

# Risks for complications and need for repeat excisional procedures of the uterine cervix

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## Introduction

Cold Knife Conization (CKC) and Loop Electrical Excision Procedure (LEEP) are interventions used to treat pre-malignant and malignant cervical lesions.

On occasion, multiple excisional procedures may be required to treat these lesions. This study aims to identify the risk factors associated with needing a re-excisional procedure of the cervix within one year of the first excision and to investigate if re-excisional procedures within one year are at higher risk for complications.

## Methods

- A multi-site, retrospective study of patients aged 18 years or older undergoing either CKC or LEEP from 2019-2021.
- Clinical-pathologic and surgical factors were examined to test for risk factors associated with surgical complication and need for re-excision. The relationship between time to second excision and complication risk during second excision was also analyzed.
- Continuous covariates were compared between excision groups using a Wilcoxon rank-sum test while categorical covariates were compared using a Fisher exact test.

## Results

Of the 188 eligible patients, 23 underwent re-excision within one year of the first procedure, totaling 211 excisional procedures. When looking for specific risk factors associated with re-excisional procedures less than one year apart, re-excision patients were significantly more likely to have a higher pathologic grade ( $p=.007$ ), have HIV ( $p=.032$ ), and have a longer case duration during the re-excisional procedure ( $p=.018$ ). Current or former smoking was associated with higher risk of re-excision but not statistically significant ( $p=.056$ ).

When comparing complication rates for patients with re-excisions within one year compared to no re-excision, no significant difference in complication rates at the first excision was found ( $p=.409$ ).

When comparing complications at first excision compared to second incision, the odds ratio for a complication was 9.37 times higher with re-excision compared to first excision (OR 9.37 (CI 1.48-67.9),  $p=.007$ ).

Finally, among the 23 patients with re-excisions, the mean time between excision days was much lower for patients with a complication in the second procedure (mean 31.5 vs 70 days), though results did not meet statistical significance ( $p=.067$ ).

## Conclusion

Pathologic grade, positive HIV status, and longer case duration were found to have a statistically significant association with needing a re-excisional procedure of the cervix. Repeat excisions were more likely to have a complication.

Although not statistically significant, complications with re-excisions appeared to be associated with shorter time between excisions. Optimal initial excisional procedure, potentially with specialized gynecologist, for patients with high-risk histology and/or HIV is the best route to prevent a significantly more risky repeat excisional procedure. Time to second excision should be extended greater than 35 days to surgical risk.