

Comparison of conization and limited excision of the transformation zone (LETZ) in the treatment of squamous intraepithelial lesions (SIL) of the uterine cervix

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Summary

Objective: To compare the treatment of squamous intraepithelial lesions of the uterine cervix using conization with limited excision of the transformation zone (LETZ). **Material and Methods:** A retrospective study of 285 women who received surgical treatment for cervical SIL between 2003 and 2006 was carried out. Prior to treatment, all the women underwent cervicovaginal cytology, colposcopy, and HPV testing. The women whose histology showed the presence of high-grade SIL were then divided into two groups for purposes of comparison: those treated by conization, and those treated by LETZ. **Results:** In group 1 (treatment by conization), 92 women met the selection criteria, and in group 2 (treatment by LETZ) 33 women met the selection criteria. Histology results showed high-grade SIL involvement of the cone biopsy surgical margins for 22 cases (23.9%) in group 1, and high-grade SIL involvement of the LETZ surgical margins for six cases (18.1%) in group 2. In 13 of the women in group 2, the indication for LETZ was persistent low-grade SIL. **Discussion:** The percentage of surgical margins involved was similar in the two groups in our study, and comparable to that reported in the literature (16.2 to 26.6%). Our study, like other published studies, thus supports the possibility in certain cases of treating high-grade cervical SIL conservatively with LETZ or minicones. In the 13 women with a diagnosis of persistent low-grade SIL, 11 of whom (84.6%) were infected with a high-risk HPV genotype, LETZ made a diagnosis of occult high-grade SIL. **Conclusion:** LETZ may be an alternative to conization in young women, and it is advisable in cases of persistent low-grade SIL with high-risk HPV infection.

Key words: Conization; LETZ; SIL; Human papillomavirus.

Introduction

In 1989, Prendiville *et al.* [1] introduced the use of the diathermy electrode into the treatment of high-grade SIL. Subsequently, other authors have confirmed its efficacy in treating high-grade SIL by comparison with cold-knife biopsy [2, 3], which until the introduction of large loop excision was considered the standard treatment [4].

The prevalence of high-grade SIL has increased in recent decades [5]. This development may be a result of an increase in human papillomavirus (HPV) infection and other risk factors (earlier initiation of sexual relations, tobacco use, and HIV infection). It has also been observed that high-grade SIL is appearing more often in younger women, who then become candidates for treatment by conization, with the negative repercussions this may have later on for their reproductive lives (higher risk of spontaneous abortion and preterm delivery) [6-8].

In this study, we compared the standard treatment for high-grade cervical SIL by large loop excision of the transformation zone (LLETZ) with limited excision of the transformation zone (LETZ) also performed with a diathermy electrode.

Material and Methods

A retrospective study was carried out in which, out of a total of 285 women surgically treated for cervical SIL between 2003 and 2006, those with a minimum postsurgical follow-up of one year were selected and divided into two groups. Prior to treatment, cervicovaginal cytology, colposcopy, and HPV testing and identification of genotypes using a microarray-based method were performed on all the women. In cases of atypical colposcopy, a colposcopically guided punch biopsy was performed.

The first group was comprised of women treated by LLETZ for which the indication was high-grade SIL confirmed by histological study of the cone biopsy. This intervention was performed on an inpatient basis under regional anesthesia, and the patients were discharged 24 hours after the procedure.

The second group consisted of women for whom discordant cytological diagnoses and persistent low-grade SIL indicated treatment by LETZ. In these women the specimen thus obtained confirmed the presence of high-grade SIL. The procedure was performed in the ambulatory surgery unit on an outpatient basis, with local (paracervical) anesthesia and sedation.

Subsequently the two groups were compared in terms of the percentage of surgical margins with involvement of high-grade SIL, and the need to perform further interventions to treat persistent or relapsing disease.

In addition, the two groups were compared for the presence of HPV infection, specifically by genotypes with a high-risk for carcinogenic transformation.

