

SEEING BUT NOT FORESEEING

O-RADS Stratification and Surgical Outcomes in Benign Ovarian Cysts: A Retrospective Cohort Study

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Background

Ovarian cysts are common, usually benign, and affect women of all ages — yet ~19% ultimately undergo surgery.

O-RADS US (American College of Radiology) is a validated 1–5 risk-stratification system for adnexal lesions, guiding management by estimated malignancy risk.

Preoperative imaging is widely used across surgical specialties to plan approach and anticipate complexity.

Whether O-RADS category — designed for malignancy risk — also predicts surgical difficulty or complications in confirmed benign disease remains unknown.

OBJECTIVE

To evaluate whether O-RADS US classification is associated with surgical outcomes and complications in patients with pathologically confirmed benign ovarian cysts.

IRB approved (MMC-0294-22); informed consent waived (retrospective design)

Methods

Design & Population

Retrospective cohort, single tertiary center, 2014–2023

Included: pathologically confirmed benign cysts, treated by cystectomy / oophorectomy (laparoscopic or open)

Excluded: malignant pathology, incomplete records, no definitive surgery

Groups

Low-risk: O-RADS 1–2 vs. Intermediate/high-risk: O-RADS 3–5 (primary grouping)

Sensitivity analysis across all 5 individual O-RADS categories

Outcomes

Primary: postoperative complications (Clavien–Dindo, major/minor)

Secondary: operative time, conversion to laparotomy, length of stay, 30-day readmission, delayed mobilization, pain (VAS ≥7), recurrence

