Management of Asymptomatic Adnexal Cysts Identified on Ultrasound: A Clinical Audit Project at the Saskatoon Health Region

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Disclosure

I do not have an affiliation, financial or otherwise, with a pharmaceutical company, medical device or communications organization.
Introduction

- Ultrasound remains the primary and preferred modality of gynecologic exam
- Radiologists are often asked to evaluate adnexal and ovarian cysts
- Surgical consultation is often recommended if a cystic mass has concerning imaging features for malignancy
- Inappropriate management leads to excessive follow-up examination and patient anxiety
- Ambiguity remains on how to best manage these patients
Consensus Guidelines

Consensus guidelines on the management of adnexal and ovarian cysts identified on ultrasound by Levine et al were published in Radiology in 2010

Breakdown of adnexal cysts into three groups

1. Cysts with benign characteristics
2. Cysts with indeterminate, but probably benign characteristics
3. Cysts with characteristics worrisome for malignancy

Further breaks down management of these groups depending on whether the patient is pre- or post-menopausal
Trigger for Audit

- These guidelines were presented at a Journal Club in November 2010
- The question is now, “how well are we following them?”
Methods

Audit:
- 1133 total ultrasounds on 977 women across three major Saskatoon hospitals
  - 594 between November 24 2010 and February 28 2011
  - 539 between November 24 2011 and February 29 2012

Re-audit:
- 540 ultrasounds on 506 women within same three hospitals between November 24 2012 and February 28 2011.
- Statistical significance defined as p<0.05 using Fisher’s exact test
Inclusion and Exclusion

- 734 ultrasound reports had ovarian follicles/cysts that were commented on by the reporting radiologist
- 35 women excluded, as their cysts were determined to be symptomatic
  - 7 PID
  - 12 ectopic pregnancies
  - 4 ovarian torsion
  - 7 follow up studies of painful cysts/endometrioma
  - 2 PCOS
  - 2 follow up studies of known cystic malignancies
Adherence to guidelines – Reproductive age women

- Follicles
- Corpus Luteum
- Simple Cysts
- Hemorrhagic Cysts
- Atypical

% managed according to guidelines
Deficiencies Noted – Postmenopausal simple cysts

- >1cm and ≤7cm: yearly follow up
- Of nine simple cysts identified, none were managed according to guidelines
- In general, yearly follow up is not being recommended in cysts between one and three centimetres
Deficiencies Noted - Endometriomas

- Homogeneous, low level internal echoes
- No solid component
- ± tiny echogenic foci in wall
- Initial follow up in 6-12 weeks, and then if not surgically removed, follow up yearly
- Of four, none managed according to guidelines
Deficiencies Noted – Dermoid Cysts

- Focal or diffuse hyperechoic component
- Hyperechoic lines and dots, with areas of acoustic shadowing
- No internal flow
- If not surgically removed, yearly follow up to ensure stability
- Of seven, none managed according to guidelines
Deficiencies Noted – Cysts with multiple thin septations

Any Age:
- Consider surgical evaluation
- Multiple septations suggest a neoplasm, but if thin, the neoplasm is likely benign
- Of three, none managed according to guidelines
Deficiencies Noted – Cysts with Characteristics Concerning for Malignancy

- Nine cysts with thick septations, or containing nodules with blood flow were identified
- Three managed by guidelines
- Although the report states that the findings are concerning for malignancy, surgical evaluation or MRI is not routinely being recommended
Recommendations

- Simple cysts, hemorrhagic cysts, endometriomas and dermoids are benign cysts that are seen frequently.
- Endometriomas and dermoids are currently not being managed according to guidelines.
- Post menopausal cysts are currently not being managed according to guidelines.
- When findings are concerning for malignancy, and especially if being referred by ER, or GP, it is important that we state in the report that surgical evaluation and/or MRI is recommended.
Re-Audit

- These results were presented to the staff and residents of the Saskatoon Health Region during a Practice Quality Improvement session in November 2012
- A re-audit of pelvic ultrasounds was performed between November 24th 2012 and February 28th 2013
Reproductive Age Women

- Follicles
- Corpus Luteum
- Simple Cysts
- Hemorrhagic Cysts
- Atypical

Audit
Re-Audit
Improvements Noted – Postmenopausal simple cysts

- This area was identified as deficient in initial audit, with 0% cysts being managed according to guidelines.
- Although not statistically significant, an improvement is seen, with 50% of these cysts being managed appropriately on re-audit.
Improvements Noted – Other Benign Cystic Masses

- During initial audit, 0% of endometriomas, dermoids, or cysts with multiple thin septations were managed according to consensus guidelines.
- Although not statistically significant, an improvement is seen upon re-audit, with 33% of endometriomas, 20% of dermoids and 20% of cysts with multiple thin septations being managed correctly.
- During initial audit, only 25% of cysts demonstrating a nodule without flow were managed according to guidelines, compared to 100% on re-audit.
Next Steps

- Still room for improvement
- Further steps include a set of teaching cases, standardized reporting sheet, and more targeted education (ie to staff and residents who more commonly make errors)
- As well, the results of this re-audit will be presented at the annual departmental research day, in the hopes that by pointing out areas needing improvement, change can be made
References and Acknowledgements

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