



HISTOPATHOLOGICAL SPECTRUM OF POLYPOIDAL LESIONS OF CERVIX - A SHORT CASE STUDY AT TERTIARY HEALTH CARE CENTRE

Histopathology

Dr. Ankita Ashok Kayande

JR3.

Dr. Ketki Kishor Patil

MBBS.

Dr. Madhukar Manohar Gavit

JR3.

Dr. Digvijay Jaideepsingh Deore*

JR3. *Corresponding Author

Dr. Purwa Rangrao Patil

Professor.

ABSTRACT

Background: Cervical polyps are focal, hyperplastic protrusions of endocervical folds, including the epithelium and substantia propria. Endocervical polyp constitute the most common new growth of uterine cervix. Polypoidal lesion of cervix show various morphological spectrum ranging from inflammatory to neoplastic lesions. **Method:** Present study was conducted in the department of pathology in a tertiary care hospital over a period of one year. Women with polypoidal growth from the cervix visualized on per speculum, radiological examination were included in the study. Written informed consent was obtained. Patients were subjected to detail clinical, radiological examination. Specimens comprised of complete polyp or fragments of polyp were received in 10 % formalin. Specimens were processed, stained with H & E stain. The sections were microscopically examined, findings were noted, data collected and analyzed. For diagnosis of malignant lesions, CAP protocol was applied.

Results: Total 49 women were included in this study. Women were in the age group of 33 to 74 years. Endocervical polyp (22) was found to be most common lesion followed by leiomyoma (17), microglandular endocervical hyperplasia (02), squamous cell carcinoma (02), adenomyomatous polyp (01), hemangioma (01), fibroepithelial polyp (01), tuberculous inflammation (01), melanoma (01), endometrial polyp (01). Common associated clinical features were history of heavy menstrual bleeding or white discharge per vagina. **Conclusion:** Polypoidal lesion of cervix can be neoplastic or non-neoplastic in nature. It appears that polypoidal endocervicitis, endocervical polyp, fibroepithelial polyp shows spectrum of similar pathogenesis with polypoidal endocervicitis as initial lesion, endocervical polyp as intermediate lesion and fibroepithelial polyp as last stage in pathogenesis. Chances of malignancy presenting as cervical polyp is very low. Symptomatic polyp needs polypectomy. In asymptomatic cases, conservative management with follow up is expected.

KEYWORDS

Heavy menstrual bleeding, Leiomyoma, Polypectomy.

INTRODUCTION

The cervix (Latin word meaning neck) is derived from paramesonephric duct.¹ It is distal part of complex organ of female genital tract i. e. uterus. The cervix measures 2.5-3 cm in length in adult nulligravida, and when normally positioned, is angled slightly downward and backward.² It is anatomically comprised of ectocervix and endocervix. Vaginal portion of cervix having convex elliptical surface is called as exocervix or portio vaginalis or ectocervix, which is delimited by anterior and posterior vaginal fornices. Ectocervix is divided into shorter anterior and longer posterior lips. In the centre of exocervix is external os which is circular in nulligravida and slit like in parous women.³ External os is connected to isthmus of cervical canal (endocervix). The canal is an elliptical cavity, measuring 8 mm in its greatest dimension and has longitudinal mucosal ridges, the plica palmitae.

The blood supply of the cervix is provided by the descending branches of the uterine arteries, reaching the lateral walls along the upper margin of the paracervical ligaments (cardinal ligaments of Mackenrodt). The venous drainage parallels the arterial system, with communication between the cervical plexus and neck of the urinary bladder. Lymphatics drain into the external iliac and obturator nodes, the hypogastric and common iliac nodes, the sacral nodes, and the nodes of the posterior wall of the urinary bladder. The innervation of the cervix is chiefly limited to the endocervix and peripheral deep portion of the exocervix. The cervical nerves are derived from the pelvic autonomic system, the superior, middle, and inferior hypogastric plexuses.⁴

The cervix is composed of an admixture of fibrous, muscular, and elastic tissue and is lined by columnar and squamous epithelium.⁵ Fibrous connective tissue is the predominant component. Smooth muscle comprises the substance and is located mainly in the endocervix, the portio vaginalis being nearly devoid of smooth muscle fibers.⁶ In contrast, at the isthmus, 50–60% of the supportive tissue

consists of concentrically arranged smooth muscle, which acts as a sphincter.

Cervical epithelium is under control of estrogen and progesterone secreted by ovaries.⁷ The region between the original squamocolumnar junction and the postpubertal functional squamocolumnar junction is termed the transformation zone. The transformation zone is histologically characterized by the presence of metaplastic epithelium. The word polyp arises from the ancient Greek word “polypus” meaning many feet² Polyps are tissue outgrowths may be single or multiple, sessile or broad based, pedunculated with a stalk.² Polyp of female genital tract are categorized based on their location and type as uterine, cervical, vaginal and vulval polyps.²

Cervical polyp constitute the most common new growth of uterine cervix.⁸ Cervical polyps are the commonest cervical lesions and occurs about 2-5 % of women.⁹ Cervical polyp are focal, hyperplastic protrusions of endocervical folds, including the epithelium and substantia propria.⁸ They are more frequent in parous women over 20 years of age and most of them (60-70%) are asymptomatic and found on routine speculum examination of cervix.