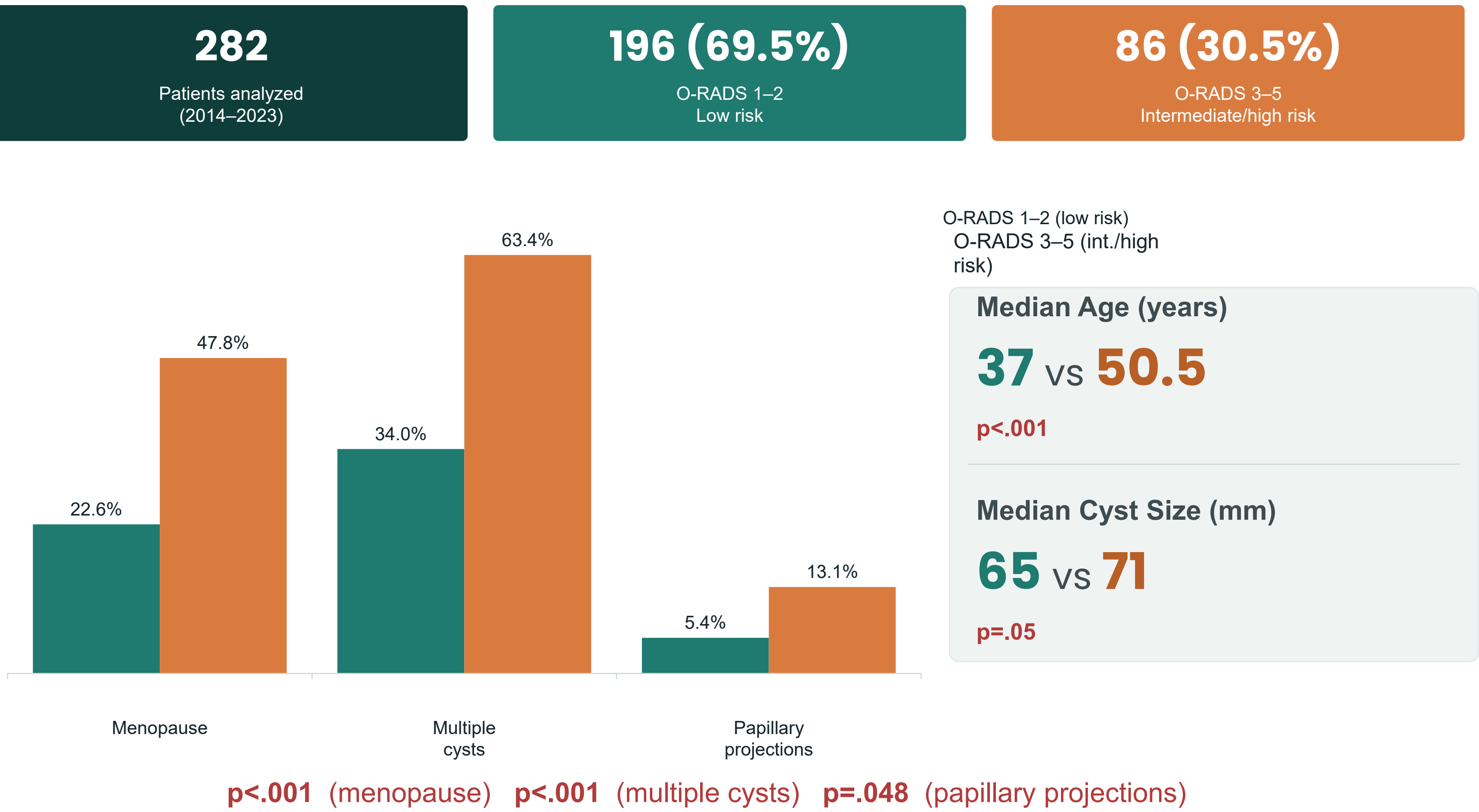
Statistical Analysis

Chi-square / Fisher's exact (categorical); Mann–Whitney U (continuous)

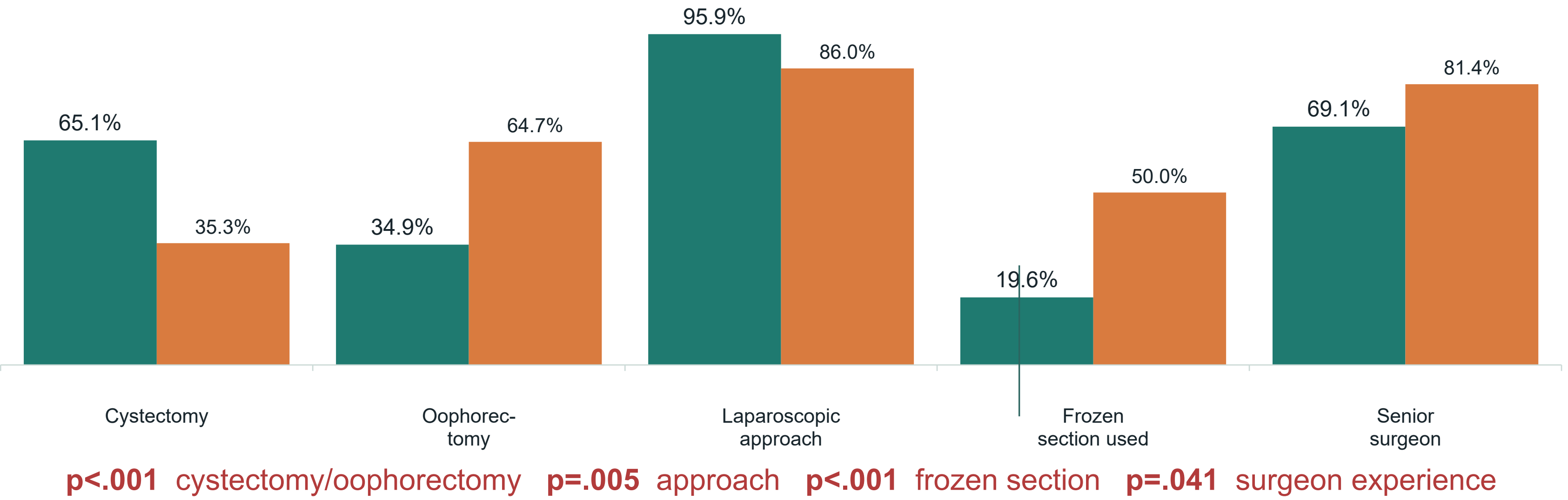
Multivariable logistic regression adjusting for O-RADS group, surgical approach, cyst size, intraoperative complications, surgeon experience

Results

Baseline & Sonographic Differences



Intraoperative Characteristics & Surgical Approach



KEY POSTOPERATIVE FINDING

No significant difference between groups in overall, major, or minor complications, conversion to laparotomy, readmission, delayed mobilization, or postoperative pain.

Only significant difference:
Longer hospital stay
in O-RADS 3–5
p=.019

Discussion

O-RADS classification was not independently associated with postoperative complications after multivariable adjustment.

The longer stay in O-RADS 3–5 likely reflects differences in age, menopausal status, surgical approach, and surgeon experience — not O-RADS itself.

A composite risk score may dilute the impact of specific sonographic features (e.g., cyst size, vascularity) that individually correlate with surgical difficulty.

Conclusion

O-RADS ultrasound category does not reliably predict surgical complexity or complication risk in pathologically benign ovarian cysts. Larger prospective studies of individual sonographic features are needed to refine preoperative surgical planning.

Limitations

Single-center, retrospective design
Relatively small cohort; few high-O-RADS cases
Examiner-reported sonographic descriptors