

# Histopathological Pattern of Gynecological Malignancy at Tribhuvan University Teaching Hospital, Nepal

Subedi K<sup>1</sup>, Singh M<sup>2</sup>, Ojha N<sup>2</sup>

<sup>1</sup>Paropakar Maternity and Women's Hospital, Thapathali, Kathmandu, <sup>2</sup>Department of Gynecology and Obstetrics, TUTH, Maharajgunj, Kathmandu, Nepal

Received: 4-Mar-2017; Accepted: 10-May-2017

**Aims:** This study aims to find out histopathological diagnosis and stage at presentation during the diagnosis of female genital tumors.

**Methods:** This is hospital based prospective observational study of histopathologically confirmed gynecological malignancies conducted in the Department of Obstetrics and Gynecology, TUTH, Maharajgunj, Kathmandu for one year from 2014 to 2015

**Results:** Among 102 cases enrolled in the study, the most common gynecological malignancy was of ovary (48%) followed by cervix (31%), endometrium (11%), vulval (6%), gestational trophoblastic neoplasia (3%) and fallopian tube (1%). Patients presented in early stage in 66.6% of cases. Seventy-nine percent of ovarian cancer, 96.8% cases of cervical carcinoma, 66.6% cases of gestational trophoblastic neoplasia and all the cases of the endometrial, vulval fallopian tube carcinoma presented in early stage of the disease. The most common histopathological diagnosis of ovarian cancer was serous cyst adenocarcinoma (49.4%), cervical cancer was squamous cell nonkeratinising type (72%), endometrial carcinoma was endometrioid adenocarcinoma (82%), vulval carcinoma were squamous cell carcinoma (100%) and fallopian tube carcinoma was adenocarcinoma (100%). The mean age of gynecological malignancy was 49.6±14.5 years.

**Conclusions:** Screening of gynecological malignancy in women with suggestive symptoms is necessary to identify this disease in early stage and decrease the incidence, morbidity and mortality from this common public health problem.

**Keywords:** gynecological malignancy, incidence, symptomatology, screening

DOI: 10.3126/njog.v12i2.19952

## INTRODUCTION

Gynecological malignancies include malignancies affecting the female reproductive organs i.e. ovary, cervix, body of uterus, vulva, vagina and gestational trophoblastic neoplasia.<sup>1-2</sup> Over the years, the number of gynecological cancers is increasing for which the factors like increased life expectancy and changing dietary practice and lifestyle and environmental risks are thought to be responsible.<sup>3</sup> Cervical cancer accounts for over 60% of the gynecological cancer in developing countries and is the most common gynecological malignancy in Nepal despite being preventable by available means.<sup>4</sup> Nepal lacks documentation regarding the histopathological diagnosis and stage of presentation, thus generation of accurate data on cancer and scaling up of preventive programs for early detection of cancer is a necessity. This study aims to find out histopathological diagnosis

and stage of presentation during the diagnosis of female genital tumors. This will have a major role in providing awareness, promoting early detection and referral of suspected cases for appropriate management.

## METHODS

This a prospective observational study conducted in the Department of Obstetrics and Gynecology of Tribhuvan University Teaching Hospital (TUTH) for a period of one year from 14th April 2014 to 13th April 2015. TUTH is a tertiary care center with referral from various parts of Nepal for the management of complex diseases.

All patients attending the department of gynecology of TUTH were kept under close observation and those with histologically proven primary gynecological malignancy were included in the study while those without were excluded. Ethical approval was taken from the institutional review board and informed consent from individual patient. The histological information was recorded in a predesigned proforma and statistical analysis was done by SPSS 20.1.

## CORRESPONDENCE

Dr. Kirtipal Subedi  
Paropakar Maternity and Women's Hospital  
Thapathali, Kathmandu  
Phone: +977-9851097158  
Email: kirtipalsubedi@gmail.com

## RESULTS

There were 102 patients having gynecological malignancies among 15,257 women in a year (0.66%) with 64 new cases. The mean age was  $49.6 \pm 14.5$  years ranging from 11 to 91 years.