Also cervical polyps are found during the fourth to sixth decades and in multigravidas.⁸ They may present with profuse leukorrhea due to hypersecretion of mucus from inflamed endocervical epithelium or abnormal bleeding from ulceration of the surface epithelium.^{8, 10} Bleeding in the form of post-menopausal bleeding, post coital bleeding or inter -menstrual bleeding and foul smelling per vaginal discharge were the common presenting symptoms in patients having malignancy.¹¹

Clinically, cervical polyps are rounded or elongated with a smooth or lobulated surface that is often reddened because of increased vascularity [Figure/ Table 1a-c].⁸ Most polyps are single and measure

from a few millimeters to 2–3 cm.^{9,12,13} In rare instances, they may reach gigantic dimensions, protruding beyond the introitus and resembling carcinoma.⁸ Risk factors are genetics, enzymes, diabetes mellitus, obesity, hypertension, age, menopause status and steroid hormone receptors.^{2,14}



Figure/ Table 1a: Polyp seen during per speculum examination



Figure/ Table 1b: Polyp seen during per speculum examination



Figure/ Table 1c: Polyp seen during per speculum examination

Microscopically, cervical polyps display a variety of patterns that vary according to the preponderance of one or another of the tissue components. The most common type is the endocervical mucosal polyp. It is composed of mucinous epithelium that lines crypts, with or without cystic changes. Sometimes, they may be mainly fibrous, representing an overgrowth of the connective tissue stroma of the portio. Blood vessels predominate in vascular polyp.¹⁵ Squamous metaplasia involving the surface or glandular epithelium of polyps is seen frequently. The supporting connective tissue of polyps is generally loose, with centrally placed feeding vessels and is almost always infiltrated by a chronic inflammatory infiltrate. Polyps originating in the isthmus often have an admixture of endocervical- and endometrial-type epithelial components and are referred to as mixed polyps.

High-grade SIL, carcinoma, either in situ or invasive (adeno- or squamous), originating in cervical polyps is extremely rare. Endocervical polyps with adenocarcinomatous changes must be differentiated from polypoid adenocarcinoma of the endocervix and from endocervical polyps that are secondarily involved by an adjacent adenocarcinoma.¹⁶ The most useful criterion for differentiating between the two is to see whether or not the base of the pedicle of the polyp is involved by carcinoma. The base of a polyp that harbors a primary tumor is free of disease, and the carcinoma usually has a focal distribution within an otherwise benign polyp. In a polypoid carcinoma, the entire mass is malignant, including its base and neighboring areas. A focus of carcinoma in a cervical polyp without involvement of its base but associated with similar carcinoma in the adjacent regions should be regarded as a secondary rather than a primary focus. Adenocarcinoma confined to a polyp has an excellent prognosis.¹⁷

Our institute being tertiary health care centre where patients presenting

with cervical polyp form major proportion of indoor and outdoor patients. Early diagnosis and treatment of benign and malignant cervical lesions are in turn associated with increased chance of long term survival.¹⁸ Hence, the present study is undertaken to evaluate histopathological spectrum of polypoid lesion of cervix in female.

MATERIALS AND METHODS

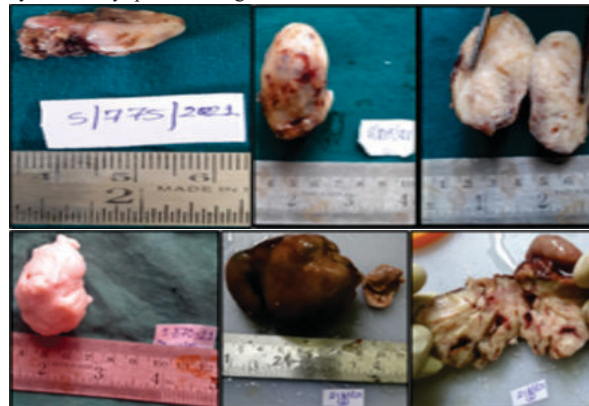
After obtaining Institutional Ethical Committee approval, this one year open, prospective, hospital-based, cross-sectional study was conducted in Department of pathology in a tertiary care hospital. 49 patients with polypoid growth from the cervix visualized on per speculum and/ or radiological examination were included in the study. Written informed consent was obtained. Patients were subjected to detail clinical, radiological examination. Specimens comprised of complete polyp with or without hysterectomy or fragments of polyp were received in 10 % formalin [Figure/ Table - 2a-d]. Specimens were processed, stained with H & E stain. The sections were microscopically examined, findings were noted, data collected and analyzed. For diagnosis of malignant lesions, CAP protocol was applied. Special stain and immunohistochemistry were done wherever possible and/ or wherever necessary.



