

Infrared Coagulation of Benign Erosions of Cervix

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ABSTRACT

Cervical erosion is the commonest problem encountered in gynecological practice. Various methods have been used upto now to treat benign cervical erosion, such as electrocautery, cryotherapy and laser. All have some advantages and disadvantages.

Aim: To evaluate the utility of infrared coagulator in conservative treatment of benign cervical erosions.

Methods and results: This is a study of 1000 cases. Nine hundred and seventy cases (97%) were done on outpatient basis. Healing was much faster and postprocedure discharge was minimal. Out of above cases only 20 (2%) required repeat procedure due to polyp like ectopias. In 30 cases (3%) of cases concomitant endocervical erosion was treated with electrocautery under short GA.

Conclusion: Infrared coagulation is at the moment the best suited method. In this necrosis is not caused by electric current but rather by heat of infrared light energy. This treatment is practically painless, does not require anesthesia and can be performed on outpatient basis. Healing time is short and postprocedure secretions are minimal.

Keywords: Cervical erosion, Infrared coagulation, Electrocautery, Cryotherapy, Laser.

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INTRODUCTION

Benign cervical erosion is the most commonly encountered problem in gynecological practice. This entity demands early treatment otherwise it can cause contact bleeding, discharge and pain as a consequence of cervicitis and parametritis. Moreover, cervical erosions can develop into premalignant lesions.

Various methods of treatment include Electrocoagulation, cryotherapy, laser and infrared coagulation. Electrocoagulation has been in use since long time in medical practice. Whereas infrared coagulation has recently been introduced and has already proven valuable in proctology, dermatology, otolaryngology and general surgical practice.

In infrared coagulation necrosis is not caused by electric current but rather by heat of infrared light energy. This procedure is practically painless and so does not require anesthesia; therefore can be performed on outpatient basis. Advantages of this procedure are short healing time and minimal secretions.

TECHNIQUE OF INFRARED COAGULATION

The apparatus consists of base unit and hand applicator (Fig. 1). The hand applicator has a bulbous part on rear end housing infrared light source and attached to this is a rigid long solid quartz-glass light guide which is tilted at distal end and has contact tip of a special polymer which does not adhere to the tissues. Light guides are available in various length, shapes and diameters according to the intended medical application. They are easily changed and allow treatment of tissue areas ranging from 2 to 10 mm in diameter.

The infrared light is emitted by 15 V tungsten-halogen lamp in the bulbous part of hand applicator. Twenty four kilogram gold plated reflector surrounding the bulb focuses the light to long solid quartz-glass light guide which carries the infrared radiation to the tip of the probe.

The coagulator has a pistol like grip with a trigger and attached power supply unit by a highly flexible cord. Red shield on the hand applicator is made from special material which prevents heat built up. It glows when the lamp is activated. The temperature at the tip reaches 100°C (Fig. 2).

Infrared energy penetrates tissue at speed of light and is instantly converted into heat in the tissue. The depth of coagulation is precisely determined by the duration of the pulse which is controlled by the automatic timer. The operator can select a setting from 0.5 to 3 seconds. For most benign lesions of cervix coagulation time of 3 seconds is sufficient to reach the coagulation depth of 4 mm. The borderline zone of necrosis is very narrow, basal layers of epithelium are damaged only to a minor degree and thus a rapid epithelialization and healing will be assured.

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Fig. 1: Infrared coagulator unit



Fig. 2: Infrared coagulator handpiece

MATERIALS AND METHODS

This is a study of 1000 cases of benign cervical erosions studied at our center between January 2002 till December 2012. Patients age ranged from 25 to 43 years and size of lesion varied from 12 to 40 mm. All the cases having negative PAP test and colposcopy findings were included in this study. Patients were counseled and informed that this procedure is almost painless and gives only feeling of warm water sensation and does not require anesthesia. Informed consent was taken. Injection Atropin was used as premedication.

