Mucinous ovarian cancer: a rare entity with variable clinical presentation and management

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Background

- Mucinous ovarian tumors are rare, making up 3% of ovarian cancers, and the optimal treatment strategy for this type of malignancy is not well-defined.
- Mucinous ovarian adenocarcinomas, particularly when detected at an early stage, have generally been considered indolent cancers, with low risk for metastasis or recurrence.
- Recent molecular analyses have demonstrated that mucinous ovarian adenocarcinomas represent two separate entities, the more indolent expansile subtype and the more aggressive infiltrative subtype. However, these designations are not commonly characterized in pathology reports.
- The role of lymphadenectomy and appendectomy at the time of surgical intervention for mucinous ovarian neoplasms is unclear.

Objectives

- To describe the histologic subtypes and clinical behavior of mucinous ovarian borderline tumors and adenocarcinomas diagnosed at a single institution.
- To describe the treatment strategies used to manage mucinous ovarian cancers over this time period.

Methods

- **Study population:** Patient with a diagnosis of mucinous ovarian neoplasm at UCLA Ronald Reagan Medical Center between January 2010 and December 2020.
- **Exclusion criteria**: Neoplasms of non-gynecologic origin.
- **Data collection:** Retrospective chart review.
- **Primary outcomes**:
  - Evaluate for consistency in treatment modality
  - Determine histologic predictors of clinical outcomes
- **Statistical analysis**: Chi-square univariate analysis, unpaired t-test

Results

- Of the 44 patients with mucinous ovarian neoplasm identified by ICD code, 6 patients had primary gastrointestinal tract malignancies and were excluded. Our cohort included 38 patients with primary ovarian mucinous borderline tumors or adenocarcinomas.

Table 1. Clinical and demographic features of patient cohort (n = 38)

	Total (n = 38)
Age at Diagnosis (median, years)	55 (17, 78)
Race (self-identified)	
White	26 (68%)
Asian	6 (16%)
Hispanic/Latinx	2 (5%)
Black	0 (0%)
Other/Not identified	4 (11%)
Smoking History	
Yes	13 (34%)
No	25 (66%)
Stage at Diagnosis	
IA	23 (60%)
IC	14 (37%)
II	1 (3%)
Other	0 (0%)
Histology	
Borderline/LMP*	24 (63%)
Adenocarcinoma	14 (37%)
Infiltrative adenocarcinoma	5 (36%)
Non-infiltrative adenocarcinoma	9 (64%)
Primary Treatment Modality	
Surgery alone	34 (89%)
Surgery + Chemotherapy	4 (11%)
Current status	
No evidence of disease	35 (92%)
Alive with disease	1 (3%)
Died of disease	2 (5%)
Follow up Interval (median, months)	23 (1, 113)

*Low malignant potential

Table 2. Types of surgery performed

Surgical intervention	Total (n = 38)
Hysterectomy	
Yes	27 (71%)
No	11 (29%)
Salpingo-oophorectomy	
Unilateral	4 (10.5%)
Bilateral	30 (79%)
None, only cystectomy	4 (10.5%)
Appendectomy	
Yes	26 (68%)
Appendix with pathology	0 (0%)
No	9 (24%)
Previously performed	3 (8%)
Lymphadenectomy	
Yes	22 (58%)
Positive lymph node detected	0 (0%)
No	16 (42%)

Table 3. Association of clinical and histologic factors with prognosis

	No recurrence	Recurrent or progressive disease	p-value
Age (mean)	52	43	0.45
Smoking status			
Yes	13	0	0.5
No	22	3	
Histology			
Infiltrative	2	3	**0.0013***
Non-infiltrative	32	0	
Stage			
IA	23	0	0.08
>IA	15	3	

Conclusions

- There is wide variability in the surgical management of patients with mucinous ovarian neoplasms, with 58% undergoing lymphadenectomy and 68% undergoing appendectomy. Despite the common practice of these two procedures, there were no positive lymph nodes and no appendiceal pathology noted in this cohort.
- All patients with poor clinical outcomes (recurrent or progressive disease) had infiltrative-type mucinous ovarian adenocarcinomas, and 2 of 3 of these patients are deceased.
- Infiltrative histology was the only predictor of poor outcome in this cohort.
- The reporting of infiltrative vs non-infiltrative mucinous ovarian tumor subtype is important in determining prognosis and may help guide adjuvant treatment.