Figure/ Table 2a: Cervical Polyp received as complete polyp with total hysterectomy and bilateral salpingo-oophorectomy specimen on gross examination



Figure/ Table 2b: Cervical Polyp received as complete polyp with hysterectomy specimen on gross examination



Figure/ Table 2c: Cervical Polyp received as complete polyp specimen on gross examination

RESULTS AND OBSERVATIONS

Total 49 patient's samples were received during the study period. Most of the cases were in the age group of 39-44 years (34.693%) [Figure/ Table - 3]. Multiple complaints in a single case have been counted separately. As per our data, (53.061%) 26 cases complained of abnormal uterine bleeding, being the most common presenting complaint, followed by spotting or bleeding per vaginum (42.857%), mass per vaginum (40.816%), white discharge per vaginum (32.653%), abdominal pain (26.530%), infertility, amenorrhoea, burning sensation (04.081%) and dysmenorrhoea (2.040%). 04.081% patients were found to be asymptomatic [Figure/ Table -4]. 32 cases (65.306%) were premenopausal and remaining 17 cases (34.693%) were postmenopausal [Figure/ Table - 5]. 18 (36.634%) polypoidal lesions were measuring 1-2 cm in size, followed by 16 lesions (32.653%) which were measuring 3-4 cm. Only 1 (2.040%) polyp was measuring 10 cm [Figure/ Table - 5]. Polyp measuring more than 4 cm, is termed as giant cervical polyp. 46 cases (93.877%) and rest 03 cases (06.122%) were found to be benign and malignant [Figure/ Table - 6].

Figure/ Table 3 : Age Related Frequency

Age group (in years)	Frequency	Percentage (%)
33-38	08	16.326
39-44	17	34.693
45-50	14	28.571
51-56	04	08.163
57-62	03	06.122
63-68	02	04.081
69-74	01	02.040
Total	49	100

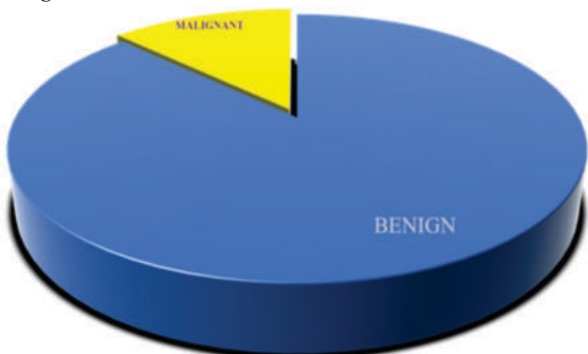
Figure/ Table 4: Age Distribution And Their Associated Clinical Features

Clinical Features	Age group (in years)							Total	Frequency (%)
	33-38	39-44	45-50	51-56	57-62	63-68	69-74		
Abnormal uterine bleeding	03	11	07	02	02	01	00	26	53.061
Spotting or Bleeding per vagina	05	05	04	04	02	01	00	21	42.857
Mass per vaginum	05	09	05	00	01	00	00	20	40.816
White discharge per vaginum	04	07	04	00	01	00	00	16	32.653
Abdominal pain	02	07	04	00	00	00	00	13	26.530
Infertility	02	00	00	00	00	00	00	02	4.081
Amenorrhoea	00	00	01	01	00	00	00	02	4.081
Burning sensation	00	02	00	00	00	00	00	02	4.081
No symptoms	00	00	00	00	00	01	01	02	4.081
Dysmenorrhoea	00	00	00	00	00	00	00	01	2.040
Dyspareunia	00	00	00	00	00	00	00	00	00

Figure/ Table 5 : Size Of Polyp And Menopausal Related Frequency

Sr. No.	Features	Categories	No. of cases	Frequency (%)
1.	Menopausal status	Premenopausal	32	65.306
		Post- Menopausal	17	34.693
2.	Size of Polyp	Less than 1 cm	03	6.122
		1-2 cm	18	36.734
		3-4 cm	16	32.653
		5-6 cm	09	18.357
		7-8 cm	02	04.081
		10 cm	01	02.040

Figure/ Table 6 : Benign cases i.e 46 (93.877%) vz 03 (06.122%) malignant cases

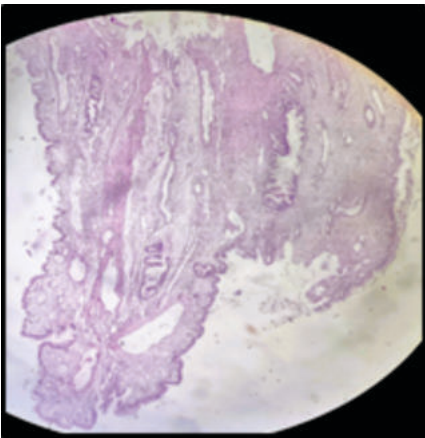


The most common type of polypoidal lesion in this study was classical Endocervical polyp (22) [Figure/ Table - 7]. Histological features of endocervical polyp are lined by cervical epithelium on all three sides with collagenized stroma, endocervical glands filled with mucin, dilated and congested blood vessels [Figure/ Table - 8]. A variant with