The common gynecological cancer was ovarian followed by cervical and endometrial; and the common histology was adenocarcinoma in ovary, squamous in cervix and adenocarcinoma in endometrium (Table 1).

Ninety (88.2%) women presented at an early stage I and II with 79% (39) of ovarian cancer and 96% (31) of cervical cancer (Table 2).

**Table 1. Histopathological distribution of gynecological malignancies**

Types	Frequency (%)
Ovarian	49(48%)
Serous Adenocarcinoma	24(49)
Mucinous Adenocarcinoma	10(20.4)
Squamous Cell Carcinoma	4(8.2)
Granulosa Cell Tumor	3(6.1)
Dysgerminoma	3(6.1)
Fibroma	2(4.2)
Endometrioid Carcinoma	1(2)
Clear Cell Carcinoma	1(2)
Sertoli Leydig Cell Tumor	1(2)
Cervical	32(31)
Squamous Cell Non Keratinizing Type	23(72)
Squamous Cell Keratinizing Type	6(19)
Mesonephric Carcinoma	1(3)
Adenocarcinoma	2(6)
Endometrial	11(11)
Endometrioid Carcinoma	9(82)
Adenocarcinoma Villoglandular Type	1(9)
Uterine Sarcoma	1(9)
Vulval	6(6)
Gestational Trophoblastic Neoplasia	3(3)
Fallopian Tube	1(1)

**Table 2: Distribution of Gynecological Cancers According to the stage at Diagnosis**

STAGE		Ovarian N (%)	Cervical N (%)	Endometrial N (%)	Vulval N (%)	GTN N (%)	Fallopian Tube N (%)	Total
EARLY STAGE (N=90)	I	26(53)	19(59.3)	11(100)	5(83.3)	2(66.6)	1(100)	64
	II	13(26.5)	12(37.5)	0	1(16.6)	0	0	26
LATE STAGE (N=12)	III	10(20.5)	1(3.1)	0	0	1(33.3)	0	12
	IV	0	0	0	0	0	0	0
Total		49	32	11	6	3	1	102

## DISCUSSION

Gynecological malignancy is a global health problem with developing countries bearing more of the disease burden than developed countries. The frequency of gynecological malignancy in TUTH was 0.66% among all gynecological patients. This low frequency could be due to very high sample size where all gynecological cases visiting the hospital in the out-patient, in-patient and the emergency department were included. Also the study was conducted in a multidisciplinary hospital with no separate oncological unit. In a retrospective study done in Kavre, Nepal, Mohammad et al revealed 60 cases of gynecological malignancy within a period of 20 months.<sup>5</sup> Similarly in India, the incidence of gynecological malignancy was 5.3% among all

admitted patients while in Nigeria the incidence ranged from 4.6% to 11.5% among all gynecological admissions.<sup>6-8</sup> According to the international agency for research on cancer, the comprehensive global cancer statistics show that gynecological cancers accounted for 19% of the 5.1 million estimated new cancer cases in 2002.<sup>9</sup>

The frequency of gynecological malignancies is known to vary according in different geographical locations. In our study, the ovarian cancer was the most common gynecological malignancy similar to Tehran and Pakistan where it was present among 55.5% of gynecological malignancy.<sup>10, 11</sup> However in Nepal, Dhakal et al reported ovarian cancer to be the second most common gynecological cancer present in 6.4% of cases.<sup>12</sup> In developing

