

Original Articles

Loop Electrosurgical Excision Procedure of the Transformation Zone: an out patient procedure

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Abstract:

Objective: A prospective, observational study in Dhaka Medical College Hospital was carried out to assess the efficacy of loop electrosurgical excision procedure (LEEP) of the transformation zone of cervix as an outpatient procedure as diagnostic and therapeutic purpose during visit of patients with the report of CIN II or CIN III on histopathology.

Method: One hundred women over a period of one year from 1st January to 31st December 2011 were treated with LEEP as an outpatient procedure. Among these women 63 patients were CIN II and 37 patients were CIN III on histopathology report. LEEP were done under local anaesthesia. All patients were followed up for one year with colposcopy and also histology where appropriate.

Results: In all cases, the specimens obtained were adequate for histopathological assessment and in 98 (98%) cases the lesion had been completely excised. Two cases of CIN III required a second excision. One patient needed cervical sutures to achieve haemostasis following the excision. One patient was admitted in the hospital with primary haemorrhage. Two patients were admitted with secondary haemorrhage.

Conclusion: LEEP under local anaesthesia is an effective technique. It enables the treatment of patients with cervical intraepithelial neoplasia and exclusion of invasive cancer in a subsequent visit. Thus adequate tissue is made available for accurate diagnosis, thereby improving the accuracy of treatment.

Key Words: CIN, LEEP, Outpatient treatment, Diagnosis.

Introduction:

Electrosurgical excision of the transformation zone of cervix for the diagnosis and treatment of cervical intraepithelial neoplasia (CIN) was reported by Cartier et al. in 1981¹. Since then the technique has become more popular because it combines the advantage of outpatient destructive techniques with those of excision biopsy by LEEP or other biopsy. LEEP uses a low voltage high frequency alternating current that limits thermal damage but at the same time has good hemostatic properties². It is a technique easy to perform and has proved highly acceptable to patients. The diathermy equipment used is cheap and already

available in many hospitals. The major advantages of LEEP are its usefulness in an office setting with lower equipment cost, minimal damage to the surrounding tissue and low morbidity².

Prendiville et al³ reported a qualitative comparison of cervical biopsies obtained by LEEP and simple punch biopsy. He concluded that the former method produced superior histopathological material. More recently attention has been focused on cases of moderate dysplasia with suspected CIN II. There is still considerable disagreement within the profession whether to conservatively or actively manage such cases.

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Cervical intraepithelial neoplasia (CIN) is a histopathological condition where part or whole thickness of cervical squamous epithelium is replaced by cells showing varying degree of atypia. There are 3 types of CIN, CIN-I, II, III which can be converted into carcinoma of cervix at the rate of 1%, 5% and 22% respectively. If CIN can be treated by LEEP, carcinoma of the cervix can be prevented. CIN-I can be treated by ablative methods such as cryotherapy and cold coagulation. CIN II and CIN-III can be treated by excision methods such as LEEP or cone biopsy.

In this study, 12 months experience of LEEP procedure under local anaesthesia for the diagnosis and active treatment of CIN is reviewed.

Materials and Methods:

This was a prospective, observational study done in the Gynae outdoor of Dhaka Medical College Hospital (DMCH) over a period of 12 months from 1st January to 31st December, 2011.

During this period one hundred patients with CIN II and CIN III treated by LEEP under local anaesthesia during their second visit were included in the study.

All histopathology reported stating the degree of dysplasia and the suggested degree of CIN in terms of I, II and III. All histological findings of LEEP were reported in the same manner stating the degree of CIN thus making the comparison possible.

Histopathologically diagnosed CIN II or CIN III patients were treated with LEEP. An insulated Cusco speculum with an suction device tube was used throughout the procedure. Local anaesthesia was achieved by infiltrating the area to be removed on the cervix with 1% Xylocaine using a dental syringe. In the majority of the cases (97 cases) 10 ml was enough to achieve adequate anaesthesia but when the patient was over anxious or the lesion was relatively large, more local anaesthetic agent was required. Following the local anaesthetic infiltration, loop excision usually took less than one minute and the surface of the wound was touched with diathermy ball using very low power output. The patients were advised to avoid intercourse and vaginal tampons for six weeks.

All patients were followed up by a repeat colposcopy after 3 months of the initial treatment. During this visit the histology report was reviewed where

necessary, further biopsies or loop excisions were performed complementing the colposcopic examination.

Results:

1. A total of 100 cases of CIN II and CIN III were included in this study. The age ranged from 20 years to 52 years. The maximum number (52%) of patients was in 21-30 years age group (Table-I).