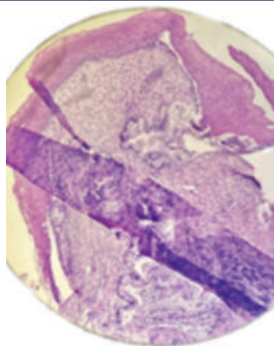
predominant stromal fibrosis and stratified squamous epithelial lining are called as Fibroepithelial polyp (01) [Figure/ Table - 9]. We encountered one such cases in our study. Polyp with only whorling bundles of plump smooth muscle component are kept in leiomyoma category (17) [Figure/ Table - 10]. Cells are pale with indistinct cell border and cigar shaped nuclei with blunt ends with no atypia and absence of necrosis. Adenomyomatous polyp (01) showed a polypoidal tissue lined by columnar to flattened epithelium. Sub epithelium shows small to elongated glands embedded in an oedematous stroma. Intermixed are seen intersecting fascicles are seen of smooth muscle fibres along with scattered blood vessels [Figure/ Table - 11]. Microglandular endocervical hyperplasia (02) showed complex branching of endocervical glands with overlying epithelium showing squamous metaplasia. Glands are tightly packed varying-sized glandular or tubular units, lined by flattened to cuboidal cells with eosinophilic granular cytoplasm containing small quantities of mucin [Figure/ Table -12]. 02 cases of squamous cell carcinoma (not otherwise specified and invasive) are found in our study which are histopathologically characterized by islands and nests of neoplastic squamous epithelium invading desmoplastic stroma. Individual tumor cells are polygonal with abundant eosinophilic cytoplasm and prominent cellular membranes, hyperchromatic pleomorphic nuclei, prominent nucleoli and coarse and clumped chromatin [Figure/ Table - 13a-c]. Primary amelanotic melanoma of vagina as cervical polyp (01) showed polyhedral cells with nuclear atypia and mitotic activity seen[Figure/ Table -14a-b]. Immunohistochemistry showed nuclear and cytoplasmic positivity for S100, cytoplasmic positivity for HMB-45[Figure/ Table -14c-d]. Negative for cytokeratin and desmin. Highly vascular polyp lined by endocervical epithelium with no atypia and stroma consist of large number of dilated blood vessels of varying size are cavernous haemangioma of cervix (01) which is extremely rare benign vascular lesion[Figure/ Table -15]. Endometrial polyp (01) has dilated endometrial glands of proliferative type in fibrous stroma along with thick walled blood vessels in stroma. Stroma showed presence of inflammatory cell infiltrate [Figure/ Table -16]. Tuberculous infection of cervix (01) shows presence of multiple granulomas comprised of central caseous necrosis, epithelioid histiocytes and multinucleated langhans type of giant cells[Figure/ Table -17a-b]. Special stain for acid fast bacilli was found to be non-contributory. Tuberculosis case also showed features of condyloma acuminata in the form of hyperplastic stratified squamous epithelium with moderate koilocytic changes with no atypia.

Figure/ Table 7 : Histopathological Spectrum Of Cervical Polypoidal Lesions

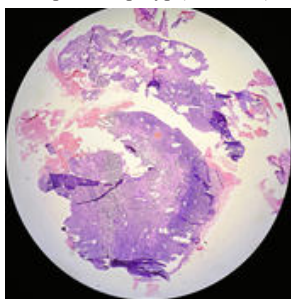
Histopathology Of Polyp	Frequency	%
Endocervical polyp	22	44.89
Leiomyomatous polyp	17	34.693
Microglandular endocervical hyperplasia	02	4.081
Squamous cell carcinoma	02	4.081
Adenomyomatous polyp	01	2.040
Hemangioma	01	2.040
Fibroepithelial polyp	01	2.040
Tuberculous inflammation	01	2.040
Melanoma	01	2.040
Endometrial polyp	01	2.040
Total	49	100



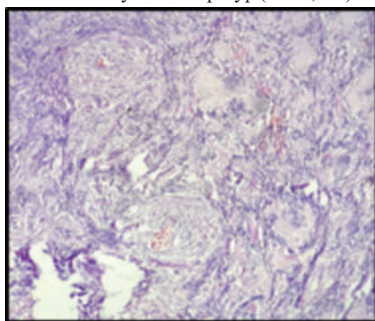
Figure/ Table 8 : Endocervical polyp (H&E, 4X)



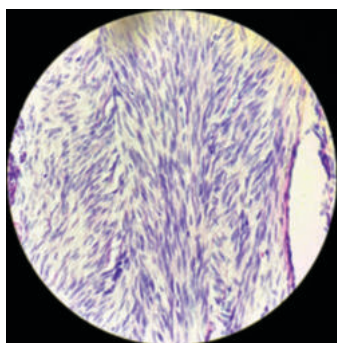
Figure/ Table 9: Fibroepithelial polyp (H&E, 4X)