countries cervical cancer is known to be more common cancer accounting for over 60% of the gynecological cancer burden.<sup>4</sup> Data collected by B.P. Koirala Memorial Cancer Hospital and Dhakal et al have also shown cervical cancer as number one cancer among women in Nepal.<sup>12, 13</sup> However in the more developed world of western Asia, it is reported to be the second commonest gynecological malignancies present in 17.2% of gynecological malignancies.<sup>14</sup> Thus, the discrepancy seen in the frequency of gynecological malignancy in this study could be because being conducted in the capital of the country the socioeconomic status of people is comparatively better than the rural area which is one of the known risk factor for carcinoma cervix. As the hospital mostly caters to the urban populations, women were aware of the screening modalities for cancer which leads to early diagnosis and significant decrease in the incidence of malignancy. Further in comparison to the rural population, women presented to the hospital earlier with the onset of symptoms of cervicitis which helps in prompt initialization of treatment decreasing the incidence of cervical cancer. Endometrial cancer although being the commonest gynecological cancer in developed countries, it ranks third in developing countries like India and Nigeria similar to our study.<sup>7, 15</sup> From Nepal, Dhakal et al have reported endometrial cancer as the fourth commonest gynecological malignancy present in 2.4% of cases.<sup>12</sup> Similar to our study, in a two year retrospective study done in Nigeria by Joseph et al, vulva cancer was present in 7.1% which was fourth most common gynecological malignancy.<sup>15</sup> In our study there were 3 (3%) cases of choriocarcinoma which was fifth commonest gynecological malignancy. Sarkar et al also reported gestational trophoblastic neoplasia as the fourth commonest gynecological malignancy with an incidence of 5.3% of all gynecological malignancies.<sup>7</sup> Fallopian tube cancer is among the rarest of gynecological malignancies as reported by various authors around the world. Dhakal et al have reported one case of fallopian tube cancer in a study done among 1517 Nepalese women with gynecological malignancies.<sup>12</sup> Ajith et al and Kietpeerkool et al studied that primary fallopian tube cancers constitute 1% and 0.48% of gynecological malignancies respectively.<sup>16, 17</sup>

The most common histopathological type of different cancers are listed in Table 1 which is similar to that reported by researchers throughout the world.<sup>12, 18-25</sup> Most common histopathology of ovarian cancer in this study was serous cyst adenocarcinoma which is similar to studies done in Pakistan.<sup>19, 20, 24</sup> According to Odukogbe et al., epithelial ovarian cancer constituted about 76.2% of the ovarian cancer cases in a study done in a hospital of Nigeria.<sup>26</sup> Squamous cell nonkeratinising type of cervical carcinoma is the most common histopathological

presentation noted in the present study and in other studies in Nepal.<sup>12, 27</sup> Other studies shows results similar to our study in which invasive squamous cell carcinoma was the most common histopathological type.<sup>20, 24</sup> Recent studies from tertiary care centers of India and other developing countries also reflect almost similar histological patterns of gynecological malignancies were squamous cell carcinoma is the most common cervical cancer.<sup>18</sup> Akhtar et al has also reported squamous cell carcinoma as most common cervical cancer (77.78%).<sup>19</sup> Thus, we can assume that epithelial cell carcinoma is the most common ovarian, squamous cell carcinoma is the most common cervical cancer and adenocarcinoma type is most common endometrial carcinoma.

In this study, majority of women presented at an early stage among all the gynecological malignancies. In ovarian cancer, 53% of cases presented in stage I, 26.5% in stage II and 20.5% in stage III. In a hospital based study done in Peshawar in 2014, 32% of women with ovarian cancer presented in stage I, 26% in stage II and 40% in stage IV.<sup>28</sup> In this study 96% of cases of cervical carcinoma presented in early stages of disease. Stage I was present in 59.4%, Stage II in 37.5% and Stage III in 3% of women with cervical cancer. Gul-e-lala et al from Pakistan revealed 67% of women with cervical malignancy presented at stage II and 33% presented at stage III.<sup>28</sup> The early presentation noted in this study could be because the hospital being in an urban area the patients were more conscious of their symptoms and came to the hospital earlier. All cases of endometrial, vulval and fallopian tube cancer presented in early stage of disease in this study which is similar to that published by Sultana et al in which 86% of endometrial carcinoma presented in Stage I.<sup>29</sup> Similar to our study Sarkar et al from India reported 67% of cases with gestational trophoblastic neoplasia presented at stage II and 16.5% presented at III and IV each.<sup>30</sup> Since the numbers of cases in the study were few, the results of this study cannot be compared with other studies. Thus, we found that women with ovarian and cervical cancer present at relatively advanced stage while those with endometrial carcinoma present in earlier stage.

