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Use of high frequency linear transducer in routine gynaecology practice- Lets walk through the lumps and bumps and beyond!

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Objectives

Evaluate the role of high-frequency linear transducers in characterizing superficial lesions of the:

- Abdominal wall
- Inguinal region
- Vulva (translabial)
- Anterior perineum (transperineal)

Describe the spectrum of detectable pathologies.

Assess improvement in diagnostic confidence when used in addition to routine transabdominal and transvaginal ultrasound.

Determine whether their use reduces the need for CT/MRI.

Conclusion

High-frequency linear ultrasound enabled:

Precise delineation of lesion location within **cutaneous, subcutaneous, and deeper soft-tissue planes**

Better morphological characterization

Improved assessment of vascularity

Differentiation of **inflammatory, vascular, hernial, and neoplastic lesions**

Increased diagnostic confidence

Better guidance of management

Reduced need for additional CT/MRI

Methods

A. Equipment

Voluson E8 (GE)
9L-D linear array probe
ML6-15D linear array probe

B. Study Population

50 patients with pain or palpable swellings involving:

- Infraumbilical abdominal wall
- Umbilical region, Inguinal region, Vulvar region
- Anterior perineum.

C. Lesion Assessment

Morphology and margins
Internal vascularity
Depth from the cutaneous plane

D. Incremental Diagnostic Value defined as

Improved lesion characterization
Change in provisional diagnosis
Impact on management

Reference standard: Histopathology or clinical follow-up.

Results

- **Post-LSCS scar-site collections (12):** 4 rectus sheath haematomas, 3 seromas, 4 infections and 1 sutural granuloma.
- **Abdominal wall masses (7):** 5 endometriosis, 1 hernia and 1 desmoid tumour.
- **Inguinal swellings (17):** 4 hernias, 2 round ligament varicosities, 1 Canal of Nuck cyst and 10 lymphadenopathies.
- **Vulvar/perineal lesions:** 2 epidermoid cysts, 1 sebaceous cyst, 3 Bartholin abscesses, 2 vulvar haematomas, 2 paraurethral abscesses and 3 cellulitis cases.
- **High-frequency linear ultrasound** accurately localized lesions within the **cutaneous, subcutaneous and deeper soft-tissue planes**, with improved assessment of morphology and vascularity.
- This enabled better differentiation of **inflammatory, vascular, hernial and neoplastic lesions**, increased diagnostic confidence, guided management, and **reduced the need for further CT/MRI imaging**.