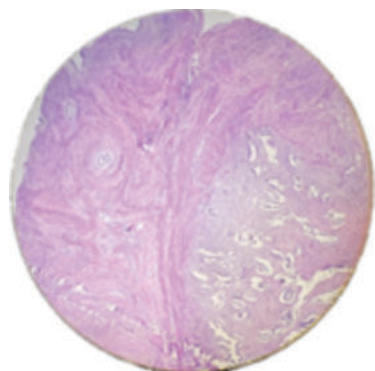
Figure/ Table 10a : Leiomyomatous polyp (H&E, 4X)



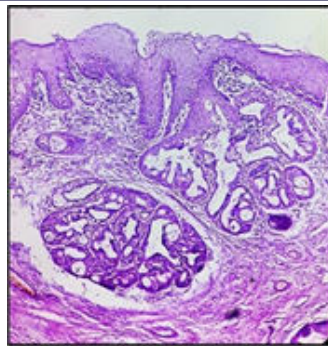
Figure/ Table 10b : Leiomyomatous polyp (H&E, 10X)



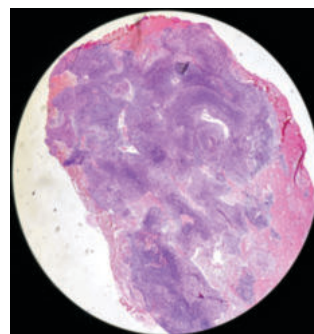
Figure/ Table 10c: Leiomyomatous polyp (H&E, 40X)



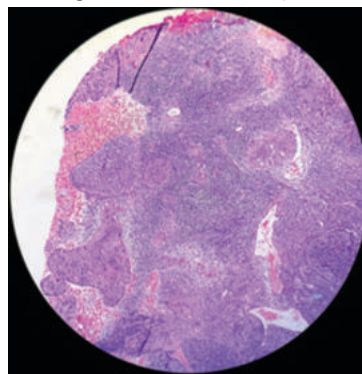
Figure/ Table 11 : Adenomyomatous polyp (H&E, 4X)



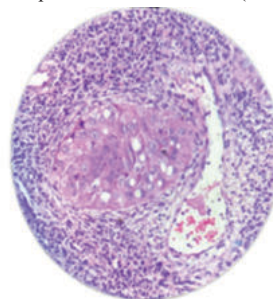
Figure/ Table 12: Microglandular endocervical hyperplasia (H&E, 10X)



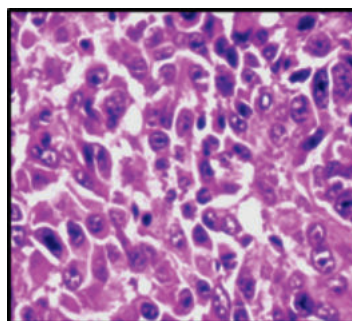
Figure/ Table 13a: Squamous cell carcinoma (H&E, 4X)



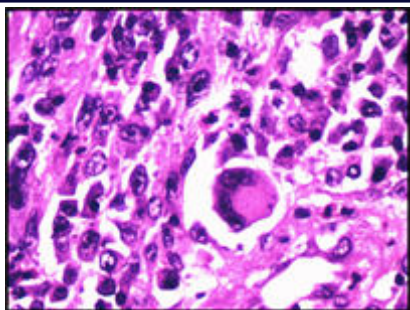
Figure/ Table 13b : Squamous cell carcinoma (H&E, 10X)



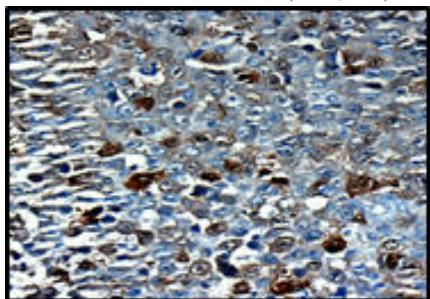
Figure/ Table 13c : Squamous cell carcinoma (H&E, 40X)



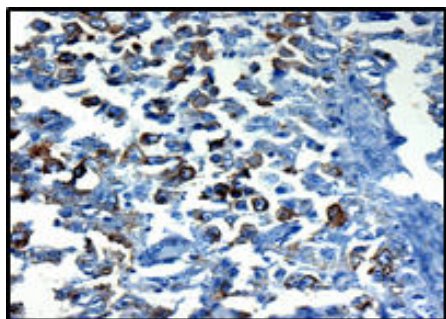
Figure/ Table 14a : Amelanotic melanoma (H&E, 40X)



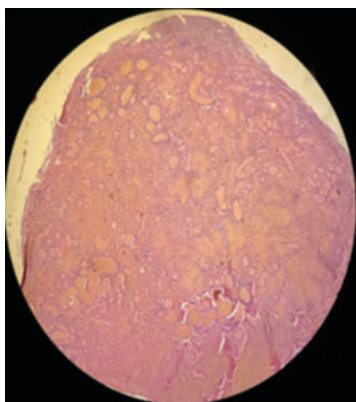
Figure/ Table 14b : Amelanotic melanoma (H&E, 40X)