Study done in short duration, with small sample size and in a single hospital at tertiary care center may not reflect the actual incidence and clinical profile of gynecological malignancy of the entire population.

## CONCLUSIONS

Ovarian cancer was the most common gynecological cancer among women in a single institution in the urban area of Nepal. A larger, multicenter study could come with the gynecological cancer profile better.

## REFERENCES

1. Breaking the silence: a national voice for gynaecological cancers. Senate Community Affairs References Committee Common wealth of Australia. 2006. [Available on [https://www.aph.gov.au/Parliamentary\\_Business/Committees/Senate/Community\\_Affairs/Completed\\_inquiries/2004-07/gynaecological\\_cancer/report/index](https://www.aph.gov.au/Parliamentary_Business/Committees/Senate/Community_Affairs/Completed_inquiries/2004-07/gynaecological_cancer/report/index)]
2. Epidemiology of Gynaecological Cancer in Northern Ireland. Guidance for the Management of Gynaecological Cancer, Belfast: Department of Health social service and public service, Northern Ireland. [Available on <http://www.niassembly.gov.uk/globalassets/documents/raise/publications/2016-2021/2017/health/1717.pdf>]
3. Chhabra S, Sonak M, Prem V, Sharma S. Gynaecological malignancies in a rural institute in India. *J Obstet Gynaecol.* 2002;22(4):426-9.
4. Chukwumeka AI, Ugwu GO. Burden of gynaecological cancers in developing countries. *World J Obstet Gynecol.* 2013;2(1):1-7.
5. Mohammad A, Makaju R. Retrospective histopathological analysis of various neoplasms of the female reproductive system (FRS) seen at the Kathmandu University Teaching Hospital, (KUTH) Dhulikhel, Nepal. *Kathmandu Univ Med J.* 2006;4(1):48-53.
6. Ibrahim HM, Ijaiya MA. Pattern of gynaecological malignancies at the University of Ilorin Teaching Hospital, Ilorin, Nigeria. *J Obstet Gynaecol.* 2013;33(2):194-6.
7. Sarkar M, Konar H, Raut D. Symptomatology of gynecological malignancies: experiences in the gynecology out-patient clinic of a tertiary care hospital in kolkata, India. *Asian Pac J Cancer Prev.* 2010;11(3):785-91.
8. Yakasai IA, Ugwa EA, Otubu J. Gynecological malignancies in Aminu Kano Teaching Hospital Kano: a 3 year review. *Niger J Clin Pract.* 2013;16(1):63-6.
9. Sankaranarayanan R, Ferlay J. Worldwide burden of gynaecological cancer: the size of the problem. *Best Pract Res Clin Obstet Gynaecol.* 2006;20(2):207-25.
10. Aziz Z, Sana S, Saeed S, Akram M. Institution based tumor registry from Punjab: five year data based analysis. *J Pak Med Assoc.* 2003;53(8):350-3.
11. Momtahn S, Kadivar M, Kazzazi AS, Gholipour F. Assessment of gynecologic malignancies: a multi-center study in Tehran (1995-2005). *Indian J Cancer.* 2009;46(3):226-30.
12. Dhakal HP, Pradhan M. Histological pattern of gynecological cancers. *J Nepal Med Assoc.* 2009;48(176):301-5.
13. National Guidelines for Cervical Cancer Screening and Prevention in Nepal, 2010. Ministry of Health and Population. [Available on <https://phaseworldwide.org/publications/national-guideline-cervical-cancer-screening-prevention-nepal/>]
