

Efficacy of Electroresection with the Diathermy Loop for the Treatment of Cervical Intraepithelial Neoplasia

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Introduction: Recent improvements in the understanding of the natural progression of cervical intraepithelial neoplasia (CIN) and in the knowledge of the treatments of pregnancy related morbidity, in addition to the progression of mean age of first pregnancy, brings out the need to rethink CIN management. There are currently two different modalities in the treatment of cervical dysplasia: local destruction and excision (loop diathermy, cold-knife conisation and laser conisation). The loop electrosurgical excision procedure (LEEP) is the most commonly used technique today for the practice of conisation, regardless of the lesion's size or level of junction in the endocervix. The aim of our study was to analyse the efficiency of LEEP and the incidence of complications in the per- and post-operative period.

Material and method: We enrolled 49 hospitalized patients who underwent loop diathermy excision of the cervix, in a period spanning two years between January 2009 and December 2011 at the Hospital Saint Die in France.

Results: As far as grading is concerned, 2 patients were CIN 1 (4.54%), 18 were CIN 2 (40.9%) and 24 were CIN 3 (54.54%). In 41 cases (93.18%) the resection was done within safety margins – healthy tissue, in three cases (6.12%) the excision was incomplete. Five patients referred to hospital with postoperative bleeding.

Conclusions: In our experience LEEP could be considered the treatment of choice for cervical dysplasia when colposcopy is satisfactory, because it is effective, simple, fast, inexpensive, unaggressive, has a low morbidity and it permits adequate pathological examination.

Keywords: CIN, treatment, loop electrosurgical excision procedure (LEEP)

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Introduction

Recent improvements in the understanding of the natural progression of cervical intraepithelial neoplasia (CIN) and in the knowledge of the treatments of pregnancy related morbidity, in addition to the progression of mean age of first pregnancy, bring out the need to rethink CIN management. Efficient tools are needed to optimize therapeutic indications and destructive techniques have to be reconsidered [1].

Because there is no superior technique for treating CIN, the choice of a treatment method will not depend on this criteria, but on the overall consideration of its characteristics, advantages and limitations put in balance with the plan of pregnancy, as well as CIN severity, women's age, risk of progression and of microinvasion misdiagnosis [1].

It is essential to keep in mind that this is not a cancerous lesion that we treat, but a risk that a patient may, one day, develop cancer.

Improved knowledge of the natural history of CIN and neonatal and obstetric morbidity of conservative treatments weighed down the average age of first pregnancy for a debate on the treatment of CIN 2–3, and force us to refine the therapeutic indications and to reconsider the use of destructive treatments.

There are currently two different modalities in the treatment of cervical dysplasia: local destruction (laser vaporisation, electrocauterization) and excision (loop diathermy, cold-knife conisation and laser conisation) [2,3].

The loop electrosurgical excision procedure (LEEP) is the most commonly used technique for the practice of

conisation, regardless of the lesion's size or level of junction in the endocervix. This technique can be performed under local anaesthesia and on an outpatient basis [2].

The gesture must be performed in a rapid manner, requiring skills and a certain degree of experience. However, by having loops of different sizes, it is possible to perform rapid resections and to produce cylindrectomies or cones adapted to the size of the observed lesions. That way one does not compromise fertility or the obstetric future of the majority of young patients affected by CIN.

Complications, mainly intra- and postoperative bleeding, occur in 7% of the patients [4] and postoperative strictures are directly related to the height of the cone, oestrogen deficiency or to the hormonal status.

The aim of this study was to analyse the efficiency of loop diathermy excision of cervical lesions and the incidence of complications in the per- and post-operative period.

Material and method

We enrolled 49 hospitalized patients who underwent loop diathermy excision of the cervix in a period spanning two years between January 2009 and December 2011 at the Hospital Saint Die, France.

All patients had previously had a cervico-vaginal smear, a colposcopy and a cervical biopsy.

We performed a descriptive statistical analysis using Microsoft Excel.

Results

The subjects' mean age was 35 years, the youngest being 20 years old and the oldest 62 years.

