Introduction/Background

To determine the percentage of benign myomas that appear as suspicious for uterine sarcoma on ultrasound examination.

Methodology

Prospective observational multicenter study (June 2019-December 2021) comprising a consecutive series of patients with histologically proven uterine myoma after hysterectomy or myomectomy who underwent transvaginal and/or transabdominal ultrasound prior to surgery. All ultrasound examinations were performed by expert examiners. MUSA criteria were used to describe the lesions. Suspicion of sarcoma was established when three or more sonographic features described by Ludovisi et al as frequently present in uterine sarcomas were present. These features were no myometrium visible, irregular cystic areas, non-uniform echogenicity, irregular contour, cooked appearance and color score 3–4. In addition, the examiners had to classify the lesion as suspicious by her/his impression, independently of the number of features present.

Results

651 women were included. Median maximum diameter of the myomas was 48 mm (range: 10-263 mm). 266 (41%) of the patients had more than one myoma. Using the criterion of > 3 suspicious features, 24 (3.7%) of the myomas had suspicious appearance. If we had used a criterion of > 2 features, this figure increased to 62 (9.5%) cases. By subjective impression, the examiners considered as suspicious 35 (5.4%) cases (18 cases had > 3 suspicious features and 29 cases had > 2 suspicious features).

Conclusion

About 4–10% of benign uterine myomas may exhibit sonographic suspicion of sarcoma. This figure is not negligible.

Methodology

A retrospective analysis of prospectively collected single-center university hospital data was performed from 2019 to 2022 by non-expert, although IOTA (International Ovarian Tumor Analysis Group) certified, sonographers. All patients were examined by transvaginal and transabdominal ultrasoundography. Serum CA125 levels were measured and the diagnostic performance of the ADNEX model was assessed with CA125 as a predictor.

Results

We retrieved data from 91 patients with 92 adnexal masses, of which 29 were excluded based on IOTA Simple Descriptors (SD) and Simple Rules (SR). Of the 62 patients with 62 adnexal masses included, 22/62 (35.5%) had benign and 40/62 (64.5%) had malignant tumors. Empirical area under the receiver operating characteristic curve (AUC) for the distinction between benign and malignant tumors was 0.75, sensitivity was 1.0, specificity was 0.5, precision was 0.784, negative predictive value was 1.0, false positive rate was 0.5, false negative rate was 0.0, and diagnostic accuracy was 0.823. Data follow a degenerate distribution and imply perfect decision performance.

Conclusion

Our findings suggest that, when used by non-experts, IOTA certified sonographers, the ADNEX model tends to overestimate the probability of malignant adnexal masses. The aforementioned accurately reflect the weaknesses of medical training and health care system in Greece.
Electrochemical detection might be a useful tool in cervical (pre)cancer diagnostics due to its low cost, speed, simplicity and high sensitivity. A perspective alternative, the LAMP isothermal amplification coupled to an electrochemical detection, is presented.

**Methodology** We developed an assay for parallel detection of two most oncogenic high-risk HPV types, HPV 16 and HPV 18, by combining loop-mediated amplification (LAMP) of viral DNA, its separation using magnetic beads and detection with an electrochemical technique – amperometry – at carbon-based electrode chips.

**Results** Optimization of the method was first published on pilot files with a small number of cases. Later, we carried out a small clinical study using electrochemical LAMP-based assay for detection of HPV 16/18 DNA in LBC samples obtained from 61 women undergoing conisation for cervical precancerous lesion. HPV 16 and 18 assays were performed by LAMP isothermal amplification combined with electrochemical reading. The results were confirmed by PCR amplification with gel electrophoresis and two commercial HPV assays (Cobas and INNO-LiPA). The best concordance was obtained with the PCR, reaching very good specificity for both genotypes (>93%) and positive and negative predictive values over 90%.

**Conclusion** These data indicate that the EC-LAMP isothermal amplification may serve as an interesting alternative tool for rapid screening of oncogenic HPVs.

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**REFERENCES**