14. Ashraf T, Haroon S. Gynaecological malignancies: Frequency of and outcome at a tertiary care hospital. *Professional Med J.* 2013;20(5):752-8.
15. Joseph A, Olisaemeka EP, Chukwudi OR, Igwe NM, Rose AM, Conrad EC. Frequency and Pattern of Gynecological Cancers in Federal Teaching Hospital, Abakaliki. Nigeria *JBCRS.* 2015;4(2).
16. Ajith Kumar TV, Minimole AL, John MM, Ashok Kumar OS. Primary fallopian tube carcinoma. *Obstet Gynecol Surv.* 2005;60(4):247-52.
17. Kietpeerkool C, Surasert P, Srisomboon J, Pantusart A. Primary carcinoma of the fallopian tube. *J Med Assoc Thai.* 2005;88(10):338-43.
18. Agarwal S, Malhotra KP, Sinha S, Rajaram S. Profile of gynecologic malignancies reported at a tertiary care center in India over the past decade: comparative evaluation with international data. *Indian J Cancer.* 2012;49(3):298-302.
19. Akhtar Z, Majid A, Naz T, Jamal T, Qazi Q, Samad A. Frequency and clinicopathological presentation of gynaecological malignancies. *J Postgrad Med Inst.* 2014;28(2):201-5.
20. Jamal S, Mamoon N, Mushtaq S, Luqman M, Moghal S. The pattern of gynecological malignancies in 968 cases from Pakistan. *Ann Saudi Med.* 2006;26(5):382-4.
21. Liapis A, Michailidis E, Deligeoroglonu, Kondi-Pafih A, Konidaris, Creatsas G. Primary fallopian tube cancer –a ten year review. *Clinicopathological study of 12 cases.* *Eur J Gynaecol Oncol.* 2004; 25(4):522-4.
22. Mazur MT, Hsueh S, Gersell DJ. Metastasis to the female genital tract. Analysis of 325 cases. *Cancer.* 1984;53(9):1978-84.
23. Shamini N, Tay EH, Ho TH. Vulvar cancer--what do we know about our patients? *Singapore Med J.* 2001;42(7):292-6.
24. Siyal AR, Shaikh SM, Balouch R, Surahio AW. Gynaecological cancer: A histopathological experiences at Chandka Medical College and Hospital Larkana. *Med Channel.* 1999;5:15-9.
25. You W, Dainty LA, Rose GS, Krivak T, McHale MT, Olsen CH, et al. Gynecologic malignancies in women aged less than 25 years. *Obstet Gynecol.* 2005;105(6):1405-9.
26. Odukogbe AA, Adebamowo CA, Ola B, Olayemi O, Oladokun A, Adewole IF, et al. Ovarian cancer in Ibadan: characteristics and management. *Journal of obstetrics and gynaecology. J Obstet Gynaecol.* 2004;24(3):294-7.
27. Pathak TB, Pun CB, Shrestha S, Bastola S, Bhatta R. Incidence, trends and histopathological pattern of cervical malignancies at BP Koirala Memorial cancer hospital, Nepal. *Journal of Pathology of Nepal.* 2013;3:386 -9.
28. Gul-e-Lala, Akhtar N, Noreen S. Pattern of Pelvic Malignancies. *JRMC.* 2014;18(2):282-5.
29. Sultana N, Kiyani N. Histopathological features of endometrial carcinoma. *J Coll Physicians Surg Pak.* 2005;15(9):539-42.
30. Sarkar M, Konar H, Raut D. Clinico-pathological features of gynecological malignancies in a tertiary care hospital in eastern India: importance of strengthening primary health care in prevention and early detection. *Asian Pac J Cancer Prev.* 2013;14(6):3541-7.