Introduction
The objective was to evaluate the feasibility and the performance of MR and ultrasound fusion imaging (MR-US FUSION) for characterizing adnexal masses.

Material and methods
A prospective monocentric study was conducted in the gynaecologic oncologic department of Creteil hospital. Between the January 2014 and July 2018, we included women referred for characterization of an indeterminate or suspicious pelvic mass (n=106). We excluded patients that did not undergo MR US FUSION (n=3). Feasibility was evaluated on this first population in which a subgroup of patients who underwent surgery was identified to evaluate MR-US fusion performance (n=26). Two independent readers retrospectively and blindly rated ultrasonography according to ADNEX US score and MR imaging according to ADNEX-MR score. Reference standard was final pathology at surgery. Sensitivity, specificity, positive and negative predictive values and likelihood ratio of each imaging were calculated for predicting malignant ovarian masses.

Results
Final population included 103 patients (mean age (SD) = 57 (18) years old). Mean time duration between first consultation and MR-US FUSION was 15 days (7). Mean BMI was 25 kg.m⁻². Ultrasound, MR, and MR-US Fusion were consistent for evaluation of the tumour sizes. Three MR US fusions were impossible the first had severe obesity (BMI 53 kg.m⁻²), the second had orthopaedics issues and the third was bedridden. The subgroup of patients who underwent surgery consisted in primitive ovarian cancer (n=12), ovarian metastases (n=2), borderline tumors (n=3) and benign tumours lesions (n=9). Sensitivity and specificity of MR-US FUSION for malignancy was 100% and 89% respectively, with an accuracy of 96% (80-99).

Conclusion
MR-US FUSION is a feasible and a promising multidisciplinary imaging technique in adnexal masses.