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(article begins on next page)

normal vs abnormal cases (receiver operating characteristic area under the curve = 0.81, sensitivity = 0.74, specificity = 0.69).

Conclusions: The preliminary results of our study demonstrate that a DL algorithm has the potential to support clinicians in the sonographic evaluation of fetal PCF at 11-14 weeks of gestation through a fully automatic data processing, potentially increasing the performance of first trimester ultrasound in detecting major CNS anomalies. The prospective phase will assess its clinical applicability into the routine practice.

OP03: IMAGING CANCER II

OP03.01

Tru-cut biopsy in gynecological cancer: adequacy, accuracy, safety and clinical applicability

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Objectives: The aim of this study was to assess the adequacy, accuracy and safety of tru-cut biopsy.

Methods: A retrospective population-based review of 328 biopsies was conducted. Indications for tru-cut biopsies were diagnosis of primary tumours, metastases and suspected recurrences. A tissue sample was considered adequate when the quality/quality was sufficient to identify the subtype/origin of the tumour. Accuracy was defined as agreement between the diagnosis of the tru-cut biopsy and the postoperative histology. Complications within 30 days after the biopsy procedure were registered.

Results: In total, 300 biopsies were identified as tru-cut biopsies. The overall adequacy was 86.3%, varying between 80.8% and 93.5%, respectively, when performed by a gynecological oncologist or a gynecologist with ultrasound diagnosis subspeciality. Sampling of a pelvic mass had a lower adequacy (81.6%) compared with sampling of the omentum (93.9%) or carcinomatosis (91.5%). The accuracy was 97.5%, and the complication rate was 1.3%.

Conclusions: The tru-cut biopsy is a safe and reliable diagnostic method with a high accuracy and a good adequacy, depending on the site of the tissue sample, indications for the biopsy and the experience of the operator.

Supporting information can be found in the online version of this abstract

OP03.02

Artificial intelligence applied to ultrasound diagnosis of pelvic gynecological tumours: a systematic scoping review and meta-analysis

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Objectives: Pelvic gynecological cancers pose a significant challenge to global health. Ultrasound (US) imaging is crucial for diagnosis, but the subjective interpretation of US images can jeopardise performance. Artificial Intelligence (AI) has the potential to enhance diagnostic accuracy and efficiency. We aimed to evaluate methodologies, performance, and limitations of published AI models for US diagnosis of pelvic gynecological tumours.

Methods: We conducted a scoping review of studies on PubMed, Embase, Web Of Science, and Cochrane Central, from database inception until August 22, 2022. Pooled estimates of the diagnostic odds ratio (DOR) and area under the summary receiving operating characteristic curve (AUSROC) were calculated. Risk-of-bias assessment was based on an extension of QUADAS-2 with PROBAST and custom items. We conducted subgroup analyses to explore sources of heterogeneity. This study was registered with OSF (https://doi.org/10.17605/OSF.IO/BHKST).

Results: 7568 records were retrieved, of which 29 were eligible: 25 on adnexal, three on endometrial, and one on myometrial pathology. All studies were at high risk-of-bias. Only two development studies provided external validation. Pooling of adnexal pathology studies (116 models) yielded an AUSROC of 0.896 (95% CI: 0.851-0.923). AUSROC was of 0.915 (95% CI: 0.779-0.956) for 12 studies considered at 'very high' risk-of-bias and 0.867 (95% CI: 0.804-0.912) for eight studies at high risk-of-bias. For the latter eight studies, AUSROC was 0.939 (95% CI: 0.903-0.978) for two deep learning studies vs 0.829 (95% CI: 0.760-0.883) for six machine learning studies. Studies on endometrial and myometrial pathologies were described individually.

Conclusions: Current AI models for US diagnosis of gynecological tumours suffer from methodological shortcomings. Even then, AI models for diagnosing adnexal malignancy did not outperform the ADNEX model, the state-of-the-art logistic regression model based on US measurements.

OP03.03

Role of artificial intelligence applied to ultrasound in gynecology oncology: a systematic review

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Objectives: To explore the role of artificial intelligence (AI) applied to ultrasound imaging in gynecology oncology.

Methods: Web of Science, PubMed and Scopus databases were searched. Inclusion criteria were studies reporting the role of AI in the diagnosis of gynecological cancer. All studies retrieved from the search strategy were imported to RAYYAN QCRI software. The overall quality of the included studies was assessed using QUADAS-AI tool.

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