



RESEARCH ARTICLE

STUDY OF HISTOMORPHOLOGICAL SPECTRUM OF LESIONS OF UTERINE CERVIX

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ABSTRACT

Gynecological specimens form a major bulk of histopathology laboratory. Aim of this study was to determine the frequency and histomorphological patterns of lesions of the cervix. This was a 2 year retrospective study done in a tertiary care hospital. A total of 600 cases were retrieved from histopathology department and evaluated. The age group of the patients was between 20-75 years. It was concluded that about 79% cases were non-neoplastic and 21% were neoplastic. The most common of all these lesions was chronic non-specific cervicitis. All the lesions of cervix were common in age group of 41-50 years followed by 31-40 years. Large cell non-keratinizing squamous cell carcinoma was the most common carcinoma.

INTRODUCTION

The uterine cervix is prone to develop several non-neoplastic and neoplastic gynaecological lesions. The squamocolumnar junction is the region where the precancerous lesions and carcinoma develop (Wahi *et al.*, 1972 and Abell and Ramirez, 1973). Carcinoma of the female genital tract particularly carcinoma of cervix accounts for almost 12% of all carcinoma in women, and so represents the second most frequent gynaecological malignancy in the world (Hausen, 2002). In India, cervical cancer is the most common cancer among women accounting for 25.9% of new cancer cases and 23.3% of all cancer related deaths. The incidence is approximately 90,000 of new cases of cervical carcinoma every year (Panday *et al.*, 2005). Non-neoplastic diseases of the cervix are predominantly inflammatory in nature but they at times resemble carcinoma clinically. Complete and accurate assessment of these lesions relies on three methods: Colposcopic examination, cervical cytology and histopathology of biopsy specimen. Histopathological examination of biopsy specimen is however the single best gold standard for the diagnosis (Aravind Pallipady *et al.*, 2014). Familiarity with these features is essential in early diagnosis of the cervical lesions and prevents progression of preinvasive lesions to invasive carcinomas which also helps in their appropriate management.

So, present study was undertaken to study histomorphological features of all neoplastic and non-neoplastic lesions of cervix along with distribution of these lesions in different age groups.

MATERIAL AND METHODS

This was a 2 year retrospective study carried out at tertiary care centre. Institutional Ethics Committee permission was taken. Total 600 gynaecological specimens received were studied with relevant clinical details and subjected for histopathological examination. Specimens were fixed in 10% formalin. Representative sections were taken and processed, embedded in paraffin blocks. Serial sections of 4-5 µm thickness were taken and stained with hematoxylin and eosin. Special stains were used wherever required. Evaluation was done under light microscope.

Inclusion Criteria

Cervical biopsies, hysterectomy specimens, conization and polypectomy specimens and endocervical curettage were included.

Exclusion Criteria

Lesions arising from uterus, vulva, vagina and parametrium or with lesions arising from neighbouring organs extending in cervical canal but not involving cervical tissue were excluded.

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RESULTS

A total number of 3723 surgical specimens were received, out of which 1841 specimens were gynaecological specimens. So the gynaecological specimens in our study constituted 49.44% of all surgical specimens, out of this 15.64% were cervical specimens. Various types of cervical specimens received were hysterectomy specimens (most common- 421), cervical biopsies, polypectomy specimens and endocervical curettage (Fig 1).

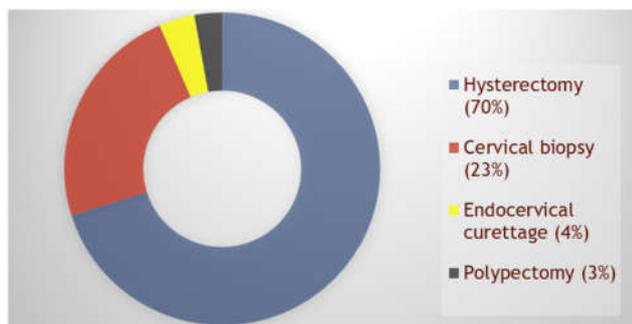


Fig. 1. Frequency of cervical specimens

In the present study, malignancies were common in age group of 41-50 years, CIN and benign neoplastic lesions were seen in 3rd to 5th decade, inflammatory lesions were common in 30-60 years 90 (Table 1). 1 case of cervical pregnancy was also observed. Mean age for malignant lesions was 53.64 years whereas overall mean age for cervical lesions was 46.85 years.

These lesions were commonly found in sexually active age group i.e. 30-50years. Mean age of inflammatory lesions was 46.20 years. Most common associated change observed with chronic non-specific cervicitis was koilocytic change (8.08%) which is pathognomonic of HPV infection. Squamous metaplasia was seen in 6.46% cases whereas nabothian cyst in 5.39% cases. Clinical diagnosis of patients with chronic non-specific cervicitis was prolapse followed by fibroid uterus and dysfunctional uterine bleeding. Other clinical diagnosis were adenomyosis, endometrial carcinoma, pelvic inflammatory diseases, carcinoma cervix etc.

