



Clinical outcomes of pregnant women undergoing cervical surveillance with a previous history of cervical intraepithelial neoplasia treatment

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Background

Excisional management for cervical intraepithelial neoplasia (CIN) includes large loop excision of the transformation zone (LLETZ) and cone biopsy, with evidence supporting increased risk of preterm birth (PTB) in subsequent pregnancies of treated women.¹⁻³

Some literature suggest higher risks of PTB with increasing depth of excision, particularly depths over 10mm.^{3,4} Proposed mechanisms include mechanical weakening and an altered ability to form a protective mucous plug.^{1,5} However, women developing CIN also have baseline higher risks for prematurity and subsequent adverse perinatal outcomes due to hypothesised immunomodulation pathways relating to HPV, as well as common risk factors such as smoking.^{1,5}

Objectives

To document clinical outcomes among pregnant women with previous excisional CIN treatment, and assess features of these past treatments, including histological diagnosis, excisional depth and operator experience.

Method

A retrospective audit was conducted of women identified with previous excisional CIN treatment who underwent cervical length surveillance in pregnancy at a tertiary metropolitan hospital over a 3 year period (1/1/2017 - 31/12/2019). Data was collected by reviewing medical records, and ethics approval granted by the hospital's Human Research Ethics Committee (1092A).

References

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Results

52 eligible cases were identified. 48 cases had previous LLETZ, 6 cases had previous cone biopsies.

Table 1. Baseline characteristics

Maternal age [average (range)]	32.8 years (22-42)
Nulliparous [N (%)]	25 (48.1%)
Cases with previous single excisional treatment only [N (%)]	49 (94.2%)
Cases with short cervix in pregnancy (defined as cervical length <25mm on mid-trimester scan) [N (%)]	15 (28.8%)
Histological diagnosis of CIN treatment [N (%)]:	
- Normal	8 (14.55%)
- Low-grade intraepithelial lesion - LSIL (CIN I)	8 (14.55%)
- High-grade intraepithelial lesion - HSIL (CIN II/III)	33 (60.0%)
- Cancer	6 (10.9%)

Table 2. Operator-specific findings

Operator	Number of cases	Excision depth [ave (range)]	Clear margins [N (%)]	Short cervix in pregnancy [N (%)]	PTB (< 37/40) [N (%)]
Junior Registrar	9	8.1mm (3-15)	6 (66.7%)	3 (33.3%)	1 (11.1%)
Senior Registrar	18	11.8mm (3-25)	11 (61.1%)	3 (16.7%)	2 (11.1%)
Consultant	11	8.2mm (4-19)	10 (90.9%)	2 (18.2%)	2 (18.2%)

Definitions: Junior Registrar = up to 4th year training; Senior Registrar = 5th or 6th year training; Consultant = qualified specialist

Operator information was found in 38 treatment cases. Average excisional depth was 8.72mm (range 1 -25mm).

Figure 3. Excisional depth of treatment cases

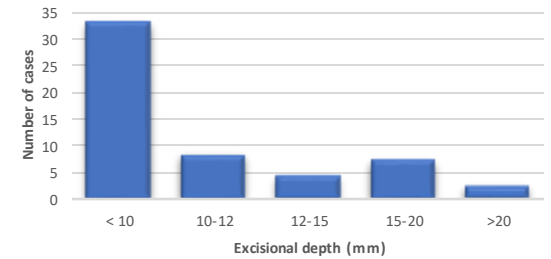
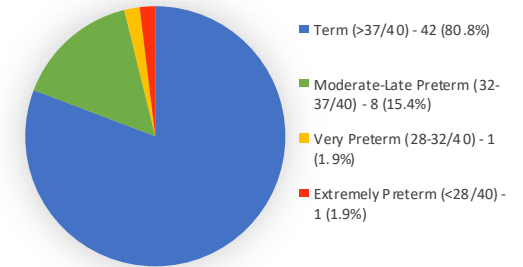


Figure 4. Gestational age at delivery



Overall mean gestational age at delivery: 38+1 weeks

Conclusion

In this small cohort of women undergoing cervical length surveillance in pregnancy following previous excisional treatment of CIN, almost 30% of cases were diagnosed with short cervix on mid-trimester ultrasound scan. Almost 20% of cases delivered preterm, which is higher than recent baseline Australian data for preterm birth and consistent with published evidence.^{1-3,6}

A wide range of CIN excisional depth is reported, though the majority (61.1%) had depths of less than 10mm, consistent with a type 1 excision. Our findings have implications for training, and ongoing clinical audit, with review of excisional depths and perinatal outcomes, should be considered.