Escharotic Treatment for ECC-positive CIN3 in Childbearing Years: A Case Report

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Abstract

A persistent human papillomavirus (HPV) infection of a high-risk type is necessary for cervical cancer to develop. The severity of the diagnosis, together with colposcopy findings, determines the standard for treatment, and ablative or excisional options may be recommended. Escharotic treatment, together with an oral, anticarcinogenic HPV protocol and a vaginal-suppository protocol, is an alternative treatment, especially for those women of childbearing age who are concerned about the possibility of obstetrical complications associated with the use of loop electrosurgical excision (LEEP). The aim of the current case study was to observe the effect of an ablative escharotic treatment for a woman with severe dysplasia, cervical intraepithelial neoplasia grade 3 (CIN3). A 28-y-old female visited the National College of Natural Medicine clinic to obtain suggestions for alternative treatments following a satisfactory colposcopy and a biopsy revealing a high-risk HPV effect, severe dysplasia CIN3, and a positive endocervical curettage (ECC). She refused the recommended standard of care, a LEEP, because of concerns about the potential for future obstetrical complications. As an alternative, she elected to receive an escharotic treatment at a frequency of 2 treatments/wk for 5 wk. In addition to the escharotic treatment, she followed an oral protocol consisting of vitamins and botanical medicine for 1 y and she completed a 12-wk regime of vaginal suppositories following the escharotic. The authors followed her for 2 y. The woman's Papanicolaou (Pap) test at the 6-mo follow-up revealed negative cervical cytology for intraepithelial lesion or malignancy, and her follow-up ECC was negative. Liquid-based Pap results were normal, and HPV testing was negative at her 1-y follow-up. Her Pap continued to remain normal at her 2-y follow-up. For women with high-grade cervical neoplasias and positive ECCs, with satisfactory colposcopies, escharotic treatment, accompanied by oral supplementation, holds promise as an effective alternative to LEEP and other excisional procedures.

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Human papillomavirus (HPV) is the most common sexually transmitted infection (STI) in the United States, accounting for 75% of the 20 million STIs reported yearly. Acquired by skin-to-skin contact, it is now estimated that nearly all sexually active persons will contract at least 1 type of HPV at some point in their lifetimes. Of the 100-plus HPV genotypes (types), 40 can cause infections of the genital area. Approximately 90% of these HPV infections are transient, asymptomatic, and resolve without treatment. Several, however, are considered high-risk strains accounting for persistent infections and more serious HPV-associated diseases, including cervical, anal, vaginal, vulvar, and penile cancers.[1-4] With more than 12 000 cases diagnosed annually in the United States, cervical cancer is the most common of the HPV-associated cancers. It affects roughly 8% of the female population and

results in fatalities in nearly one-third of the invasive cases of cervical cancer diagnosed yearly.[5,6]

A persistent HPV infection of a high-risk type is necessary for cervical cancer to develop. Approximately 12 high-risk HPV types can lead to cervical cancer, of which types 16 and 18 are the most oncogenic. The goal of cytology—Papanicolaou (Pap) testing—is to detect precancerous abnormalities of the cervix.[4] Cervical squamous intraepithelial lesions (CSIL) are stratified based on the degree to which cells have lost their uniformity and architectural orientation.[7] In 2012, the American Society for Colposcopy and Cervical Pathology (ASCCP) issued an updated consensus for the management of early detection of precancerous lesions, cervical intraepithelial neoplasia (CIN), and adenocarcinoma in situ (AIS).[4] Depending on a woman's age, cytology findings, and other risk factors, ASCCP recommends molecular testing for high-risk HPV, together with cytology, to increase sensitivity and identify those women with a high-risk HPV infection. Further investigation using colposcopy and biopsy may be recommended based on abnormal cytology, HPV testing, and individual risk factors. Histological characteristics of CIN are placed in a 3-tiered system based on severity. CIN1 is considered a low-grade lesion, while CIN2 and CIN3 are high-grade lesions. The severity of the diagnosis, together with colposcopy findings, determines the standard for treatment, and ablative or excisional options may be recommended. Ablative treatments conventionally consist of cryotherapy or laser ablation. Excisional procedures consist mainly of cold knife, laser conization, and loop electrosurgical excision (LEEP), also known as large-loop excision of the transformation zone (LLETZ).[4] Although LEEPs are shown to be equally as effective as ablative treatments,[8] they are associated with a higher risk of obstetrical complications.[9-11]