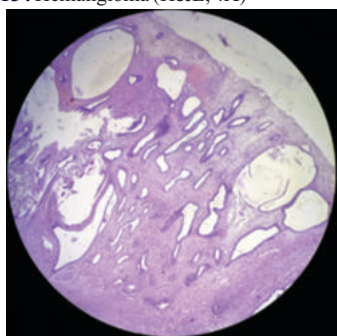
Figure/ Table 14c: S100 positivity for amelanotic melanoma (H&E, 40X)



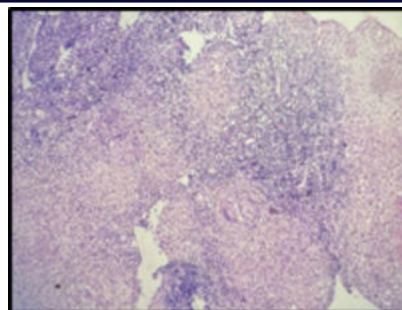
Figure/ Table 14d : HMB45 positivity for amelanotic melanoma (H&E, 40X)



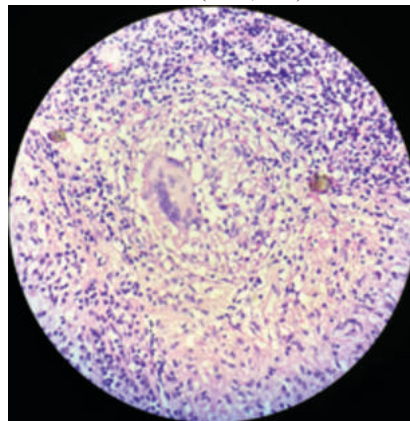
Figure/ Table 15 : Hemangioma (H&E, 4X)



Figure/ Table 16 : Endometrial polyp (H&E, 4X)

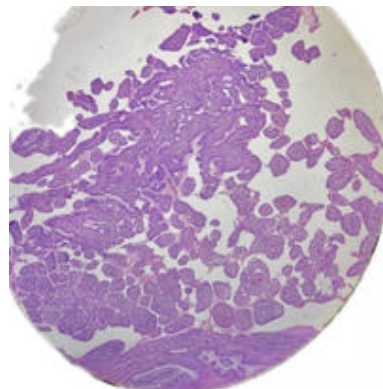


Figure/ Table 17a : Tuberculosis (H&E, 10X)

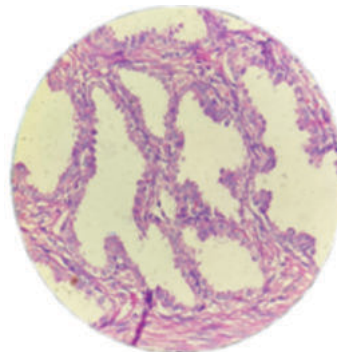


Figure/ Table 17b : Tuberculosis (H&E, 40X)

Associated findings were papillary endocervicits showing endocervical chronic inflammation with short, oedematous, columnar epithelial lining papillary architecture with no invasion of stroma[Figure/ Table -18]. Arias stella reaction in first trimester pregnant female showed endocervical glands lined by markedly enlarged pseudostratified cells with hypersecretory cytoplasmic features with abundant vacuolated cytoplasm and irregular, hyperchromatic nuclei which projected into glandular lumen in a hobnail pattern with no mitotic activity and stromal invasion[Figure/ Table-19].



Figure/ Table 18 : Papillary endocervicits (H&E, 4X)



Figure/ Table 19 : Arias Stella reaction (H&E, 40X)

Figure/ Table 20 : Comparison Of Present Study With Published Similar Studies

Study	Total number of cases	Study duration (in years)	Age range (in years)	Clinical features	Most common polypoidal lesion	Malignancy found in
Gupta A, Thaker B, Bhardwaj S. (2022)	20	03	20-70	Abnormal uterine bleeding/ Infertility	Endocervical polyp	02
Gopalan U et al. (2017)	107	02	22-70	Abnormal uterine bleeding	Endocervical polyp	00
Rebecca A.Levy et al (2016)	369	12	18-87	Abnormal uterine bleeding	Endocervical polyp	06
Sidhalingreddy, Shilpa Biradar, Akhila, V. D. Dombale (2013)	22	03	20-50	Abnormal uterine bleeding/ white discharge per vaginum	Endocervical polyp	00
Tirlapur SA et al. (2010)	294	03	25-94	Abnormal uterine bleeding	Endocervical polyp	00
Present study	49	01	33-74	Abnormal uterine bleeding	Endocervical polyp	03

DISCUSSION

In our study, cervical polyps were more common in the age group 39-44 years (34.693%) followed by 45 – 50 years (28.571%). This is similar to reports where cervical polyps are more commonly seen in the reproductive age especially after 40 years of age.^{18,19,20}

Tirlapur et al found maximum incidence of cervical polyp in the age group 25-45 years.²¹ Wachokor FNN et al found peak incidence of endocervical polyps in the fifth decade.²²

In our study, 26 (53.061%) cases complained of abnormal uterine bleeding, being the most common presenting complaint, followed by spotting or bleeding per vaginum (42.857%).