Among benign neoplastic lesions endocervical polyp (Fig. 2) (84.61%) was the common lesion observed with common age group of 40-50 years. Many patients with endocervical polyp had clinical diagnosis of polyp itself followed by fibroid uterus whereas leiomyoma was observed in patients with fibroid uterus.

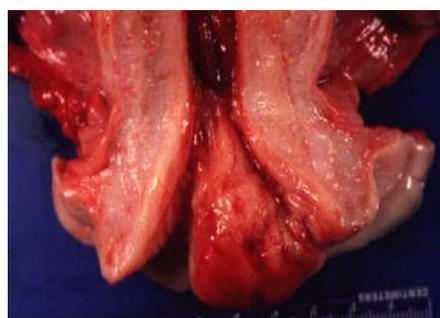


Fig. 2. Gross photograph of endocervical polyp

Table 1. Distribution according to age groups

| Age | <30 | 31-40 | 41-50 | 51-60 | 61-70 | >70 | Total |
|-----------------------------|-----|-------|-------|-------|-------|------|-------|
| NON-NEOPLASTIC | | | | | | | |
| Inflammatory | 22 | 154 | 182 | 75 | 38 | 2 | 473 |
| Cervical pregnancy | 1 | 0 | 0 | 0 | 0 | 0 | 1 |
| NEOPLASTIC | | | | | | | |
| A) Benign | 1 | 13 | 12 | 0 | 0 | 0 | 26 |
| B) CIN | 1 | 7 | 10 | 6 | 4 | 0 | 28 |
| C) Micro-invasive Carcinoma | 0 | 3 | 1 | 0 | 0 | 0 | 4 |
| D) Malignant | 4 | 10 | 20 | 15 | 16 | 3 | 68 |
| Total | 29 | 187 | 225 | 96 | 58 | 5 | 600 |
| Percentage (%) | 4.8 | 31.16 | 37.5 | 16 | 9.6 | 0.83 | 100 |

Table 2. Histopathological distribution of cervical lesions

| Type of lesion | Number of cases | Percentage (%) |
|----------------------------|-----------------|----------------|
| NON-NEOPLASTIC | 474 | 79 |
| Inflammatory | 473 | 78.83 |
| Cervical pregnancy | 1 | 0.17 |
| NEOPLASTIC | 126 | 21 |
| A) Benign | 26 | 4.32 |
| Endocervical polyp | 22 | 3.66 |
| Leiomyoma | 4 | 0.66 |
| B) CIN | 28 | 4.67 |
| C) Microinvasive Carcinoma | 4 | 0.67 |
| D) Malignant | 68 | 11.33 |
| Squamous cell carcinoma | 64 | 10.66 |
| Adenocarcinoma | 2 | 0.33 |
| Adenosquamous carcinoma | 2 | 0.33 |
| Total | 600 | 100 |

It was also observed that, inflammatory lesions were the most common lesions followed by malignancy and carcinoma in situ (Table 2). Among inflammatory lesions chronic non-specific cervicitis was most common lesion followed by papillary endocervicitis.

CIN was seen in 4.67% cases, commonly in age group of 30-50 years and CIN II was predominant grade. Cervical intraepithelial neoplasia were mainly of squamous cell type and patients presented with history of PV bleeding.

No case of cervical intraepithelial glandular neoplasia found in this study. Among carcinomas, Squamous cell carcinoma was the predominant histologic type of cervical malignancy (Table 3).



Fig. 3. Large cell non- keratinising Squamous cell carcinoma



Fig. 4. Adenocarcinoma

Large cell non-keratinising sub type of squamous cell carcinoma (Fig 3) was most common (64.06%) followed by keratinising sub type.

One case of basaloid SCC was also seen. In 75% cases of SCC cervical growth was observed and 50% cases presented with post-menopausal bleeding. One case of adenocarcinoma (Fig. 4) presented with mass per vaginum and foul smelling white discharge whereas another case presented with post-menopausal bleeding. One case of adenosquamous carcinoma presented with post coital bleeding.

DISCUSSION

Over the period of 2 year study, department of pathology received 600 cervical specimens i.e. 15.64% out of total 3723 surgical specimens. Thus, cervical specimens form a significant part of surgical pathology section of this department. Poste *et al.* (2015) also found the same finding (16.01%) in their study carried out in Gulbarga district. Hysterectomy was the most common specimen received in our study as well as Poste *et al.* (2015) and Srivani *et al.* (2015) study.

Non-neoplastic lesions were common lesions found in our study as well as in above studies. Most common age group in present study is 41-50 years which is in coordination with Srivani *et al.* (Srivani Saravanan, 2015) study (Table 4). Chronic non-specific cervicitis constituted the majority of cervical lesions, with about 371 (61.83%) cases being reported during the study period which was also seen in Gausia *et al.* (2013), Poste *et al.* (2015) and Solapurkar *et al.* studies (Table 5). CNSC is rare before menarche or after menopause, this finding in our study correlated with the study of Lowe *et al.* (Lowe, 1988). Chronic nonspecific cervicitis with koilocytic change was found in 8.08% cases in the age group of 30-50years where as it was 12.8% of cases in a study done by Poste *et al.* (2015).