Cervical stenosis, preterm premature rupture of membranes (pPROM), and preterm delivery are the most common obstetrical complications associated with LEEP procedures.[9-11] The volume of tissue removed and a history of loop excision are independent predictors of cervical stenosis after LEEP, at an increased risk of 1.32% and 17.4%, respectively.[9] After a single LEEP procedure, a woman's risk of pPROM, with a subsequent preterm delivery (<37 wk), is 1.9% higher compared with untreated women.[10,11] For a woman with a history of LEEP, the risk of preterm delivery increases after 34 weeks and is directly related to the depth of previous excision(s), the number of LEEP procedures received, and multiple gestations.[10,11] Theoretically, excisional therapies compromise cervical integrity, with a subsequent decrease in tensile strength, by disruption of the cervical glands and stroma. This disruption may lead to a decreased ability to dilate properly during labor in the case of cervical stenosis, increase the potential for ascending infections and changes to the vaginal flora in cases of pPROM, and cause premature dilation in cases of preterm delivery.[9-11]

Escharotic treatment is an ablative therapy that has been used to treat cervical dysplasia. Historically, it was used before 2001 as a treatment option for CIN1 and an alternative treatment for those women with CIN2 and CIN3 who refused the excisional therapies that are the standard of care.[12] After ASCCP's 2001 consensus guidelines were published, local therapies, including ablative treatments, were no longer recommended in cases of CIN1. According to ASCCP's 2006 consensus guidelines, ablative therapies were considered acceptable in cases of CIN2 or CIN3 with a satisfactory colposcopy.[13] In 2006, inclusion of ablative therapies for women with CIN2 and CIN3 became particularly important as an option for women who had not completed their families.

Escharotic treatment, together with an oral, anticarcinogenic HPV protocol and a vaginal-suppository protocol, is an alternative treatment, especially for those women of childbearing age who are concerned about the possibility of obstetrical complications associated with the use of LEEP. This combined treatment was first studied in 1991 by Hudson,[14] who examined the combined use of escharotic treatment with botanical and nutritional oral supplementation and a vaginal suppository treatment for individuals with cervical carcinoma in situ. In Hudson's study, 4 of the 7 women treated showed ongoing remission after 1 year.

The largest study to date involved the use of an escharotic treatment combined with individualized treatment plans based on cytological and histological findings of cervical dysplasia.[15] Out of the 43 women treated, 38 returned to normal findings, 3 had partial improvements, and 2 were unchanged from initial diagnosis at the 2-year follow-up. Escharotic treatment was also examined in a 2009 case study, in which a woman received treatment for CIN2/3, with long-term remission reported at the 5-year follow-up.[16]

Escharotic treatment involves the topical application of an herbal escharotic agent to the lesion, which causes a burn on physical contact, thus destroying neoplastic growth. The abnormal tissue is subsequently sloughed off, and the resultant scab is known as an eschar.[16] Criticisms of escharotic treatments in medical literature originate from cases that were not under the care of licensed health care professionals with expertise in the areas of gynecology and alternative medicine, but rather these criticisms address cases in which individuals self-prescribed, independently purchased, and applied escharotic treatments available on the Internet. When performed by an appropriately trained medical provider, escharotic treatment accompanied by an oral anticarcinogenic protocol has been shown to have a positive outcome.[14-16]

This study was performed at the National College of Natural Medicine (NCNM) and the Helfgott Research Institute in Portland, OR. The purpose of the current case study was to explain the procedure and effect of an ablative escharotic treatment for a woman with severe

dysplasia, CIN3. Escharotic treatment holds promise as an alternative for women of childbearing age who are concerned about the potential obstetrical complications associated with excisional therapies, especially with LEEP. That said, the obstetrical complications of escharotic treatment are unknown.