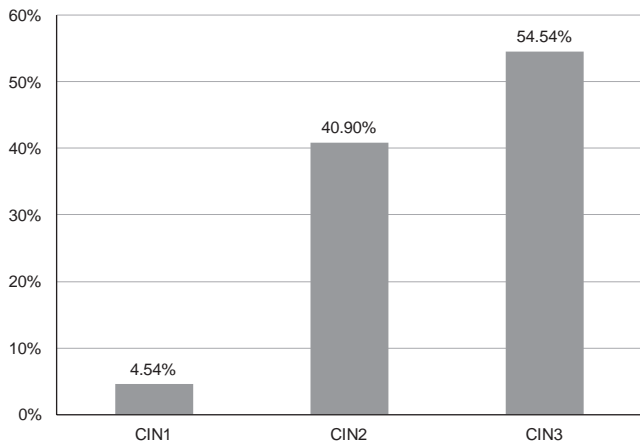


Fig. 1. Distribution of patients according to CIN grade

Five out of the 49 patients included in the study had no precancerous lesions on the anatomopathological exam of the bioptic piece (discordant biopsy-resection). As for the grading, 2 patients were CIN 1 (4.54%), 18 were CIN 2 (40.9%) and 24 were CIN 3 (54.54%). Most cases of CIN2 and CIN3 were found in patients aged between 20 and 40 years.

To examine the possible correlation between CIN grade and age, we divided the study group patients into two categories: patients younger than 30 years (18 cases), and patients over 30 years (23 cases). Due to the small number of patients with CIN 1, we analyzed only patients with CIN 2 and 3.

The majority of patients were admitted to an ambulatory surgery (40 patients, 81.63%), 7 were hospitalized for 24 hours (14.28%) and 2 were admitted for 2 days (4.08%). In 47 cases (95.91%) a general anaesthesia was performed, the remaining 2 being done under local anaesthesia (4.08%). In 43 cases a local infiltration of a mixture of lidocaine and adrenaline was used in order to achieve perioperative vasoconstriction.

Different sizes of diathermy loops were used and the electric generator was set on the cut function. Haemostasis was done with heat-generating cautery devices. In three cases two pieces were obtained, while for the others the

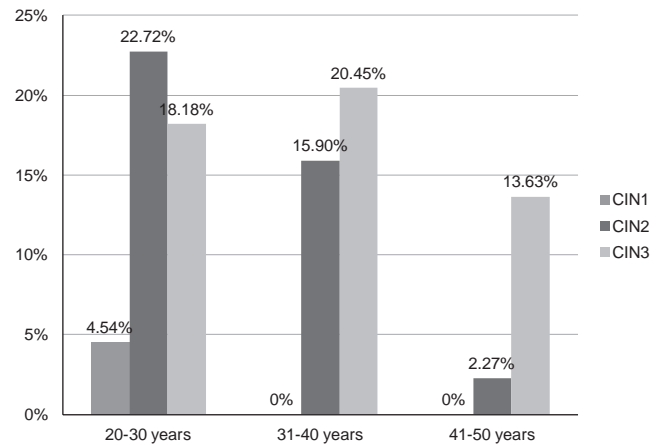


Fig. 2. CIN distribution by age

operator removed one piece.

The pieces were marked with a surgical thread placed at 12 o'clock to facilitate the pathological examination.

In 41 cases (93.18%) the resection was done within safety margins – healthy tissue, in three cases (6.12%) the excision was incomplete (all 3 were graded CIN 3). There were no cases where the pathologist could not interpret resection margins.

The duration of the intervention was between 4 and 11 minutes, with a mean length of 7 minutes.

In the study group, 10 patients (22.72%) had complications, as follows: 3 patients (30%) required vaginal sutures and 2 patients (20%) were monitored for 24 hours postoperatively due to a vaginal wick left on place for 24 hours.

Five patients (50%) referred to the hospital with postoperative bleeding between day 5 and 14 after surgery. In two cases an absorbable haemostatic gauze was used for haemostasis; no surgical reintervention was needed. No postoperative infections were noted.

Discussion

The surgical treatment of intraepithelial cervical lesions is efficient in 80 to 95% of the cases [5–7]. No other treatment proved to be better [7].

