

CERVICAL VOLUME REGENERATION AFTER LARGE LOOP ELECTROEXCISION

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Objectives. Large loop electro-excision (LLETZ) is a treatment method of high-grade cervical intraepithelial neoplasia. LLETZ increases preterm labor risk due to mechanical cervical defects and an alteration of the cervical barrier, although the precise mechanism is unknown. This present study aims to calculate the cervical volume (CV) changes six months after the LLETZ procedure.

Materials and Methods. A prospective cohort study was performed in Riga Maternity hospital from 2021-2022. Eight women of reproductive age who were scheduled for LLETZ were included. CV measurements were carried out with a predefined ultrasound measurement technique by one operator before and 6 months after LLETZ. To precisely measure CV three-dimensional: Virtual Organ Computer-Aided Analysis software was used. Cervical measurements included length, anteroposterior (AP), and transverse diameter (LL). CV difference was calculated by subtracting CV 6 months after LLETZ from the CV before LLETZ. Differences between two groups with different cervical healing patterns were compared using independent samples T-test, as data were normally distributed.

Results. The mean CV before LLETZ was $19.81 \text{ cm}^3 \pm 7.72$ and 6 months after LLETZ $19.50 \text{ cm}^3 \pm 5.36$. We observed two different cervical healing patterns. In four patients the mean CV after 6 months decreased (mean = $0.93 \text{ cm}^3 \pm 0.05$), as expected, and in another four the CV increased (mean = $1.14 \text{ cm}^3 \pm 0.02$). When comparing these two groups they differed by 0.24 cm^3 , $t(6) = -9.2$, $p < 0.003$ CV increased by the means of enlargement of cervical AP and LL diameters after 6 months. AP was larger by $0.61 \text{ cm}^3 \pm 0.38$ and LL by $0.83 \pm 0.49 \text{ cm}^3$, compared to the group with decreased volume.

Conclusions. Different cervical healing patterns were observed. The cervical volume increase could be attributed to an increase in AP and LL diameters but a decrease to resected cones volume. More research with a larger sample size is needed to determine cervical healing patterns and their clinical significance