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Results

Of the 285 women surgically treated for SIL, 161 were treated by conization, but only 92 of these met the selection criteria of treatment by LLETZ and histological confirmation of the presence of high-grade SIL. Prior to conization, 61 (66%) of these women also underwent a colposcopically guided biopsy that yielded a diagnosis of high-grade SIL. These 92 women constituted group 1.

Group 2 was comprised of women who had undergone LETZ. Of the 102 LETZ procedures performed, 33 cases met the inclusion criterion of histological confirmation of the presence of high-grade SIL. The indications for LETZ in these patients were as follows: discordant cytology results in 18 cases, in some of which high-grade SIL was also present but not confirmed by colposcopically guided biopsy; a diagnosis of persistent (longer than 1 year) low-grade SIL confirmed cytologically and/or by colposcopically guided punch biopsy; and in two cases a colposcopically guided biopsy confirmed the presence of high-grade SIL.

In the first group (treated by LLETZ) histological study revealed involvement of the surgical margins in 22 cases (23.9%), as compared with six cases (18.1%) of involvement of surgical margins in group 2 (treated by LETZ).

A detailed analysis of the 22 cases in group 1 treated by LLETZ shows that a second conization was performed in eight cases, of which six resulted in a diagnosis of high-grade SIL. In eight cases a hysterectomy was performed, in four of which a high-grade SIL lesion was found. In the two cases in which LETZ was performed the results were negative. In the four cases in which the cytology, colposcopy and biopsy results showed no high-grade SIL, we opted for follow-up only. Involvement of the surgical margin was confirmed in only ten (45.5%) of the 22 women.

In group 2, conization was performed on four of the six women with positive surgical margins, and high-grade SIL was found in only one case. One hysterectomy was performed, with a negative result for high-grade SIL. In one case in which the cytology and colposcopy results were negative, we opted for follow-up only. High-grade SIL involvement of the surgical margin was found in only one case (16%).

In group 1, high-risk HPV infection was detected in 90.2% of cases, and the most frequently isolated genotype was type 16 (40.9%). In 19 cases (22.8%) more than one genotype was detected. In group 2, 90.9% of the women were infected by a high-risk HPV genotype, most frequently type 16 (46.6%), and nine cases (30%) were infected by more than one genotype.

Discussion

As other studies reported in the literature have observed [9, 10] the presence of high-grade SIL is significantly related to HPV infection, especially by high-risk genotypes. This was the case for both groups in our study, in

which the incidence of HPV infection was 90.2-90.9%, similar to that observed in these studies (92.2-93.3%).

The percentage of high-grade SIL cases in which there was involvement of the surgical margins is reported in the literature as ranging from 16 to 26.6% [11, 12]. In our study, this percentage was 23.9% for group 1, although subsequently it was confirmed in only 10.8%. This percentage is similar to that observed in group 2 (treated with LETZ): involvement of surgical margins in 18.1% of cases, and confirmation of only one case of high-grade SIL in the remaining cervical tissue in 3% of cases.

These data suggest that treatment of high-grade SIL by LETZ may be sufficient, especially in young women who wish to have children, without a significant increase in the number of cases in which the surgical margins of the cone biopsy are involved. This result was observed by Mints *et al.* [13] using a miniconization procedure individualizing the size of the cone and limiting excision to the transformation zone. They report a 12% rate of incomplete resection of the lesion in cases of grade 2 cervical intraepithelial neoplasia (CIN II), and 17% in women diagnosed with CIN III.

It is also important to note that in the 13 cases in group 2 with a diagnosis of persistent low-grade SIL, the LETZ procedure detected occult high-grade SIL not found by cytology screening, colposcopy or biopsy. In these 13 women, 11 (84.6%) cases of infection by a high-risk HPV genotype were identified. This finding confirms the need to treat women with persistent low-grade SIL, especially when associated with infection by a high-risk HPV genotype, using non-destructive techniques to make a histological diagnosis [12]. LETZ offers the advantage that it can be performed on an outpatient basis and is associated with lower morbidity [12, 14].

In conclusion, LETZ may be an alternative to LLETZ in young women who plan to have children, and it is advisable for women with persistent low-grade SIL and high-risk HPV infection, in order to rule out occult high-grade SIL.

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