EXPOSITION OF AN ENDOMETRIAL POLYP ON ULTRASOUND

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INTRODUCTION:
An Endometrial Polyp (EP) is a mass situated within the endometrium, affecting pre-menopausal and post-menopausal women, specifically those treated with tamoxifen. It is estimated that 25% of women have an EP, which are predominantly benign overgrowths of endometrial cells, however a malignant risk exists (1 - 3%)\(^{1,2}\). Malignancy risk, alongside symptoms such as menorrhagia and infertility, categorises EP’s as a pathology that requires an early diagnosis to aid best treatment. Ultrasound (US) is the first-choice modality for assessment of suspected EP’s\(^3\), with large studies proving it highly sensitive\(^4\).

CASE:
A premenopausal woman, suffering from menorrhagia and inter-menstrual bleeding (IMB) presented to her general practitioner and was referred for a pelvic US in line with best practice\(^5\). The patient was in good health, with no further complaints and a normal body mass index (BMI). No previous cancer or EP history. No previous Tamoxifen use. Both trans-abdominal (TAUS) and transvaginal (TVUS) scans were performed, in keeping with NICE guidelines\(^6\). The GP had established normal Ca-125 levels.

B-mode US revealed a 12 x 11mm EP within the distal segment of the endometrial cavity. This presented as a focal hyperechoic region within the endometrium, surrounded by free fluid. Use of doppler US established internal vascularity via a feeder vessel. Normal appearances of the uterus, ovaries and adnexa.

ULTRASOUND APPEARANCES:
- **Hyperechoic foci** within the endometrium\(^7\).
- **Feeder vessel** presence — doppler use (research underway to study pattern of flow to determine malignancy likelihood\(^8\)).
- Surrounding **oedematous fluid**\(^9\) — proteinaceous fluid secreted by endometrial gland cells\(^3\).
- **Sessile or pedunculated nature**\(^10\).

DIFFERENTIAL ULTRASOUND DIAGNOSIS:

<table>
<thead>
<tr>
<th>Echogenicity of Endometrial Focus</th>
<th>Diagnosis</th>
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<tbody>
<tr>
<td>Hyperechoic</td>
<td>Endometrial polyp</td>
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<tr>
<td>Heterogeneous</td>
<td>Complicated polyp — increased carcinoma risk</td>
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<tr>
<td>Hypoechoic</td>
<td>Prolapsed submucosal fibroid</td>
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**Pharmacological Pitfalls:**
- **Tamoxifen** — estrogenic — known to increase thickness of endometrium\(^11\). Mimicking polyp presence. Cystic component in some cases. Listed as a carcinogen in USA\(^12\).
- **Oral contraceptive** — antioestrogen — known to thin the endometrium, allowing discrepancies to be more readily detected. May potentially reduce size of polyp\(^13\).

**Symptoms:**
- **Menorrhagia**\(^3\) (see spotting)
- **Pain**\(^3\)
- **IMB**\(^3\)
- **Post-menopausal bleeding (PMB)**\(^3\)
- **‘Spotting’** — new research theorises spotting and bleeding originates from the rupturing of the fragile vascular network within the polyp\(^8\).

**Further Diagnostic Ultrasound:**
1. **Elastography** — Polyps usually soft growth\(^16\).
2. **3D US** — Allows coronal view if diagnosis is uncertain\(^17\).
3. **Contrast enhanced ultrasound** — assessment of microvasculature to determine a benign or malignant pattern\(^16\).

**Conclusion:** US is correctly the first choice and superlative imaging modality for EP evaluation, with transabdominal and transvaginal scanning a must. At present hysteroscopy is a confirmatory tool with higher sensitivity\(^19\), however future imaging improvements hope to replace the need for an invasive hysteroscopic examination. Literature suggests best treatment is currently a hysteroscopic guided polypectomy\(^21\), as this should eradicate symptoms.

**Non-Ultrasound Follow-up:**
Confirmation of US findings:
- **Hysteroscopy** — Presently gold standard\(^19\).
- **Saline-infused Salpingogram (SIS)**\(^20\).
- **HyCoSy** — Hysterosalpingo-contrast sonography.

Treatment:
- **Polypectomy**\(^21\)
- **Ablation**
- **To date this patient has had no further imaging or follow-up.**
- **No follow-up**