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Research Article

CYTO- HISTOLOGICAL CORRELATION OF CERVIX LESION

Nasheen Fathima K[1*], Patil AM[2], Patil S[3], Sajjanar BB[4], Yendigeri SM[3], Arifulla K[3]

[1]Assistant professor, Department of Pathology, AL-Ameen Medical College, Vijayapur, India
[2]Professor and HOD, Department of Pathology, AL-Ameen Medical College, Vijayapur, India
[3]Associate professor, Department of Pathology, AL-Ameen Medical College, Vijayapur, India
[4]Professor, Department of Pathology, AL-Ameen Medical College, Vijayapur, India

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*Corresponding Author: **Nasheen Fathima**
Assistant professor, Department of Pathology, AL-Ameen Medical College, Vijayapur, India, Mobile number: 9986601067

ABSTRACT

Objective: To correlate cervical cytology with cervical histology,

Methodology: A hospital based prospective study done between 1 sep 2006 to march 2008 on symptomatic patients attending gynecology OPD of Al-Ameen medical college ,District hospital .Pap smear was carried out using Ayres spatula by conventional technique ,biopsy specimen included cervix punch biopsy specimen ,hysterectomy specimen .patient profile in terms of age ,age at menarche ,parity ,age at first child birth, and symptoms were taken.pap smear reports and biopsy reports were collected in questionnaire form. Reporting of pap smear was done in Bethesda system. Statistical analysis was done by chi-square test.

Results: Of 100 cases who underwent cervical cytology 52cases were of benign lesion ,18 cases of LSIL,20 cases of HSIL,4 cases of carcinoma and 6 cases of ASCUS. Sensitivity, Specificity, positive predictive value ,negative predictive value, diagnostic accuracy and p-value in benign lesion was 77%,87%, 90%,70.8%,80%,0.0004 respectively. Sensitivity, Specificity, positive predictive value , negative predictive value, diagnostic accuracy and p-value in LSIL was60.8%,94%,77%,89%,67%,0.0008respectively. for HSIL it was 50%,60%,56%,100%,58% 0.0001 respectively .Respectively for carcinoma it was 100% for Sensitivity, Specificity, positive predictive value ,negative predictive value, diagnostic accuracy and p-value was 0.0008.

Conclusion: pap smear significantly correlated with cervical histology for benign inflammatory lesion .and frank malignancy ,but has poor sensitivity for LSIL and HSIL.

Keywords: Pap smear, Histology, Correlation, Diagnostic accuracy, Sensitivity, LSIL, HSIL

INTRODUCTION

The uterine cervix is an important organ in disease presentation, range of diseases and its propensity to undergo various inflammatory, dysplastic and neoplastic lesions. Cervical cancer is the second most common cancer in women worldwide, and represents 12% of all female malignancies[1] .Not only is the cancer common but also the pre malignant lesion are common ,which when detected can be treated ,treatment is effective in reducing the chance of progression to invasive disease[2] .Here lies the role of screening test and also the fact that cancer of the cervix is the only gynaecological cancer that satisfies the well recognized WHO criteria for implementation of screening programme[3].

Like all other tests it has both advantages and disadvantages. Hutchinson et al. state an important function of cervical cytology is to stratify patients according to cancer risk[4] . The success of pap smear has resulted in unrealistic expectation with a consequence rise in litigation cases when false negative arises[5].

METHODOLOGY

A hospital based prospective study done between 1 sep 2006 to march 2008 on symptomatic patients attending gynecology OPD of Al-Ameen medical college ,District hospital Subjects for study were cases, referred, admitted or examined in the hospital with specific gynaecological complaints and female above age of menarche. Pap smear was carried out using Ayres spatula by conventional technique ,biopsy specimen included cervix punch biopsy specimen ,hysterectomy specimen .patient profile in terms of age ,age at menarche ,parity ,age at first child birth, and symptoms were taken. Patient consent was taken before carrying out cervix biopsy .Pap smear were reported in Bethesda system and various errors like sampling error, adequacy determination error, interpretive error were noted and necessary correction done. pap smear reports and biopsy reports were collected in questionnaire form.pap smear was stained with pap stain and biopsy was stained with H&E Stain .Statistical analysis was carried out using the χ^2 test or Fisher exact test.