Table 3. Histologic type and age wise distribution of carcinomas

| Age | <30 | 31-40 | 41-50 | 51-60 | 61-70 | >70 | Total | Per (%) |
|-------------------------|-----|-------|-------|-------|-------|-----|-------|---------|
| Squamous cell carcinoma | 3 | 9 | 19 | 14 | 16 | 3 | 64 | 94.2 |
| Adenocarcinoma | 0 | 1 | 0 | 1 | 0 | 0 | 2 | 2.9 |
| Adenosquamous carcinoma | 1 | 0 | 1 | 0 | 0 | 0 | 2 | 2.9 |

Table 4. Comparative study of age wise distribution of cervical lesions

| Age | Shrivani <i>et al.</i> | Present study |
|-------|------------------------|---------------|
| <30 | 29 (3.6%) | 29 (4.8%) |
| 31-40 | 208 (26.2%) | 187 (31.20%) |
| 41-50 | 309 (38.9%) | 225 (37.5%) |
| 51-60 | 161 (20.3%) | 96 (16%) |
| >60 | 87 (10.9%) | 63 (10.5%) |

Table 5. Distribution of cervical lesions

| Type of lesion | Gausia <i>et al.</i> (2013) | Poste <i>et al.</i> (2015) | Solapurkar <i>et al.</i> (1985) | Present study |
|---------------------------|-----------------------------|----------------------------|---------------------------------|---------------|
| NON-NEOPLASTIC | | | | |
| CNSC | 88.53% | 62.93% | 59.78% | 61.83% |
| PEC | 0.85% | 11.26% | 2.3% | 17% |
| NEOPLASTIC | | | | |
| A)Benign | | | | |
| Endocervical polyp | 0.85% | 4.68% | 1.43% | 3.66% |
| Leiomyoma | - | 1.5% | - | 0.66% |
| B)CIN | 0.15% | 4.04% | 1.15% | 4.67% |
| C)Squamous cell carcinoma | 0.28% | 12.46% | 30.64% | 10.66% |
| D)Adenocarcinoma | 0.14% | 0.23% | 0.41% | 0.33% |
| E)Adenosquamous carcinoma | 0.14% | 0.15% | 0.20% | 0.33% |

Chronic nonspecific cervicitis with nabothian cyst were found in 5.39% cases in the common age group of 30-50 years. The results found in this study were correlated with the study conducted by Poste *et al.* (2015) (7.37% cases). Polypoidal endocervicitis, as noted in 27.4% of cases was slightly higher than the study conducted by Poste *et al.* (2015). In benign neoplastic lesions endocervical polyp was the most common lesion found in our study and age range of endocervical polyp was 30-50 years which correlates well with findings of Vaishali *et al.* (2008) and Poste *et al.* (2015) studies. Overall the incidence of non-neoplastic lesion was more than the neoplastic, the ratio being 3.8:1 similar ratio was seen in study conducted by Srivani *et al.* (2015). CIN II was more commonly encountered in present study. Most cases of severe dysplasia were found in the age groups 40-50 and 50-60 years. The incidence of squamous cell carcinoma was also highest in the same age groups. Whereas studies conducted by Hall *et al.* (1968) and Garud *et al.* (1981). Showed high incidence of CIN I. Squamous cell carcinoma was the commonest of the invasive lesions encountered in this study, accounting for 95.73% of the total invasive carcinoma. This was comparable with the figures obtained by Solapurkar *et al.* (1985) (95.70%), Gupta *et al.* (1979) (94.26%) and Poste *et al.* (2015) (95.73%). The large cell non-keratinizing type of squamous cell carcinoma was seen to be the commonest type in all the above studies. In comparison to squamous cell carcinoma the incidence of adenocarcinoma was quite less. In the current study, 2 cases of adenocarcinoma and 2 cases of adenosquamous carcinoma were encountered. Findings correlated with Solapurkar *et al.* (1975) and Poste *et al.* (2015) studies. The study conducted by Solapurkar *et al.* (2006) in Solapur (State:Maharashtra, India) in 1985 showed high prevalence (33.8%) of cervical cancer compared to present study (12%) in 2015. This decline in carcinoma rate over a period of time is due to effective cervical screening programs and treatment of premalignant lesions.

Conclusion

Histopathological studies along with clinical correlation is very important for early diagnosis of cervical lesions. Early recognition of infections and inflammatory lesions can prevent considerable damage to the cervix due to fibrosis, glandular atrophy and sometimes even development of carcinoma. Inflammatory lesions were the most common lesions followed by malignancies of cervix. Incidence of non-neoplastic and neoplastic cervical lesions varies according to different age group. Among inflammatory lesions chronic non-specific cervicitis occur in sexually active females. Cervical malignancies were mostly seen in elderly women presenting with PV bleeding and white discharge. Most common cervical malignancy was large cell non-keratinizing squamous cell carcinoma. Cervical cancers can be prevented if women have regular Pap tests with follow-up for abnormal changes as they have advantage of being readily available, relatively cheap and technically easy.

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