Received:10 July 2026	Revised: 16 Aug 2026	Accepted: 15 Sept 2026

Review Article

IJAG
Lets Explore Ayurveda Gynaecology

ISSN: 3048-5592

"KARNINI YONIVYAPAD (CERVICAL EROSION AND ECTROPION): KSHARA KARMA AND JATYADI TAILA — A REVIEW OF CLINICAL STUDIES"

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FUNDING INFORMATION:
Not Applicable

How to cite this article:
Gandhi A. "Karnini Yonivyapad (Cervical Erosion and Ectropion): Kshara Karma and Jatyadi Taila — A Review of Clinical Studies" International Journal of Ayurveda Gynecology. 2026;3(3):8-14
Sri. 2026.1008.ijag.03.02

ABSTRACT:

Background: Cervical ectropion (ectopy), still widely called cervical erosion, is the presence of columnar epithelium on the ectocervix. It is common and usually physiological, but some women have persistent discharge, postcoital bleeding, pelvic pain and dyspareunia. Symptomatic cases are usually treated by ablation, most often cryotherapy. Ayurvedic gynaecologists commonly interpret the condition as Karnini yonivyapad or Garbhashaya grivamukhagata vrana and treat it with local application of medicated alkali (Pratisaraniya kshara) followed by Jatyadi taila. **Objective:** To review the classical basis and the clinical and experimental evidence for Kshara karma and Jatyadi taila in symptomatic cervical ectropion, in the context of current conventional evidence. **Methods:** Charaka Samhita, Sushruta Samhita and Sharangadhara Samhita were reviewed for Karnini yonivyapad, Kshara and Jatyadi preparations. PubMed was searched for clinical trials, observational studies, systematic reviews and experimental studies on cervical ectropion, Kshara, Jatyadi and related Ayurvedic local therapies. Findings were synthesised narratively. **Results:** Randomised trials support cryotherapy, and one trial found intravaginal tranexamic acid comparable to it. No PubMed-indexed clinical trial of Kshara karma or Jatyadi taila specifically in cervical ectropion was identified. Indirect evidence includes a randomised trial and a multicentre controlled trial showing that Jatyadi preparations heal clean wounds and chronic ulcers comparably to standard dressings, experimental studies showing anti-inflammatory, antibacterial and wound-healing actions, case reports of Kshara karma in chronic wounds, and an older study of an Ayurvedic ointment after cauterisation of cervical erosion. **Conclusion:** Kshara karma followed by Jatyadi taila is a rational Ayurvedic analogue of ablation followed by wound care, but its use in cervical ectropion rests on classical authority and indirect evidence. Cervical screening must precede treatment, asymptomatic ectropion should not be treated, and randomised trials against cryotherapy are needed.

KEYWORDS: Karnini yonivyapad, cervical ectropion, cervical ectopy, Kshara karma, Apamarga kshara, Jatyadi taila

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INTRODUCTION

Cervical ectropion, also called ectopy, is the presence of glandular columnar epithelium on the vaginal surface of the cervix. It is common in women of reproductive age and is generally regarded as a benign, physiological condition[1,2]. The older term cervical erosion is a misnomer, since the epithelium is not eroded but everted. The term nevertheless remains in wide clinical and popular use, and in some settings it carries stigma and has been associated with commercially driven overtreatment of a normal finding[3].

Although most women with ectropion have no symptoms, some experience profuse vaginal discharge, postcoital bleeding, recurrent cervicitis, pelvic pain and dyspareunia[1,4]. A systematic review found that ectropion is associated with human papillomavirus (HPV), human immunodeficiency virus, bacterial vaginosis, cervical epithelial atypia and postcoital bleeding, although high-quality studies did not find an association with chlamydia[5]. Women with symptomatic ectropion frequently carry oncogenic HPV types and show altered vaginal microbiota and mucosal inflammation[2], and a 2026 case-control study found ectropion to be independently associated with high-grade cervical dysplasia, while acknowledging possible confounding by unmeasured HPV infection[6]. These observations make it essential that every woman with ectropion undergoes appropriate cervical screening before any local treatment.

For symptomatic ectropion, ablative treatment, most often cryotherapy, is widely used[1,4,7]. In India, Ayurvedic gynaecologists also manage the condition, commonly under the diagnosis of Karnini yonivyapad or Garbhashaya grivamukhagata vrana (an ulcer at the mouth of the cervix)[8,9], using local application of medicated alkali (Pratisaraniya kshara) followed by medicated oil, especially Jatyadi taila. This review examines the classical rationale for this approach and the clinical and experimental evidence available for it.