These findings are congruent to previous studies by Gupta A et al, Sidhalingreddy et al., Gopalan U et al, Tirlapur SA et al., Rebecca A Levy et al.^{8,12,13,21,23} Further, white discharge per vaginum was more common in younger age group of 39-44 years.

In our study, majority of the lesions were benign i.e 46 cases (93.877%) and rest 03 cases (06.122%) were malignant which is same as Singh et al²⁴, Khandekar S²⁵ and Kumar N et al²⁶ where benign lesions were 82.135 and 86.18% while malignant lesions were 17.87% and 13.82% respectively. 03 (06.122%) malignant lesions were found in our study which found to be concordant with study conducted by Gupta et al⁸ and discordant with studies conducted by Sidhalingreddy et al., Gopalan U et al, Tirlapur SA et al.^{12,13,21} This may be due to varied ethnicity, regional differences, family history, parity, usage of oral contraceptive pills and hormone replacement therapy, etc. Schnatz PF et al who found the prevalence rate of 1.4–2.7% for any abnormality defined as atypia, dysplasia or malignancy and Berzolla CE et al who found a prevalence rate of 0.1% for malignancy.^{14,16}

In our study the most common finding was Endocervical polyp (22) followed by leiomyoma (17), microglandular endocervical hyperplasia (02), squamous cell carcinoma (02), adenomyomatous polyp (01), hemangioma (01), fibroepithelial polyp (01), tuberculous inflammation (01), melanoma (01), endometrial polyp (01).

Endocervical polyp is most common finding in our study and found to be concordant with the studies conducted by Gupta A et al, Sidhalingreddy et al., Gopalan U et al, Rebecca A Levy et al, Tirlapur SA et al, Saini S et al, Nelson AL et al.^{8,11,12,13,21,23,27} The slight differences in the pattern of gynecological malignancies across the studies may be attributed to varied ethnicity, regional differences, family history, parity, usage of oral contraceptive pills and hormone replacement therapy etc.

The slight differences in the pattern of gynecological malignancies across the studies may be attributed to varied ethnicity, regional differences, family history, parity, usage of oral contraceptive pills and hormone replacement therapy etc. Amongst the neoplastic lesions in our study, 88.8% were found to be benign while 11.2% were malignant lesions which is almost same as Khandekar S²⁵ and Kumar N et al²⁶ studies where benign lesions constituted 82.13% and 86.18% while malignant lesions were 17.87% and 13.82% respectively.

CONCLUSION

The present study highlights the approach to histopathological spectrum of polypoidal lesions of cervix. Polypoidal lesions of cervix

have various modes of presentation. Histopathological examination still remains to be the gold standard as it helps in confirming diagnosis, only after clinico-radiological correlation. Special stains play a supporting role in infectious cases. Immunohistochemistry confirms the malignant impression on histopathological examination of lesion. Polypoidal lesion of cervix can be neoplastic or non-neoplastic in nature. Chances of malignancy presenting as cervical polyp is very low. In asymptomatic cases and no risk factors, conservative management with follow up is expected. Symptomatic polyp needs polypectomy. Recurrence may be seen in cases of leiomyoma.

Financial Support

Nil

Conflicts Of Interest

Nil

Acknowledgment:

We are grateful to our professor for sharing their time and expertise with us as part of this case study. Their insights and perspectives have greatly enriched our understanding of the histopathological spectrum of polypoidal lesions of cervix. We would also like to thank the histopathology technicians for their cooperation and support throughout the process. Finally, we would like to acknowledge the valuable guidance and feedback provided by our colleagues and mentors. Their contributions have been instrumental in the successful completion of this case study.

We are thankful to all those who made this work possible.

Financial Or Other Competing Interests: None.

Limitations Of Present Case Study:

- Limitation in time and cost.
- Information about family history and or past history of patient is based on self-reports, due to non-availability of documentation.