The Case Study

A 28-year-old Caucasian female visited the NCNM clinic in September 2009 to obtain suggestions for alternative treatments because of her recent diagnosis of high-risk HPV-positive CIN3. Abnormal cytology results from her physician in August 2009 had revealed atypical squamous cells, and the practitioner had not been able to rule out a high-grade lesion (ASC-H). A satisfactory colposcopy and a biopsy revealed CIN3 (severe dysplasia) and positive endocervical curettage (ECC). A satisfactory colposcopy indicates that "the entire squamocolumnar junction and the margin of any visible lesion can be visualized with the colposcope."[4] Her risk factors for cervical dysplasia included a recent positive test for a high-risk strain of HPV and a 1-year history of oral contraceptive use. She became sexually active at age 24, had reported a total of 2 male partners in her lifetime, with 1 new male partner in the past 12 months. Neither she nor her partners had any known history of STIs. She was nulliparous, had never smoked, and did not have any family history of cervical cancer.[3]

The ASCCP recommends excisional treatment when CIN3 is specified.[4] Her physician suggested a LEEP per the standard of care and ASCCP's guidelines. Unsatisfied with this recommendation and concerned about the potential for future obstetrical complications, she visited the NCNM to gather information about alternative options, including the ablative escharotic treatment. The physician on staff also suggested a LEEP and stressed to her the risks associated with failure to undergo treatment or with delayed treatment. The woman refused the recommended surgical procedure and signed a form acknowledging refusal of medical treatment. As an alternative, the woman was provided with information about the escharotic treatment, and she opted to begin treatment in 2 weeks. The physician (1) instructed her to begin an oral, anticarcinogenic HPV protocol that day (Table 1), to be taken for 1 year; (2) scheduled 5 weeks of escharotic treatment for her (Figure 1); (3) instructed her to begin a vaginal-suppository protocol for 12 weeks upon completion of the escharotic treatment (Table 2); and (4) scheduled a 6-month follow-up Pap test and ECC for her.

Methods

The escharotic treatment protocol is a 4-step process, takes a total of approximately 20 minutes per visit, and requires 2 visits per week for 5 weeks (Figure 1). In this treatment, bromelain powder is first added to the cervix and kept clear of the surrounding vaginal wall. A light source is used after application and directed on the cervix for a total of 15 minutes to increase the temperature and potentiate enzymatic action. After the 15-minute period, bromelain is removed from the cervix using cotton applicators saturated with *Calendula officinalis* succus. Application of the escharotic preparation of 1.23 mL of zinc chloride solution mixed with 3.69 mL of *Sanguinaria* tincture is applied to the cervical tissue and left on for 1 minute; then it is removed with *C officinalis* succus. The escharotic treatment is completed by inserting 2 Vag Pack (Earth's Botanical Harvest, Sandy, OR, USA) suppositories against the cervix.

Bromelain is a crude extract derived from pineapple stems that contains proteinases that have been shown to promote antiedematous, anticoagulant, antimetastatic, anti-inflammatory, and fibrinolytic activities, among other properties.[17-19] It has been used orally as a complementary tumor therapy because of its upregulation of certain cytokines, specifically tumor necrosis factor-α and interleukin (IL)-1β, IL-6, and IL-8. Topically, it has been shown to achieve debridement of burn eschar without adverse effects or damage to healthy tissue.

Calendula extracts derived from the flower of that plant have been shown to have anti-inflammatory and demulcent properties.[20] In this protocol, it is used to remove and prevent further active effects of the prior substance and also to soothe and promote healing of the cervical tissue. *Sanguinaria*, or bloodroot, is an alkaloid derived from the root of *Sanguinaria canadensis* and other poppy *Fumaria* species.[21-23] It has been shown to induce apoptosis in cancer cells and has further antioxidant, anti-inflammatory, and antifungal effects.

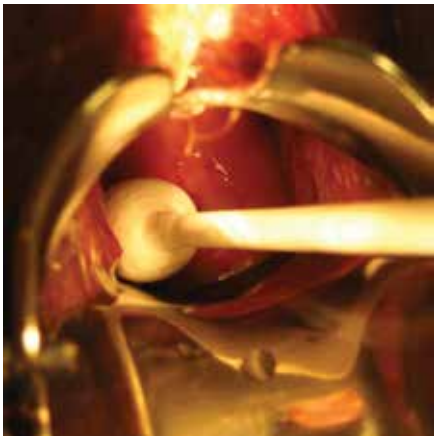
The woman in the physician's case study followed the oral, anticarcinogenic HPV protocol for 1 year and began it when the escharotic treatment began. This oral protocol was designed for her specifically because of its specific, combined immune-modulating, anticarcinogenic, and anti-HPV effects (Table 1).[26-37]

She also followed the vaginal suppository protocol for 12 weeks immediately upon completion of the escharotic treatment. Wise Women Herbals (Creswell, OR, USA) supplied the suppositories for the authors' case study.