METHODOLOGY

This narrative review was prepared in two parts. First, the classical texts of Ayurveda, namely Charaka Samhita (Chikitsa sthana, chapter 30), Sushruta Samhita (Sutra sthana, chapter 11 and Uttara tantra, chapter 38) and Sharangadhara Samhita (Madhyama khanda, chapter 9), were studied with their standard commentaries for descriptions of Karnini yonivyapad, Kshara and Jatyadi preparations[9–11]. Second, PubMed was searched for literature published up to October 2026 using combinations of the terms cervical erosion, cervical ectropion, cervical ectopy, cryotherapy, Ayurveda, Ayurvedic, Kshara, Apamarga, Karnini and Jatyadi. Randomised and non-randomised clinical trials, observational studies, systematic reviews, case reports and experimental studies were considered. Every reference cited in this article was checked against its PubMed record for authors, title, journal, year, volume, pages and digital object identifier. Retracted publications identified during the search were excluded. The findings are synthesised narratively rather than statistically.

CURRENT UNDERSTANDING OF CERVICAL ECTROPION

1. Nature and clinical significance

Ectropion arises when columnar epithelium from the endocervical canal is exposed on the ectocervix. On speculum examination it appears as a red, velvety area around the external os. The exposed columnar cells produce mucus and are more fragile than squamous epithelium, which is generally thought to explain the discharge and contact bleeding reported by some women[1]. Over time, the exposed columnar epithelium is normally replaced by squamous epithelium through squamous metaplasia within the transformation zone.

2. Associations with infection and dysplasia

The association between ectropion and sexually transmitted infections, bacterial vaginosis and epithelial atypia[5] has two practical implications. First, symptoms attributed to ectropion may in fact be due to coexisting infection, which should be sought and treated. Second, the exposed transformation zone is the site at which HPV-related dysplasia develops, so cytology or HPV testing, and colposcopy when indicated, must precede treatment[2,6].

3. Conventional management

Asymptomatic ectropion requires no treatment. For symptomatic ectropion, a double-blind randomised trial of 164 women found that cryotherapy produced significantly greater improvement than a sham procedure in vaginal discharge, itching, dyspareunia, postcoital bleeding and pelvic pain, as well as greater improvement in the appearance of the cervix, with no remarkable side effects[7]. A prospective study of 73 women found improved physical and mental quality of life six months after cryotherapy, although overall

sexual function scores were unchanged apart from the pain domain[4]. A 2026 prospective study of 110 women reported complete healing in 91.8% at 12 weeks, with abnormal discharge falling from 92.7% to 8.2%[1].

Non-ablative alternatives are being explored. In a randomised trial of 92 women, intravaginal tranexamic acid tablets produced symptom relief and resolution of ectropion comparable to cryotherapy[12]. In a prospective cohort of 116 women awaiting ablation, vaginal ovules of *Triticum vulgare* extract for two months reduced symptoms and the size of the ectropion area compared with expectant management, although allocation was not randomised[13]. Such studies show that local herbal and non-ablative approaches can be evaluated in controlled designs, and they form the relevant comparators for Ayurvedic treatments.

CLASSICAL AYURVEDIC UNDERSTANDING

1. Karnini yonivyapad

Karnini yonivyapad is one of the twenty gynaecological disorders described in the classical texts. Charaka attributes it to premature straining during labour, when Vata, obstructed by the foetus, combines with Kapha and Rakta to produce a fleshy, projecting growth (Karnika) in the genital tract that obstructs the passage of menstrual blood[9]. Sushruta lists Karnini among the Kaphaja Yonivyapad and describes a Karnika arising in the Yoni[10]. The term Karnika, meaning a lotus pericarp or a projecting lump, is interpreted by many contemporary Ayurvedic gynaecologists as the raised, red, granular area of ectropion around the external os, with Kapha corresponding to the mucoid discharge and Rakta to contact bleeding. Others use the descriptive term Garbhashaya grivamukhagata vrana, which emphasises the ulcer-like appearance[8]. These correlations are interpretive rather than literal. The classical account of a growth obstructing menstrual flow could also describe a cervical polyp, and the classical texts did not distinguish physiological ectopy from pathological lesions. Their main value lies in guiding the choice of local therapy.

