

Comparison and Correlation of Pap Smear with Colposcopy and Histopathology in Evaluation Of Cervix

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ABSTRACT

Papanicolaou (Pap) is the main diagnostic tool for cervical intraepithelial neoplasm (CIN) and recurrent cervical cancer. Simultaneous applications of cytological testing and colposcopy screening have been found to grow the likelihood of detecting cervical cancer.

There is also a clear need for women with possibly dangerous cervix to be subjected to colposcopy and controlled biopsy. This work is being undertaken to develop the function of colposcopy in the diagnosis of unhealthy cervical disease. A systematic empiric review of 104 patients who visited the KIMS Gynecology OPD between May 2012 and May 2014 (two years) was performed. Colposcopy is certainly more flexible and accurate than pap. By integrating Colposcopy and Pap, we will improve the efficacy and accuracy of cervical cancer screening.

Keywords: Cervix, Correlation, Pap Smear, Screening, Cervical, Cancer

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INTRODUCTION

Sick cervix is a chronic phenomenon in our nation owing to inadequate genital health, multiparity and malnutrition.¹ The naked eye measurement of unsafe cervix is often inaccurate and intraepithelial lesions are known to be clear cases of inflammatory degradation. Cancer growth cervix is a genuine medical issue in India². Which represents one 6th of the total populace likewise fifth of weight of the world's cervical disease. Down arranging of cervical malignant growth is 'the recognition of the illness at a previous stage when it is as yet reparable. Discovery is finished by medical caretakers and other paramedical wellbeing laborers utilizing a basic speculum for visual review of cervix. In locations where the prevalence of malignant growth is high and cytological screening is not accessible, bottom-up systematic screening is valuable. It can unquestionably limit the disease passing through early detection.³

AIMS AND OBJECTIVES

Pap study results were consistent with colposcopic observations and biopsy results. Limit the injury to the colposcopy and get a biopsy. To offer adequate care at any moment.

REVIEW OF LITERATURE

Cervical cancer is one of the most well known and possibly more preventable human cancers. Anatomical sensitivity of the cervix for close inspection and lengthy pre-clinical period during which 95% of precursor lesions may be managed conservatively and safely, allowing cervical cancer the perfect candidate for screening and diagnosis.⁴ Cervical cancer leading is the main concern of Indian ladies, with in 1,26,000 new cases and 70,000 deaths cases for every year. Cancer status in East Asia is higher than conception in developed countries for 7%. This is the opposite of 24% in developing countries. The discrepancy is largely due to the gap between diagnosis and care of precancerous lesions.⁵ A screening test should be simple, minimally invasive, easy to perform, cost-effective and highly sensitive that can be applied to a large number of apparently healthy individual's participation in regular cervical screening program decreases the mortality rates of cervical cancer. The success of screening program is directly related to method used,

available financial resources and is influenced by the patients cultural and educational background.

MORPHOLOGY OF UTERINE CERVIX

Cervix is the narrowed, caudal portion of the uterus. It is conical in shape with a truncated apex directed downwards and backwards it measures 2.5 cm and is continuous above with the body of the uterus and below it protrudes into the vagina forming fornices. The four fornices are anterior, posterior and two laterals. The posterior fornix is deeper than the anterior. The junction between cervix and corpus is called isthmus.

Transformation Zone

Metaplasia moves from the first SCJ internal, close to the outer OS and onto the columnar villi. This procedure builds up a territory called the 'transformation zone'. The transformation zone stretches out from the original SCJ to the physiologically dynamic SCJ. As the metaplastic epithelium in the change zone develops, it starts to deliver glycogen and inevitably looks like the first squamous epithelium, colposcopically and histologically.⁶

The original squamous epithelium of the vagina and ectocervix has four layers.⁶

1. Basal layer (Stratum Germinatum): It rests on the basement membrane. It consists of a single row of cuboidal or columnar cells with scanty basophilic cytoplasm and centrally placed round to oval large nucleus.
2. Parabasal or Prickle cell Layer. It is above the basal layer 4-10 cells in thickness consisting of large polyhedral cells with basophilic cytoplasm and centrally placed nucleus, arranged in an irregular mosaic pattern.
3. Intermediate cell layer: It forms the bulk of the epithelium. It is also called clear cell layer. The cells are large oval to polygonal with irregular vesicular nuclei and give a characteristic basket weave pattern. The cytoplasm is rich in glycogen.
4. Superficial or Stratum corneum layer: consists of flattened, elongated or polygonal cells with acidophilic cytoplasm and small pyknotic nuclei. The cells detach from the surface (exfoliation).

AETIOPATHOGENESIS

1. Age - It occurs at about 50-55 years of age. CIN occurs at a much lower age, 1/3rd of cases found in women less than 30 years.
2. Sexual activity, marriage and childbearing - Sexually active woman is two to four times more likely to develop cancer than in sexually inactive woman. Younger age, multiple sexual partners and higher parity at first intercourse have been implicated as risk factors for CIN and cervical cancer.⁷
3. Race - The women of certain races, notably orthodox jews are almost immune to cervical cancer, carcinoma cervix is unusually in Africans.
4. Social and economic factors - the disease is more prevalent in women living in poor conditions.
5. Coitus - the practice of coitus is now established as being a prime cause of cervical malignant disease. It is almost unknown in groups of nuns and virgins. Early age of 1st intercourse and multiple partners are associated with higher risk of developing cervical cancer.