RESULTS

Total number of pap smear done during study period were 122 ,out of which 12 did not have histology correlation,8 were inadequate and 2 were unsatisfactory ,so only 100 cases were taken for study of which cytologically 52 were inflammatory, LSIL in 18 ,HSIL were in 20 carcinoma was in 4 cases and histopathologically. 42 reactive/ inflammatory,14 were CIN-I ,12 were CIN –II and CIN-III ,4 were carcinoma respectively. Further it is seen that 5 cases of benign cellular changes showed CIN-I change which were not picked by pap smear. No separate histologic category for cytologic correlate of ASCUS. In LSIL category 14 were proved by biopsy as CIN-I lesion and 4 were benign cellular changes, hence 4 were falsely recorded positive by pap smear.IN HSIL category 12 were proved by biopsy as CIN-II / III, 6 were benign reactive and 2 were CIN-I changes. It reveals that pap smear could not picked up 8 cases of CIN-II / III. Table 1 shows the details about the profile of all 100 cases on whom smear and biopsy were taken. Table 2 shows good correlation between pap smear and cervical biopsy findings. Table 3 shows different statistical value for pap smear for different grades of disease.

Table 1: Patient Profile

Mean age of the patients	35years
Mean age of menarche	13 years
Mean age at first child birth	15.9years
Mean parity	4
Use of contraceptive	25
Patient of WDPV	59

Table 2: Cytohistological Correlation n = 100

Cytologic Diagnosis		Histologic Diagnosis			
	Number	Negative / reactive cellular changes	CIN I	CINII/II	Carcinoma
Benign Cellular changes	52	47	5		
Atypical squamous cell of uncertain significance	6	4	2		
Low grade squamous intraepithelial lesion	18	7	7		
High grade squamous intraepithelial lesion	20	6	12	2	
Carcinoma cervix	4				4

Table 3: Different statistical value for pap smear for different grades of diseases

Particulars	Benign	LSIL	HSIL	Carcinoma
Sensitivity	77	60.8	50	100
Specificity	87	94.8	60	100
Positive Predictive Value	90	77.7	56	100
Negative Predictive Value	70.8	89.02	100	100
Accuracy	80.3%	67%	58%	100%
'p' Value	P=0.0004	p=0.0008	p=0.0004	p=0.00008

DISCUSSION

Present study enhances the importance of role of Pap smear in gynaecology cytology. Cytologic-histologic correlation provides critical information on necessary patient follow up by resolving Pap-biopsy discrepancies or confirming discrepant diagnoses as correct, or both. It provides a mechanism with which to monitor the performance and processes of the laboratory to improve overall quality[6]. Cytology/Biopsy correlation is useful for the evaluation of a laboratory's Quality Index. Which may be shared clinically, and may direct the management for maximum diagnostic and patient benefit[7]. The sensitivity is good for benign and 100% for malignancy. Likewise the positive predictive value was highest for malignancy followed by benign lesion, LSIL, HSIL .This was similar to study by Bendet J-L in which PPV was 91.8% and lowest for benign (35%)[8] . The low sensitivity of present study for HSIL and LSIL goes in accordance with study of MONA B in which the sensitivity, specificity, PPV, and NPV of HR-HPV DNA detection in ASC-H vaginal Pap tests for any degree of SIL were 75%, 69.2%, 75%, and 69.2%, respectively[9]. In our study low PPV for LSIL and HSIL can be because cytology and histology slides were reviewed only once and only conventional technique was used thus enforcing need for continuous monitoring system and periodic review of slides and implementing of new diagnostic modality.

CONCLUSION

Pap smear correlated significantly with histology with a need for new modalities. Pap smear screening also forms important part of quality assurance for lab and also improves patient care.

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