2. Principles of treatment

Charaka recommends Kapha-reducing treatment for Karnini, including medicated vaginal pessaries (Varti) and oils applied locally[9]. More broadly, Sushruta's principles of wound management (Vrana chikitsa) classify local treatments according to whether a wound needs cleansing (Shodhana) or healing (Ropana)[10]. A Kapha-dominant, discharging lesion is first cleansed and its abnormal tissue removed, and the clean surface is then encouraged to heal. In contemporary Ayurvedic gynaecology, this sequence is achieved by the application of Pratisaraniya kshara to the lesion, followed by Jatyadi taila tampons or Pichu (medicated swabs), together with vaginal washes (Yoni prakshalana) with astringent decoctions such as Panchavalkala and oral drugs that reduce Kapha and inflammation. Vaginal pessaries (Yoni varti) prepared from drugs with cleansing and healing properties, such as Darvi, Haridra, Lodhra and Sphatika, are also used, and one such formulation has been standardised pharmacognostically and physicochemically[8].

KSHARA KARMA

1. Classical basis

Kshara is a caustic alkaline preparation made from the ash of medicinal plants. Sushruta devotes a chapter to its preparation and use and regards it as superior to surgical instruments and accessory instruments because it can excise, cauterise, scrape and heal, and can be used where instruments cannot reach[10]. He distinguishes Paniya kshara (for internal use) from Pratisaraniya kshara (for external application) and describes mild, moderate and strong grades. After application, the operator waits for the tissue to change to the colour of a ripe black jambu fruit and then neutralises the alkali with acidic substances such as sour gruel or lemon juice[10]. Apamarga (*Achyranthes aspera*) kshara is the preparation most often used in gynaecological practice.

2. Proposed mechanism

In biomedical terms, Pratisaraniya kshara acts as a controlled chemical cautery. Application to the ectropion would be expected to destroy the superficial columnar epithelium, after which healing by squamous epithelium could follow, in the same way that cryotherapy, electrocautery and chemical cautery are thought to work. The well-documented use of Kshara in Ayurvedic surgery supports its capacity to destroy unhealthy tissue and promote healing. In a case of recurrent pilonidal sinus with coexisting anal fistula, a minimally invasive Kshara karma technique combined with Ksharasutra (medicated alkaline thread) achieved complete healing in six weeks with minimal

scarring, and the authors attributed prevention of recurrence to chemical cauterisation by the alkali[14]. Apamarga kshara taila applied to a diabetic pressure ulcer was associated with complete healing in two months[15].

Pharmaceutical characterisation of Kshara preparations is improving. A comparison of Sajjikshara prepared from herbal and mineral sources showed both to be alkaline and to contain carbonate crystals, with differences in sodium, potassium and ash content and no detectable heavy metals, microbial contamination or aflatoxin[16]. Variation in alkalinity between batches is an important safety consideration, since an excessively strong Kshara can cause deep burns and cervical stenosis.

3. Clinical evidence in cervical ectropion

No randomised or controlled clinical trial of Pratisaraniya kshara for cervical ectropion indexed in PubMed was identified in this review. Clinical studies of Kshara in cervical erosion have been reported in Ayurvedic postgraduate dissertations and in journals not indexed in PubMed, but these could not be verified to the standard required for this review. This is the most important evidence gap identified.

The closest indexed clinical evidence is an older study from Banaras Hindu University in which a 60% ointment of Udumbara (*Ficus glomerata*), one of the barks of the Panchavalkala group, was applied as a tampon after electrocautery of cervical erosion and compared with triple sulpha ointment; the cure rate was reported as 95% with Udumbara against 85% with the comparator[17]. This study suggests that Ayurvedic healing preparations can be integrated with an ablative procedure, which is the same logic as Kshara followed by Jatyadi taila, but its design details and statistical analysis are not reported in the indexed abstract.

JATYADI TAILA

1. Composition and classical indication

Jatyadi preparations are classical wound-healing formulations; Jatyadi ghrita is described in the chapter on medicated fats in Sharangadhara Samhita, and the oil-based Jatyadi taila is prepared on the same lines[11]. The formulation is based on jasmine (Jati, *Jasminum* species) leaves and includes Nimba (*Azadirachta indica*), Patola, Haridra, Daruharidra, Manjishtha, Yashtimadhu, Karanja, Sariva and Katurohini, processed in sesame oil or ghee with beeswax and Tuttha (copper sulphate)[11]. It is indicated for deep, discharging, painful and non-healing wounds (Dushta vrana and Nadi vrana) and is valued for both cleansing and healing properties. In gynaecological practice it is applied as a Pichu after Kshara karma, or alone for milder lesions, and it has also been used for intravesical instillation (Uttara basti)[18].

