



ORIGINAL ARTICLE

Pathologic findings in women with atypical glandular cells on Pap test

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KEYWORDS

AIS,
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Introduction It has been shown that a significant subset of atypical glandular cells (AGC) indicates underlying malignancies. Therefore, it is imperative to recognize, diagnose, and treat these lesions early. We evaluated the clinical significance of AGC on cervical cytology in our hospital.

Materials and methods A total of 376 consecutive Pap tests with a diagnosis of AGC between January 2005 and January 2011 at a tertiary community hospital were reviewed and correlated with concurrent or follow-up histopathology.

Results Over a 6-year period 376 (0.23%) Pap tests were reported as AGC. Histopathology was available in 223 cases. Atypical hyperplasia, dysplasia, or malignant lesion was found in 128 (57.4%) cases. Of these, 80 (62.5%) were glandular lesions. In women younger than 48 years benign lesions (52.9%) were more common. Women who were 48 years and older were more likely to have a malignant glandular lesion (56 out of 73, 76.7%) compared with women under 48 years, who were more likely to have a malignant squamous lesion (31 out of 55, 56.4%). This difference was statistically significant ($P = 0.002$). Malignant lesion was seen in 58 (26%) of the women. Endometrial carcinoma (30 cases) was the most common malignancy—51.7% of the malignant lesions and 13.4% overall. Chronic cervicitis and endometritis were the most common non-malignant findings.

Conclusion AGC on Pap test may be the initial manifestation of a wide range of cervical pathologies. Because many AGC diagnoses did not have a histopathological follow-up, clinicians should be more diligent at having patients follow up, especially in peri- and post-menopausal women.

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Introduction

Cervical squamous carcinoma has shown a consistent decline since the advent of liquid-based cytology; nevertheless, cervical glandular cancers remain a major challenge to cervical cancer prevention efforts as cervical adenocarcinomas continue to increase.¹ Even though several studies have shown limited reproducibility of atypical glandular cells (AGC) in Pap tests, a significant subset of AGC cases indicate underlying high grade squamous lesions, endocervical adenocarcinoma in situ (AIS), invasive cervical and uterine carcinomas, or adnexal carcinomas. It is imperative to recognize, diagnose, and treat these lesions early, and AGC Pap tests can help, at least in part, by proper triage. The present study evaluates the clinical significance of a diagnosis of AGC on cervical cytology in our hospital.

Materials and methods

After appropriate institutional review board approval, the cytopathology database at Ben Taub General Hospital was searched for all cases of AGC diagnosed between January 2005 and January 2011. The interpretation of Pap tests during this period was based on the criteria as defined by the 2001 Bethesda System. The diagnostic categories included during the search were atypical glandular cells-not otherwise specified (AGC-NOS), AGC-endometrial (AGC-EM) and AGC-endocervical (AGC-EC), and AGC-favor neoplastic (AGC-FN). All cases with a diagnosis of AGC, either alone, or with a coexistent squamous abnormality, were included in the study. The corresponding surgical pathology reports were retrieved wherever possible. The surgical pathology specimens included concurrent or follow-up cervical biopsies, endocervical curettages, loop electrosurgical excision procedures (LEEPs), cold knife conizations, endometrial biopsies and curettages, and hysterectomies with or without salpingo-oophorectomies. The clinical information regarding demographic data, presenting chief complaints, subsequent treatment, and follow-up

Table 1 Age distribution, available histology, and follow-up lesion in the studied cases.

| | Number | Percent (%) |
|--------------------------|--------|-------------|
| Total cases | 355 | 100 |
| Age distribution | | |
| <48 y | 196 | 55.2 |
| ≥48 y | 159 | 44.8 |
| Histopathology available | 228 | 64.2 |
| < 48 y | 117 | 59.7 |
| ≥ 48 y | 106 | 66.7 |
| Significant lesion | 128 | 56.1 |
| Glandular lesion | 80 | 62.5 |
| Squamous lesion | 48 | 37.5 |

Table 2 Age distribution of premalignant and malignant lesions.

| | Age < 48 y | Age ≥ 48 y | P value |
|-------------------------|------------|------------|---------|
| | N = 55 | N = 73 | |
| Squamous lesions | 31 (56.4%) | 17 (23.3%) | 0.002 |
| Glandular lesions | 24 (43.6%) | 56 (76.7%) | |
| Invasive adenocarcinoma | 10 (18.2%) | 33 (45.2%) | 0.02 |

information was retrieved using our hospital's electronic medical records system. In this study surgical pathology findings of malignant lesions and premalignant lesions (squamous and glandular in situ lesions and atypical hyperplasias) were deemed significant. For comparison and statistical analysis the cases were dichotomized depending on the age of the patient into group 1 (women < 48 years of age) and group 2 (women ≥ 48 years of age). Fischer exact test was used for statistical analysis. A *P*-value of 0.05 or less was considered significant.

Results

Over the 6-year period, 376 out of 162,653 Pap tests (0.23%) were reported to have AGC either alone or with a concurrent squamous abnormality. Fifteen patients had the Pap test repeated once and 3 had it repeated twice. Thus, a

Table 3 Age distribution of follow-up findings on biopsy.

| | Age < 48 y | Age ≥ 48 y | Total | P value |
|---------------------------------------|------------|------------|-------------|---------|
| | N = 117 | N = 106 | N = 223 | |
| Benign lesions | 62 (52.9%) | 33 (31.1%) | 95 (42.6%) | 0.03 |
| Premalignant/ malignant lesions | 55 (47.1%) | 73 (68.9%) | 128 (57.4%) | |
| Squamous lesions | 31 (26.5%) | 17 (16.4%) | 48 (21.5%) | 0.15 |
| CIN 1 | 14 (11.9%) | 6 (5.7%) | 20 (8.9%) | |
| CIN 2 | 3 (2.6%) | 3 (2.8%) | 6 (2.8%) | |
| CIN 3 | 9 (7.7%) | 6 (5.7%) | 15 (6.7%) | |
| Invasive carcinoma | 5 (4.3%) | 2 (1.9%) | 7 (3.1%) | |
| Glandular lesions | 24 (20.6%) | 56 (52.8%) | 80 (35.9%) | <0.01 |
| Benign | 8 (6.8%) | 18 (17%) | 26 (11.7%) | |
| Atypical hyperplasia | 0 | 3 (2.8%) | 3 (1.3%) | |
| AIS | 4 (3.4%) | 0 | 4 (1.8%) | |
| Endocervical carcinoma | 3 (2.6%) | 10 (9.4%) | 13 (5.8%) | |
| Endometrial carcinoma | 7 (5.9%) | 23 (21.7%) | 30 (13.5%) | |
| Miscellaneous ^a | 2 (1.7%) | 2 (1.9%) | 4 (1.8%) | |

Abbreviations: AIS, adenocarcinoma in situ; CIN, cervical intraepithelial lesion.

^aMiscellaneous glandular lesions are 1 case of metastatic colon cancer and 3 cases of ovarian carcinoma.

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