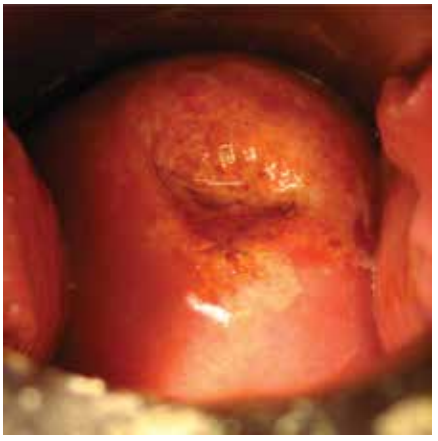
The treatments in the first 4 weeks consisted of thuja suppositories, for 6 days in a row with 1 day off, that alternated with healing suppositories for the same period. Weeks 5 to 12 consisted of inserting a green tea extract capsule as a suppository, using the same capsule as is taken orally, 2 times weekly. Evidence exists to support the fact that the polysaccharides in thuja have antiviral and immune modulating properties.[40] Healing suppositories are promoted as soothing overall to the cervical tissue.[20,30,31] Green tea capsules are used in this case topically for their anticarcinogenic properties (Table 2).[33,34]

Figure 1. Escharotic Treatment Protocol (performed in office)[41]

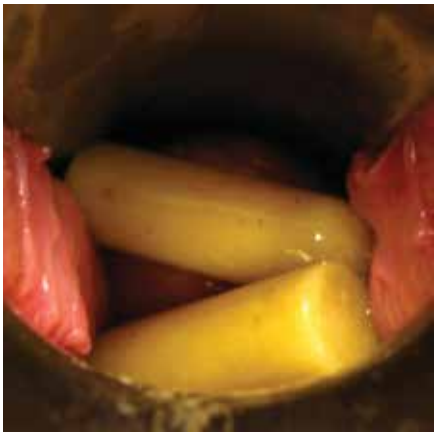
Step 1
Apply bromelian powder[a] to the cervix. Add light source and wait 15 min.



Step 2
Remove bromelain powder with cotton applicator saturated with *Calendula officinalis* succus.[b]



Step 3
Apply escharotic preparation (1.23 mL zinc chloride mixed with 3.69 mL of *Sanguinaria*[c] tincture) to the cervix. Leave on for 1 min, and then remove with the *Calendula officinalis* succus.



Step 4
Insert 2 Vag Pack[d] suppositories into the vagina, against the surface of the cervix.

[a]Bromelain contains proteolytic enzymes, which have antiedematous, anticoagulant, and antimetastatic properties. As part of the escharotic treatment, it is used to promote soft-tissue wound healing.[14-16]
[b]*Calendula officinalis* is known for its anti-inflammatory and demulcent properties.[17]
[c]*Sanguinaria canadensis* has antioxidant, antimicrobial, antifungal, antiangiogenic, anticancer, and escharotic effects.[18-20]
[d]This combination of herbs and vitamins has an antimicrobial action, specifically against HPV of the cervical tissues.[21,22] Vag Pack Vaginal Suppositories are supplied by Earth's Botanical Harvest (Sandy, OR, USA).

Table 1. Home Oral HPV[a]

Supplement	Dosage
Folic acid[26-28]	10 mg/d
Vitamin C[29]	6 g/d
β-Carotene, natural mixed carotenoids[30,31]	150 000 IU/d
DIM[32]	300 mg/d
Green tea extract[33,34]	500 mg/d
Vitamin E[35-37]	400 IU/d

Abbreviations: DIM = diindolylmethane.

[a]Based on emergent research since this study took place, the current protocol includes 400 mg of Berberine per day, although the optimum dosage is unknown at this time,[38] 500 mg of *Coriolus versicolor* per day,[39] and in the place of Folic Acid, 1 mg of Folate (as L-5-Methyltetrahydrofolate).[43,44]

Table 2. Home Vaginal Suppository[41]

Wk 1 and Wk 3	One thuja suppository[a] inserted vaginally at night before bed for 6 d, followed by 1 d off. The contents of the thuja suppository includes: thuja 6× HPUS, cocoa butter Lomatium, thuja essential oil, and Vitamin A.[30,31,40]
Wk 2 and Wk 4	One healing suppository[b] inserted before bed for 6 d, followed by 1 d off. Healing suppositories include: calendula 6× HPUS, silicea 9× HPUS, vitamin A, and cocoa butter.[20,30,31]
Wk 5 - 12	One green tea[c] capsule inserted vaginally 2 ×/wk.[33]

[a]Wise Women Herbals (Creswell, OR, USA) supplied the thuja suppository.
[b]Earth's Botanical Harvest (Sandy, OR, USA) supplied the healing suppository.
[c]The green tea suppository is the Green Tea Phytosome made by Thorne Research (Sandpoint, ID, USA).