Table-I
Age at presentation

Sl. No	Age range	Number of patient	Percentage (%)
1	<21	10	10%
2	21-30	52	52%
3	31-40	22	22%
4	41-50	14	14%
5	>50	2	2%
Total		100	

All excisions were completed without major complications. Perioperative morbidity was minimal. Most patients had mild discomfort similar to or slightly stronger than menstrual pains. Some patients stated that they had no discomfort at all. One patient needed cervical sutures to achieve haemostasis following the excision. One (1%) patient was admitted to the hospital at the same day with primary haemorrhage and was treated conservatively with the insertion of a surgical haemostatic sponge and vaginal pack. All the patients received a course of antibiotics. Two (2%) patients were referred to the hospital with secondary haemorrhage in 10-14 days following the procedure and were treated successfully by administration of antibiotics only. In all cases the amount of bleeding was less than that experienced during menstruation.

In 8 (8%) cases histology reports suggested an incomplete excision and possibility of residual pathology. However this was proved in only 2 cases which required a second excision. In 100% of CIN II and 94.59% of CIN III cases the lesion corresponded with the colposcopy biopsy report and was completely excised (Table-II). This was confirmed by subsequent colposcopy and further biopsies where necessary.

Table-II
Result of LEEP biopsies

SL No	No of CIN cases LEEP done	percentage (%)	Biopsy report	Percentage (%)
1.	CIN II-63	63%	63-completely excised	100%
2.	CIN III-37	37%	35-completely excised	94.59%

Colposcopic examinations performed three months after the initial treatment then at 6 months interval, two follow up were done. In all the cases there was minimal or no scarring of the cervix. There were no findings to suggest subsequent cervical stenosis which was a more important issue as a cause of infertility.

Discussion:

Rene Cartier has long been an advocate of the low voltage diathermy loop as a method of both investigating and treating cervical intraepithelial neoplasia⁴ The principal advantages of the Loop electrosurgical excision method are that it is an outpatient procedure and provides a histological diagnosis while removing rather than destroying the tissue under scrutiny. It is therefore possible to rule out invasive disease and confirm that the lesion has been removed in its entirety⁵. If treated with destructive methods, given the unreliability of punch biopsies the degree of abnormality in these lesions would be misdiagnosed. This would lead to an unsuitable and inadequate follow up.

Clinical trials comparing LEEP to CO₂ laser ablation of the transformation zone have demonstrated similar efficacy and complication rates^{5,6}. Gunesevara et al. noted a 6.9% recurrence rate in patients treated with laser ablation versus 5.1% in patients treated with LEEP⁶. Similar findings were also documented in long-term follow up trails⁷. The effectiveness of CO₂ laser and LEEP four years after the initial treatment, was reported to be 94.6% and 96.4% respectively. Furthermore, in spite of almost complete agreement in both procedures, LEEP seems to be preferred because of the possibility of histological post-treatment verification⁸.

On the question of long-term morbidity, it has recently been concluded that when socio-epidemiological factors associated with the development of CIN are controlled, LEEP does not appear to exert an independent adverse effect on subsequent pregnancy outcome. After controlling for socio-epidemiological factors no significant increase in the incidence of

preterm delivery or low birth weight was detected. In addition it did not appear to affect cervical function as determined by mode of delivery or duration of labour⁹. Pregnancy after LEEP seems to have none of the adverse effects associated with a cone biopsy¹⁰.

In our study, 3 patients (3%) were subsequently diagnosed as not having CIN, which brings up the question of over-treatment. We feel this is a very small minority. Since the perioperative and short-term morbidity is low, this should be regarded as acceptable. It has been shown that intervention of a punch biopsy prior to LEEP made no difference to the outcome. A punch biopsy does not reduce the occurrence of negative LEEP and it has also been confirmed that the punch biopsy may be unreliable and certainly cannot be upheld as the gold standard¹¹. There is no evidence to suggest that destructive techniques used for the treatment of CIN have a smaller rate of over treatment. In this context the diagnostic and therapeutic efficacy of Loop electro surgical excision of the transformation zone performed during the first visit, by an experienced colposcopist was also confirmed in the study of Das and Elias¹².

LEEP is a safe and effective procedure with no effect on menstruation or fertility¹³. It is cheap, effective, easy to perform and enables the diagnosis and treatment of patients with abnormal cervical smears in a single visit. If the growing number of women requiring diagnosis and treatment as a result of having had an abnormal cervical smear is considered, decreasing the number of visits and treating the patients more quickly and effectively maximizes the importance of LEEP further. In this context LEEP appears to fulfil all these requirements and furthermore by providing an adequate amount of tissue for accurate diagnosis. It also improves the quality of care.

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