REFERENCES

1. Devi, V. S. (2022) Inderbir Singh's Human Embryology. 13th ed. New Delhi, India: Jaypee Brothers Medical.
2. Blaustein's Pathology of the Female Genital Tract (Kurman, Blaustein's Pathology of the Female Genital Tract) 6th ed. 2011 Edition.
3. D C Dutta's textbook of obstetrics: including perinatology and contraception. New Delhi: Jaypee Bros. Medical Publishers; 2013.
4. Chaurasia, B. D. BD chaurasia's human anatomy, volume 2: Regional and applied dissection and clinical: Lower limb, abdomen and pelvis. 8th ed. New Delhi, India: CBS Publishers & Distributors. 2019.
5. Inderbir Singh. 6 Ed. Histology.
6. Young, B., Woodford, P. and O'Dowd, G. (2014) Wheater's functional histology: A text and colour atlas. Philadelphia, PA: Churchill Livingstone/Elsevier.
7. Guyton, A. C. (1986) Textbook of medical physiology. 7th ed. New York, NY: Saunders College Publishing/Harcourt Brace.
8. Gupta A, Thaker B, Bhardwaj S. Spectrum of polypoidal lesions of the female genital tract JK Science 2022;24(2):118-122.
9. Juan Rosai. Uterus cervix. In: Rosai and ackerman's surgical pathology. 9th ed. Newdelhi: Elsevier; 2004. p. 1523-1551.
10. NHS foundation trust. Doncaster and Bassetlaw hospitals [Internet]. Cervical polyps [leaflet]; 2012. Available from: http://www.dbh.nhs.uk/library/patient_information_leaflets/WPR22220_cervical%20polyps.pdf.
11. Saini S, Kanetkar SR. Histopathological study of lesions of uterine cervix. J Evid Based Med Healthc 2016;3(103):5685-94.
12. Sidhalingreddy, Sidhalingreddy & Biradar, Shilpa & D., Dombale. (2013). Clinicopathological Analysis Of Polypoid Lesions Of Cervix. Journal of Evolution of Medical and Dental Sciences. 2563-2570. 10.14260/jemds/578.
13. Gopalan U et al. Int J Reprod Contracept Obstet Gynecol. 2017 Apr;6(4):1526-1529.
14. Schnatz PF, Ricci S, O'Sullivan DM. Cervical polyps in postmenopausal women: is there a difference in risk?. Menopause. 2009; 16:524-8.

15. Berek, J. S. Berek & Novak's Gynecology Essentials. Baltimore, MD: Wolters Kluwer Health. 2020.
16. Berzolla CE, Schnatz PF, O'Sullivan DM, Bansal R, Mandavilli S, Sorosky JJ. Dysplasia and malignancy in endocervical polyps. *J Womens health (Larchmt)*. 2007;16(9):1317-21.
17. Abell MR, Gosling JRG. Gland cell carcinoma (adenocarcinoma) of the uterine cervix. *Am J Obstet Gynecol*. 1962; 83:729.
18. Nigatu B, Gebrehiwot Y, Kiros K, Eregete W.A five year analysis of histopathological results of cervical biopsies examined in a pathology department of a teaching hospital (2003-2007). *Ethiop J Reprod Health*. 2010; 4: 52-7.
19. Pallipady A, Illanthody S, Vaidhya R, Ahmed Z, Suvarna R, Metkar Getal. A clinic-morphological spectrum of non-neoplastic lesions of the uterine cervix at AJ-hospital Mangalore. *J Clin Diagn Res*. 2011; 5: 546 - 50. 18.
20. Jones MA, Young RH. Atypical oxyphilic metaplasia of the endocervical epithelium: a report of six cases. *Int J Gynecol Pathol*. 1997 Apr;16(2):99-102. doi: 10.1097/00004347-199704000-00003. PMID: 9100061.
21. Tirlapur SA, Adeyemo A, O'Gorman N, Selo-Ojeme D. Dan selo-ojeme. Clinicopathological study of cervical polyps. *Arch Gynecol Obstet*. 2010; 282: 535-8.
22. Nwachokor FN, Forae GC. Morphological spectrum of non-neoplastic lesions of the uterine cervix in Warri, South-South, Nigeria. *Niger J Clin Pract*. 2013 Oct-Dec;16(4):429-32. doi: 10.4103/1119-3077.116883. PMID: 23974733.
23. Rebecca A. Lavey, Asangi R. Kumarapeli, Horce J. Spencer, Charles M. Quick. Cervical polyps: Is histology also evaluation necessary? . <https://doi.org/10.1016/j.prp.2016.06.010>
24. Singh, Saurav & Gore, Charusheela & Singh, Geetika. (2020). Histopathological Spectrum Of Lesions Of The Female Genital Tract: A Two Year Retrospective Study In A Tertiary Hospital Of Pune, Maharashtra. *International Journal of Scientific Research*. 9.
25. Khandekar, Sanjay and Nilima D. Lodha. "Histopathological spectrum of neoplastic lesions of female reproductive system seen at a Rural Tertiary Care Centre in India." (2018).
26. Kumar N, Bansal M, Sharma H B, Gupta M, Mishra P, Histopathological spectrum of neoplastic tumours of female reproductive system –A two year study in a rural tertiary care centre in India. *IPJ Diagn Pathol Oncol* 2019; 4(2): 134-137.
27. Nelson AL, Papa RR, Ritchie JJ. Asymptomatic cervical polyps: can we just let them be? *Womens Health (Lond)*. 2015 Mar;11(2):121-6. doi: 10.2217/whe.14.86. PMID: 25776286.