Table 3. Results

Follow-up	Results
6 Mo	• Negative Pap • Negative ECC • One small area of faint acetowhite epithelium without evidence of abnormal blood vessels was noted upon satisfactory colposcopic examination; no biopsies taken
1 Y	• Negative Pap • Negative HPV • One small area of faint acetowhite epithelium without evidence of abnormal blood vessels was noted upon satisfactory colposcopic examination; no biopsies taken
2 Y	• Negative Pap • No abnormalities noted on colposcopic exam

Abbreviations: ECC = endocervical curettage; Pap = Papanicolaou test; HPV = human papillomavirus.

Results

The woman in the case study received a total of 10 escharotic treatments at a frequency of 2 treatments per week, each treatment taking 20 minutes. Reported adverse symptoms included mild burning and cramping during the procedure and 2 to 3 days of spotting following each treatment. All symptoms were temporary and self-resolving. The woman also completed 1 year of the oral, anticarcinogenic HPV protocol and 12 weeks of the vaginal suppository protocol, which she tolerated well. Three months following the completion of her escharotic treatments, she returned to the clinic for a follow-up. A liquid-based Pap smear was collected, and an ECC was performed. Her testing revealed negative cervical cytology for intraepithelial lesion or malignancy, and her ECC was negative. One small area of faint acetowhite epithelium without evidence of abnormal blood vessels was noted upon satisfactory colposcopic examination and no biopsies were taken (Table 3). Although not considered diagnostic, these findings are more likely to be benign.[42] The woman was instructed to continue taking the anticarcinogenic HPV oral supplements and to return to the clinic for her 1-year Pap test and annual follow-up.

At her 1-year follow-up, Pap and HPV testing were performed. Again, her results revealed negative cervical cytology for intraepithelial lesion or malignancy, and she was negative for high-risk types of HPV. One small area of faint acetowhite epithelium without evidence of abnormal blood vessels was noted upon satisfactory colposcopic examination, and no biopsies were taken. The woman was

instructed to stop taking the oral supplements and to return to the clinic for her 2-year Pap test and annual follow-up.

At her 2-year follow-up, results again revealed negative cervical cytology. A colposcope was used to visualize the cervix, and no abnormalities were noted.

Discussion

The patient in this case presented to our clinic for a consult about the escharotic treatment after having read the *Integrative Cancer Therapies* article[16] and was concerned about the potential obstetrical implications of the recommended LEEP procedure. As stated earlier, we reiterated the importance of LEEP and stressed to her the risks associated with failure to undergo or delay treatment. After written refusal of the recommended LEEP, the woman was provided with information about the escharotic treatment.

Escharotic treatment is an effective alternative for women of childbearing age.[12] For women with high-risk HPV-positive CIN3, it may be a viable alternative if they are concerned about the possible obstetrical complications associated with the use of other treatment types, especially the use of LEEP; however, no long-term data exists on the effect of the escharotic treatment on obstetrical outcomes.

While more research is needed to understand any potential long-term risk(s) and complications associated specifically with escharotic treatment, other ablative therapies have been shown to have fewer obstetrical complications than excisional ones.[9-11] While the benefits and risks of escharotic treatments require more research, the additional use of anticarcinogenic, oral nutritional, and botanical supplements is unique in its potential for far-reaching health implications, such as immune modulation and increased resistance to recurrence (Table 1).[26-37]

Given that the oral and vaginal regimes were used concurrently with escharotic treatments in the current case study, it is hard to say which element(s) was (were) most effective and, in fact, the use of them together may be the key to long-term success. Because of the nature of its location, it is challenging for all aspects of a lesion of the endocervical canal to be adequately treated or efficiently reduced with topical regimes alone. It is encouraging that a protocol including oral supplements resulted in successful treatment of a woman with a high-risk type of persistent HPV infection with ECC-positive involvement.

Author Disclosure Statement

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