PROCEDURE OF INFRARED COAGULATION

Patient was placed in lithotomy position. The required pulse is set on the power unit before use. The cervix is held with vulselum and it is cleaned. Hand applicator is held so that index finger goes onto trigger. Contact of the tip of the probe is applied in such a way that it remains perpendicular to the area to be coagulated with light mechanical pressure. After triggering, the contact tip is held in place on the tissue until the light goes out completely to achieve the desired coagulation effect per exposure. From 2 to 5 mm gap was kept between contact areas so that overlapping is avoided. Before going for next contact area, contact tip needs to be wiped out with damp gauze/sponge after exposure.

After procedure, patients were instructed to use Povidon iodine vaginal pessaries for 10 to 12 days. Patients were instructed to avoid sexual intercourse for 1 month. Patients were asked to come for follow-up after 1 month to inspect the cervical area. Severity and longevity of various symptoms like pain, discharge, itching were enquired.

RESULTS

This is a study of 1000 cases of benign cervical erosions during the period of January 2002 till December 2012. All the cases having negative PAP test and Colposcopy findings

were included in this study. Alone infrared coagulator was used in 970 cases (97%) without any anesthesia. In remaining 30 (3%) cases having endocervical extension, electrocautery was used for endicervical cauterization and IRC for rest of the lesion. These cases required IV Pentothol.

Eight hundred (80%) cases showed complete and uninterrupted epithelialization by squamous cell epithelium at the end of 4 weeks whereas 950 (95%) at the end of 8 weeks. Twenty (2%) Polyp like ectopias required second treatment.

All cases of infrared coagulation alone were discharged immediately whereas those who required anesthesia were discharged after 4 hours.

Severity of vaginal discharge and discomfort was minimum in IRC patients as compared to electrocauterized patients.

DISCUSSION

Any ideal method should have high success rate, give rapid healing with minimal postoperative discharge. It should preferably a painless procedure and so should not require anesthesia. We should be able to perform it on OPD basis. Equipment should be simple with low cost and should pose no danger to patient or doctor.

The technique of infrared coagulation for benign cervical lesions satisfies above requirements to a great extent. Cryotherapy, although less painful causes heavy postoperative discharge because of unspecified massive destruction of even healthy tissue. Because of use of pressure bottle of nitrogen this equipment is not without danger.¹⁻³ Laser therapy has many advantages like less pain, rapid healing, minimum post-procedure discharge,⁴⁻⁶ but cost of the equipment limits its use for treating benign cervical erosions on a broad basis in the practice of gynecology. Moreover, this therapy is only completely safe in the hands of experienced practitioner. Conventional electrocoagulation has a high rate of success, but is often very painful, especially if deep coagulation of large areas is required and so general anesthesia is required. In addition, there is a danger of secondary hemorrhage and postoperative discharge which often last for several weeks. One advantage of electrocoagulation is that actual lesions can be treated in punctiform manner sparing healthy

tissue and cervical canal can also be treated. In this respect, electrocoagulation and laser therapy are superior to infrared coagulation. On the other hand hazard of electrical accidents must also be considered. So on the basis of all these issues infrared coagulation is at present the best suited treatment of over 95% of the benign cervical erosions. The few other ectopias which resist two sessions of infrared therapy, or those which have excessive polyp like lesions can be treated by other modality.

But, in this study where we used only 6 mm flat probe coagulation of cervical canal was not amenable as it requires conical probe. Punctiform coagulation of scattered ectopic lesions less than 2 mm in diameter would also require thinner probes. For the want of such probes, we resorted to electrocoagulation in these situations. However, the cost of infrared coagulator is considerably high as compared to electrocoagulator.

Infrared coagulation was carried out for 300 patients of benign cervical erosions in a prospective study by Grunberger et al, 1983.⁷ Lesions varied from 5 to 50 mm. One hundred and ninety-four (86%) showed complete and uninterrupted epithelialization by squamous cell epithelium at the end of 6 weeks and 95% at the end of 8 weeks. Eleven (4.8%) having polyp like ectopias located endocervically required second treatment, out of which two failures were successfully treated by electrocoagulation in cervical canal.

CONCLUSION

Infrared coagulation is an outpatient treatment modality which is patient as well as operator friendly. More than 90% benign lesions of the cervix can be managed by IRC. Infrared coagulation has been in use in proctology and dermatology for long time with good results. It is a good option in the treatment of very common problem of cervical erosions on OPD basis.

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