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Endosalpingiosis: More than just an incidental finding at the time of gynecologic surgery?

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HIGHLIGHTS

- Endometriosis occurs simultaneously in more than a third of patients with endosalpingiosis.
- Endosalpingiosis is associated with both ovarian and uterine cancers.
- Patients with ovarian cancer and endosalpingiosis have increased prevalence of serous borderline, invasive mucinous, and clear cell histologic subtypes.

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ABSTRACT

Objective. To describe the clinical characteristics of patients with endosalpingiosis (ES) and examine its association with endometriosis and gynecologic malignancies.

Methods. We queried the medical record for patients who underwent gynecologic surgery (Gynecologic Surgery Cohort (GSC), $n = 58{,}161$) from 1998 to 2013 at a single institution for the presence of "endosalpingiosis" (ES). Demographic and clinical characteristics were collected for patients with pathologically confirmed ES ($n = 838$). Within GSC, we compared the frequency of endometriosis and gynecologic malignancies with and without ES. We estimated the expected distribution of ovarian cancer subtypes using cases from the New England Case Control Study (NECC). We used chi-square tests to test for significant differences in frequency distributions and unconditional logistic regression to calculate multivariate odds ratios for the association between ES and ovarian cancer subtypes.

Results. We observed concurrent endometriosis ($p < 0.0001$), uterine cancer ($p < 0.0001$), and ovarian cancer ($p < 0.0001$) more frequently in women with ES. Women from the GSC with ES and ovarian cancer were more likely to have serous borderline (OR = 10.2, 95% CI = 5.1–20.7), clear cell (OR = 3.0, 95% CI = 1.1–8.0), and invasive mucinous tumors (OR = 5.0, 95% CI = 1.5–16.6) as compared to ovarian cancer cases from the NECC without ES, after accounting for age, race, menopausal status, parity, tubal ligation, and endometriosis.

Conclusion. Women with ES are more likely to also be diagnosed with endometriosis, uterine, and ovarian cancers. Further study is needed to understand these associations so we may appropriately counsel patients with ES diagnosed at time of gynecologic surgery.

1. Introduction

Endosalpingiosis (ES) is the presence of ectopic fallopian tube-like epithelium outside of the fallopian tube. The epidemiology of ES and its potential clinical significance and pathogenesis are not well understood. One series estimated the prevalence of ES to be 7.6% in women undergoing laparoscopic surgery for gynecologic conditions and another series found ES present in 12.5% of omental biopsies of female

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patients [1,2]. ES has been described synchronously with endometriosis in up to 34% of cases and has also been associated with pelvic pain and infertility, although others have not validated these findings [1,3–6]. A precursor lesion for high-grade serous ovarian cancers has now been well established in the fallopian tube epithelium, and there is growing evidence that borderline and low-grade serous ovarian malignancies may also arise from fallopian tube epithelium or ectopic tubal epithelium such as ES [7–10]. This raises the possibility that ES may be a precursor lesion for gynecologic malignancy. Thus, this study aims to describe the clinical characteristics of ES and examine its potential relationship to endometriosis and gynecologic malignancies.

2. Methods

Following IRB approval and exclusion of all dilation and curettage, uterine evacuation, or hysteroscopy cases, we identified a Gynecologic Surgery Cohort (GSC) of 58,161 patients who underwent gynecologic surgery over a 15-year period (1998–2013) at a large academic teaching hospital (Brigham and Women's Hospital, Boston, MA) from an institutional surgery database (Fig. 1). We queried the electronic medical record for the presence of "endosalpingiosis" (ES) using QPID® systems [11] and identified 865 women with ES. Of these, we identified 838 that had an ES diagnosis confirmed by a gynecologic pathologist (Group 1) between 1998 and 2013. We abstracted demographic, clinical, surgical, and pathologic data parameters from medical records. Descriptive statistics were utilized to describe the ES cohort in detail.

The Partners Research Patient Data Registry (RPDR), a centralized clinical data warehouse that contains clinical information for all patients seen within the Partners hospital systems, was utilized to examine the entire GSC of 58,161 patients. We abstracted ICD-9 codes for diagnoses of endometriosis (617.0-9), cervical cancer (180.1, 180.8-9, V104.1, 795.06), uterine cancer (179. 182.0-1, V104.2), and ovarian, fallopian tube, or primary peritoneal cancers (183.0, 183.2, 183.8–9, 158.8–9, V104.3) from the entire GSC. Within the GSC, we compared the frequency of endometriosis and gynecologic cancer (cervical, uterine, ovarian) between those with ($n = 838$) and without ($n = 57{,}323$) ES and tested for significant differences between the groups using the chi-square test.

