes negatively affect their long-term quality of life. Moreover, occlusion also leads to unsatisfactory follow-up biopsy and makes histological diagnosis difficult.<sup>[2]</sup> On the other hand, for postmenopausal women with neither previous history of abnormal cytology nor symptom, further examination and treatment might generally not be required.

A disposable skin biopsy punch can be used to obtain a columnar-shaped specimen, which is mainly used in dermatological biopsies. In the field of gynecology, there are a few reports describing the diagnostic utility, safety,

and accuracy of a disposable skin biopsy punch for obtaining biopsy samples of the uterine cervix.<sup>[7,8]</sup> However, to our knowledge, there have been no reports stating the usefulness of this instrument for the management of cervical occlusion after conization. Here, we report on a case of a 69-year-old woman successfully diagnosed with cervical intraepithelial neoplasia (CIN) 3, who was recanalized using a disposable skin biopsy punch on the occluded cervical canal after conization.

## CASE REPORT

A 69-year-old postmenopausal woman, gravida 3, para 3, was referred to our hospital due to atypical squamous cells – cannot exclude a high-grade squamous intraepithelial lesion detected during uterine cancer screening. The squamocolumnar junction was not detected via colposcopy,

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so it was difficult to obtain effective findings. Three months later, the cytological diagnosis was changed to high-grade squamous intraepithelial lesion. Therefore, cervical conization using the Shimodaira–Taniguchi conization procedure was performed with a high-frequency surgical unit (MGI-202; Honest Medical, Tokyo, Japan). The histological diagnosis was CIN 2 with negative surgical margins, but careful follow-up was required due to the loss of most epithelia in the specimen. Unfortunately, 7 months after the surgery, the external uterine os was occluded. To examine tissue from the occluded cervical canal for follow-up biopsy, we tried cervical biopsy using a disposable skin biopsy punch with a diameter of 3 mm and a depth of 7 mm (Kai Disposable Biopsy Punches; Kai Industries, Gifu, Japan) [Figure 1]. First, we identified a dimple which was considered the external uterine cervical os during colposcopy. After confirming the site of the occluded external cervical os and the direction of the cervical canal by vaginal ultrasonography, we inserted a disposable skin biopsy punch into the cervical os in the direction of the cervical canal. This biopsy procedure resulted in re-opening the cervical canal. A tumor-like mass in the uterine endometrial cavity which did not exist 7 months ago was detected by ultrasonography at the same time, and we were also able to examine the uterine endometrium histologically. The entire procedure was performed without anesthesia and was completed uneventfully. Her pain was controlled only with a diclofenac sodium suppository. Cytologically, the surface of the occluded lesion showed no atypical findings, but a histological examination of the cervical tissue excised using the disposable skin biopsy punch revealed CIN 3 [Figure 2a]. Endometrial histology showed only normal epithelial cells, which was suggestive of a benign endometrial polyp. Because she wished to undergo definitive treatment, total abdominal hysterectomy was performed, and the CIN 3



**Figure 1:** Disposable skin biopsy punch instrument (Disposable Biopsy Punches®, Kai Industries, Gifu, Japan)

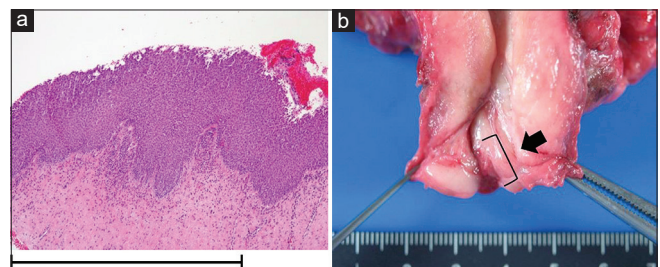
lesion was extracted together with the uterus with negative margins.

## DISCUSSION

We experienced a case successfully diagnosed with CIN 3 with the use of a disposable skin biopsy punch on an occluded cervical canal after conization. This procedure also resulted in cervical recanalization at the same time. This is the first report of the usefulness of a disposable skin biopsy punch for the management of cervical occlusion after conization. The disposable skin biopsy punch can be used as a novel and a less invasive approach for recanalization as well as for follow-up biopsies in patients with cervical occlusion after conization.

Cervical stenosis after conization is sometimes observed and its frequency varies from 3% to 17%, depending on the method of conization used and the definition of stenosis chosen,<sup>[1-5]</sup> however cervical occlusion is still a rare complication (<1%).<sup>[1,2,6]</sup> The risk factors for this condition are advanced age, the height of surgical excision, and hypoestrogenism due to postmenopausal state or breastfeeding.<sup>[2-5]</sup> Major resultant adverse effects are retrograde menstrual flow, hematometra, amenorrhea, dysmenorrhea, chronic pelvic pain, and infertility in premenopausal women, which consequently impacts their quality of life.<sup>[5]</sup> The occlusion also leads to unsatisfactory follow-up biopsies and endometrial examination.<sup>[2]</sup>

Some interventional devices have been used to prevent cervical stenosis.<sup>[5,9]</sup> However, it is inappropriate for patients desiring pregnancy, and long-term assessments still remain to be elucidated. In addition, once cervical occlusion occurs, surgical treatment is required. Several surgical techniques have been reported in the literature, including the use of laser treatment, micro-scissors, bipolar electrodes, and morcellators for re-canalization of a stenotic or occluded cervix.<sup>[5,10]</sup> However, most of these interventions are highly invasive and require general anesthesia.



**Figure 2:** (a) Histological examination of cervical tissue specimens excised by disposable skin biopsy punch revealed cervical intraepithelial neoplasia 3 (H and E). The length of the bar is 1 mm. (b) The extracted tissue of the uterus confirmed that there was no stenosis in another portion of the cervical canal. The arrow indicates a region resected by disposable skin biopsy punch

We opted for a disposable skin biopsy punch due to its previous reports, which have described the instrument's usefulness for obtaining cervical biopsy samples and equivalence to punch biopsy forceps for diagnosing cervical lesions.<sup>[7,8]</sup> In the case of our patient, the procedure was able to be performed on an outpatient basis without anesthesia and the postoperative course was complication free.

It was very interesting that additionally we successfully recanalized the occluded cervical canal via this procedure. This suggests that the occluded lesion was limited to the external side of the cervical canal. Histological examination of the extracted uterus proved that there was no further stenosis in other portions of the cervical canal [Figure 2b]. In this case, the occlusion was probably caused by adhesion of the scar tissue during the healing process, as has previously been reported.<sup>[6]</sup> Several types of cervical stenosis have been reported according to the location and extent, thus concluding that the optimal strategy may differ by the type.<sup>[10]</sup> The present case was categorized as type I (only involving the external cervical os). Our experience indicates that disposable skin biopsy punches are a less invasive alternative, especially for the management of type I stenosis or occlusion after conization, like the present case. In addition, in this procedure, vaginal ultrasonography is presumed to be useful for confirming the site of occluded external cervical os and the direction of the cervical canal. However, long-term efficacy of this procedure is unclear. Further research with a larger number of patients is necessary to confirm its long-term safety and tolerability.

### Ethical approval

This study was approved by institutional review board of Minoh City Hospital on Sep. 19<sup>th</sup>, 2018.

### Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient has given her consent for her images and other clinical information to be

reported in the journal. The patient understands that her name and initials will not be published, and due efforts will be made to conceal identity, but anonymity cannot be guaranteed.

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Nil.

### Conflicts of interest

There are no conflicts of interest.

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