2. Clinical evidence in wounds

Although no indexed trial has tested Jatyadi taila specifically in cervical ectropion, its wound-healing efficacy has been evaluated in other settings. In a three-arm randomised, open-label trial of 45 patients with clean wounds, Jatyadi tulle and Madhughrita tulle were compared with honey tulle for ten days. Wound scores improved significantly within all groups and results were comparable between groups, while Jatyadi and Madhughrita tulle performed better for ease of application, removal and patient comfort; no adverse drug events were observed[19]. In a randomised, controlled, multicentre trial of 53 patients with diabetic foot ulcers and varicose ulcers, cleaning with a Panchavalkala aerosol spray followed by a Jatyadi taila spray produced healing comparable to conventional cleaning with hydrogen peroxide or hypochlorite and povidone-iodine dressing[20]. A case series in this journal reported that Jatyadi taila instilled into the bladder, combined with purgation and oral medicines, relieved severe interstitial cystitis with Hunner's ulcers for two years, illustrating its use on mucosal ulceration[18]. Two randomised trials and a case series do not establish efficacy on the cervix, but they show that Jatyadi preparations are well tolerated and at least comparable to standard dressings for wound healing.

3. Experimental evidence

Experimental studies support the traditional claims. Extracts of Jatyadi formulations showed antibacterial activity against reference and clinical strains of *Staphylococcus aureus*, including methicillin-resistant and biofilm-forming strains, and inhibited the expression and secretion of interleukin-6, interleukin-1, monocyte chemoattractant protein-1 and CXCL10 in activated macrophages[21]. A nanoemulsion hydrogel of Jatyadi taila promoted fibroblast proliferation and migration and, in rats, enhanced wound closure, increased collagen synthesis and reduced tumour necrosis factor-alpha compared with the conventional

oil[22]. The combination of antibacterial, anti-inflammatory and pro-healing actions is directly relevant to a cervix in which ectropion coexists with inflammation and dysbiosis[2,5].

DISCUSSION

The Ayurvedic management of Karnini yonivyapad with Kshara karma followed by Jatyadi taila is internally coherent and closely parallels conventional practice. Pratisaraniya kshara, like cryotherapy or electrocautery, destroys the exposed columnar epithelium, and Jatyadi taila, like post-procedure wound care, promotes healing while controlling infection and inflammation[10,11]. The approach is inexpensive and available in outpatient settings, which may be valuable where cryotherapy equipment is not.

The evidence, however, is indirect. Conventional treatment of symptomatic ectropion is supported by a sham-controlled randomised trial of cryotherapy[7], a randomised comparison of tranexamic acid with cryotherapy[12] and several prospective studies[1,4]. In contrast, no PubMed-indexed controlled trial of Kshara or Jatyadi taila in cervical ectropion was found. The support for Jatyadi taila comes from wound-healing trials in other tissues[19,20], experimental studies[21,22] and a case series on bladder ulcers[18]; the support for Kshara comes from classical texts, surgical case reports[14,15] and pharmaceutical characterisation[16]. The older Udumbara study[17] is encouraging but cannot substitute for modern trials.

Several cautions follow. First, ectropion is usually physiological, and treating asymptomatic women, whether with conventional ablation or Kshara, exposes them to unnecessary risk and may reinforce the stigma attached to the term cervical erosion[3]. Treatment should be reserved for women with troublesome symptoms. Second, because ectropion is associated with HPV and dysplasia[2,5,6], cytology or HPV testing, and colposcopy when indicated, must be completed before any destructive local therapy; Kshara application must never be used on an unscreened cervix, as it may mask or delay the diagnosis of precancerous disease. Third, coexisting vaginal and cervical infections should be identified and treated. Fourth, Kshara is caustic, and its strength must be standardised and documented, with careful application, neutralisation and follow-up to avoid burns, stenosis and impaired cervical function in women who wish to conceive. Fifth, pregnancy should be excluded before Kshara karma.

Future research should take the form of randomised trials comparing Kshara karma followed by Jatyadi taila with cryotherapy in women with symptomatic, cytologically normal ectropion. Outcomes should include validated symptom scores, colposcopic healing, time to healing, adverse effects, recurrence, quality of life and sexual function at three and six months[4,7]. Kshara batches should be characterised for pH and alkali content[16], and Jatyadi taila should be prepared according to classical methods with chemical fingerprinting. A trial comparing Jatyadi taila alone with a non-ablative conventional comparator such as tranexamic acid[12] would also be informative for women who prefer to avoid ablation.

CONCLUSION

Karnini yonivyapad provides an Ayurvedic framework for symptomatic cervical ectropion, and Kshara karma followed by Jatyadi taila represents a rational treatment sequence that parallels conventional ablation and wound care. Jatyadi preparations have reasonable indirect evidence of wound-healing, antibacterial and anti-inflammatory activity, but no PubMed-indexed controlled trial has yet tested either Kshara or Jatyadi taila in cervical ectropion. Treatment should be limited to symptomatic women after cervical screening, and randomised trials against cryotherapy are needed.

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