Due to the large number of records, histologic subtype could not be retrieved on women in the GSC without ES and ovarian cancer; thus, we used ovarian cancer cases from a population-based case–control study with a similar catchment area and dates of enrollment as a reference group. Details regarding the study design of the New England Case

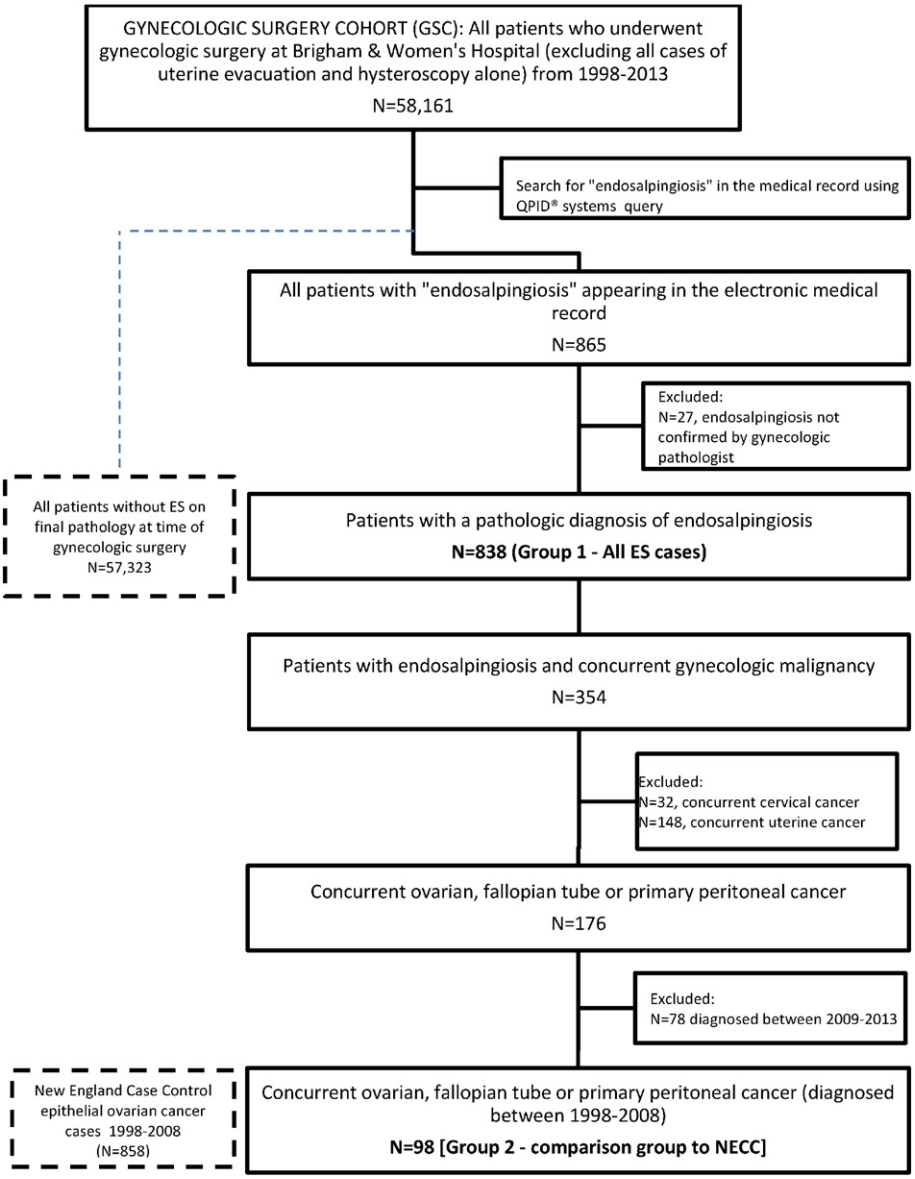

Fig. 1. Flow diagram showing selection of patients with and without endosalpingiosis.