NORMAL CYTOLOGY

Two types of epithelia are present within the uterine cervix
 (1) Non-keratinizing squamous epithelium lining ectocervix.
 (2) Columnar epithelium lining endocervix.
 (3) Both these epithelia are under hormonal control.
 Cervical epithelium consists of following cells:
 Superficial squamous cells: mature, usually polygonal squamous epithelial cells. Cytoplasm is eosinophilic and nucleus is pyknotic. Intermediate squamous cells: Mature, polygonal squamous epithelial cells, the cells are of same size

as superficial cells. Their cytoplasm is eosinophilic and nuclei vesicular. Parabasal cells the cells are oval or round immature squamous epithelial cells The cytoplasm is basophilic with smooth cytoplasmic borders. Basal cells: if basal cells are present in the smear, it can be assumed that a Pathologic process has damaged the upper layers of squamous epithelium. The cytoplasm is basophilic and scanty the nuclei are of the same size as parabasal cells.^{8,9}
 Advantages of cytology are ideal for mass screening, high specificity, easy to perform, less time taken to obtain the diagnosis and detection of lesion in endocervical canal. Disadvantages of cytology are low sensitivity, need for laboratory with high human expertise, not possible to locate the lesions and high cost.

MATERIAL AND METHODS

Sources of Date

The study was conducted in a systematic empirical. with a 104 number of patients who attended in KIMS gynecological OPD between May 2012 and May 2014 (2 years).

Method of Date Collection

Informal acceptance is obtained from every patient. The previous case related obstetrics and gynecology was reported and registered.

OBSERVATION AND RESULTS

104 Patients according to the consideration and prohibition standards going to KIMS Gynecology OPD were considered for the examination and patients were exposed to pap smear, colposcopy and biopsy in the wake of taking educated assent.

Table 1: Age Wise Distribution

Age	No. of CIN cases=31	No. of Cases	Percentage
< 20	0	16	15.38%
21 to 30	CIN1=7 CIN2=1	25	24.03%
31 to 40	CIN1=8 CIN2=1 CIN3=1 Sq cell ca=1	43	41.34%
41 to 50	CIN1=10 CIN2=1	12	11.53%
51 and above	CIN1=1 CIN2=1	8	7.69%
Total	32	104	100%

In terms of age range, a large prevalence of CIN was observed in the age group aged 31 to 50 years.

Table 2: Correlation of Pap Smear with Biopsy

Pap Smear Findings	Biopsy Findings					
	Cervicitis	CIN1	CIN2	CIN 3	Sq cell ca	Total
Normal	22					22
Inflammatory	46	21	1			68
HSIL			3	1		4
LSIL	4	3	2			9
Malignancy					1	1
Total	72	24	6	1	1	104

Pap smear with biopsy correlation
 Sensitivity= 10/32 x100 = 31.25%
 Specificity= 68/72 x 100 = 94.44%
 PPV= 10/14 x 100 = 77.42%
 NPV= 68/90 x 100 = 75.55%

Accuracy= $10+68/104 \times 100 = 75\%$

Pap smears has been seen in both situations. Inflammatory smear was seen in 65 percent of instances, HSIL at 3.84 per cent. and LSIL at 8.65 per cent. Responsiveness to Pap Frottis was found to be quite small, which was 31.25 percent compared to its 94.44 percent specificity. That indicates that the Pap Diffraction has no higher false negative diffractions.

DISCUSSION

Cervical disease is the second most common cancer growth in the modern world after breast cancer disease. Nonetheless, cervical cancer growth of the cervix can be forestalled in light of the fact that it is connected with a drawn out pre-intrusive period (CIN) which makes it responsible for diagnosis and screening.

In this sample, screening was conducted in 104 people with adverse signs such as genital leaking, intermenstrual bleeding, postcoital bleeding, postmenopausal bleeding and recurrent leukorrhoea. People of unhealthful cervix and frequent inflammatory results reported. A higher frequency of age distribution CIN was observed at 31 to 50 years of age. According to Anujabhalla et al., study indicated that the incidence of CIN among women over 30 years of age was higher.¹⁰

As far as literacy is concerned, CIN was more widespread amongst the illiterate; in our survey, 40.62 percent (13 out of 32) of CIN was classified as an illiterate group. And 40.62 percent (13 out of 32) were observed in patients undergoing research necessary to refer to the 10th century. This was due to lack of knowledge about the signs and lack of medical care.

CONCLUSION

Effective detection of CIN in young females is a positive goal. CIN lesions and suspected invasive cancer will be diagnosed at an early point of initiation. Adequate control. Invasive cervical cancer is considered preventable because it is associated with a long pre-invasive period (CIN) that makes it responsible for screening and diagnosis.

It is clear from the findings of this analysis that colposcopy is certainly more sensitive and precise than pap. Through integrating Pap and Colposcopy, we will improve the efficacy and accuracy of cervical cancer screening.

Colposcope usually plays a part in the identification of patients with defective pap, unhealthful cervix, and appears

to be high successful in the detection of CIN. Primary colposcopy can also be introduced into the screening process at the beginning of the seizures. Colposcopy is also an important tool for the evaluation of cervical sores. It is a clear and informative device, and its necessary resides in the preparation, treatment and control of cervical sores, both neoplastic and non-neoplastic. Colposcopy procedures will be developed and encouraged in all medical institutions for the evaluation and treatment of patients with chronically compromised cervix and uncommon pap smear.

CONFLICT OF INTEREST

None

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