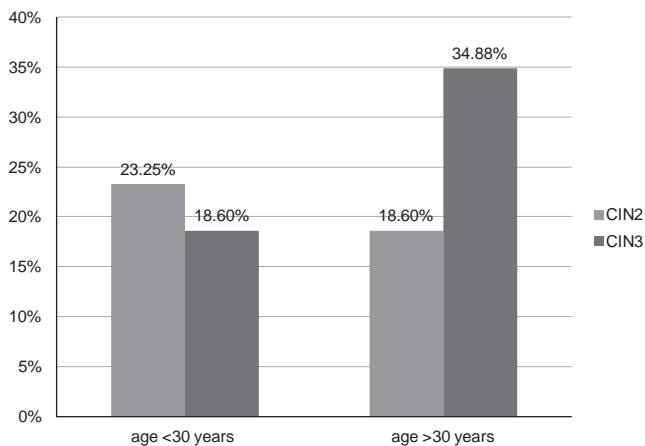


Fig. 3. CIN grade 2-3 and older patients

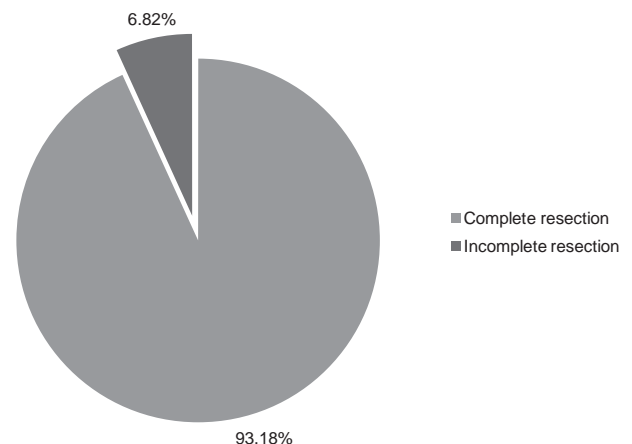


Fig. 4. Resection margin

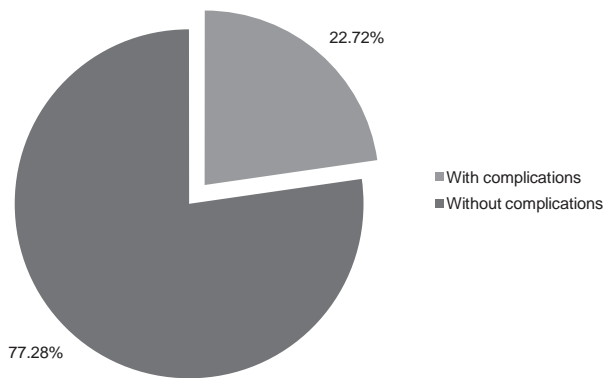


Fig. 5. Complications of treatment

Genital haemorrhage is the main immediate complication. Its incidence is reduced and it is not dependent on the technique used [8].

Our study confirms that LLETZ is effective with reduced complications (7 patients – 14.28% with low bleeding, not requiring surgical intervention).

Among the immediate complications postoperative pain stands out, especially for procedures done under local anaesthesia [1]. We usually prefer to perform surgery in general anaesthesia to prevent pain during surgery.

Choosing the type of treatment relies not on efficacy criteria, but on the ease of the intervention, the possibility to perform an anatomopathological exam and the short- and long-term morbidity [1].

The resection margins play an important role in the risk of relapse [9–11]. This has been estimated to be around 3% for resections within safety margins and 18% for inadequate surgical safety margins [11].

Resection could be incomplete or the piece inadequate – too big, with important obstetrical consequences [1].

All data in the literature suggest that LEEP is to be taken into account over laser or surgical conisation [1].

The average hospital stay is 1.36 days, much shorter than the average hospital stay of 4 days for cold-knife conisation [2]. This also lowers the hospital budget.

LEEP is cheap, it is easy to perform, can be done on an ambulatory basis under local anaesthesia and direct colposcopy, yielding adequate volumes of resection, smaller than the ones obtained by conisation [1].

LEEP augments the risk of obstetrical complications — premature birth, low birth weight and premature rupture

of membranes [12], but it is the only resection method that does not significantly rise neonatal morbidity and mortality [13].

Conclusions

In our experience, LEEP could be considered the treatment of choice for cervical dysplasia when colposcopy is satisfactory, because it is effective, simple, fast, inexpensive, unaggressive, has a low morbidity and it permits adequate pathological examination.

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