

Role of spiral computed tomography in evaluation of pelvic masses

Sudam Mehatre¹, Uttareshvar M Dhumal^{2*}

¹Assistant Professor, ²Associate Professor, Department of Radiology, MIMSR Medical College Latur, INDIA.

Email: opglakshmi@gmail.com

Abstract

Background: Patients with lower abdominal pain, dysurea, haematuria menorhagia, polymenhhoea malena commonly present to surgical and gynaecological department. Radiological examination has been relied up on many years in assisting surgeons to reach conclusive etiology. **Aims and Objective:** to study Role of Spiral Computed tomography in evaluation of pelvic masses. **Methodology:** After approval from institutional ethical committee this cross-sectional study was carried out in the Department of Radio Diagnosis MIMSR Medical College, Latur during the two years duration i.e. January 2006 to January 2008, in the study period 69 patients included to the study by taking written and explained consent All patients underwent CT scan at our department on Siemens somatom plus 4A whole body spiral CT scanner. The data was entered to excel sheet and analyzed by excel software for windows 10. **Result:** In our study we have found the majority of the patients were in the age group (Years.) of 31-40 were 21.74%, In 41-50 were 21.74%, 51-60 were 15.94%, 61-70 were 14.49%, 21-30 were 13.04%, In 11-20 were 7.25%, 71-80 were 4.35%, 0-11 were 1.45%. The majority patients were having Ca.Cervix i.e. 42.03%, Ovarian Malignancy in 31.88%, Ca.Urinary Blader in 7.25%, Ca.Rectum , Prostate mass in 4.35%, Tubo ovarian mass in 2.90%, Other uterine neoplasm, Ovarian Dermoid in 1.45%, Fibroid Uterus, Endometrial neoplasm respectively. Ca.Cervix on CT shown various features like Ca.Cervix with Para-metrial invasion in 17.39%, followed by Ca.Cervix with Pyometra in 11.59%, BulkyCervix (Later Proved on Biopsy) in 8.70%, Ca.Cervix with Bowel wall thickening, Ca.Cervix with Vaginal vault malignancy, Ca. with invasion of rectum in 1.45 %. **Conclusion:** It can be concluded from our study that Spiral Computed tomography was very useful not only for the detection of neoplasm but also to see the extent which is very useful for the medical and surgical treatment

Key words: Spiral Computed tomography, Ca.Cervix , Pelvic masses.

*Address for Correspondence:

Dr Uttareshvar M Dhumal, Associate Professor, Department of Radiology, MIMSR Medical College Latur, INDIA.

Email: opglakshmi@gmail.com

Received Date: 16/01/2021 Revised Date: 27/02/2021 Accepted Date: 30/03/2021

DOI: <https://doi.org/10.26611/10131821>

This work is licensed under a [Creative Commons Attribution-NonCommercial 4.0 International License](https://creativecommons.org/licenses/by-nc/4.0/). 

Access this article online

Quick Response Code:	Website: www.medpulse.in
	Accessed Date: 02 May 2021

INTRODUCTION

Patients with lower abdominal pain, dysurea, haematuria menorhagia, polymenhhoea malena commonly present to surgical and gynaecological department. Radiological examination has been relied up on many years in assisting surgeons to reach conclusive etiology. CT with

intravenous contrast enhancement is sensitive and reliable modelatity for evaluation of structures in the pelvis. It provides fairly accurate localization of lesions in various spaces of pelvis also provides essential information about extension of clinically detected masses and additional unsuspected or incidental lesions which may be seen by conventional radiological methods Malignancies of the pelvic cavity especially female reproductive system are among serious causes of mortality and morbidity, and adnexal cancers are in fifth place among the tumors with the highest mortality in the female population.¹ While the diagnosis of these tumors are delayed because of unspecified symptoms, so appropriate treatment plan is important for deliberate staging of the tumor gives good outcome.² In most institutions the type of surgery (laparotomy vs. laparoscopy) depends on the probability of malignancy, which is based mostly on imaging appearance.^{3,4} Putting together with a thorough

observation, physical examination and characteristics of the mass gives valuable information about its nature^{5,6}. Afterward, several invasive and non-invasive para-clinical evaluations can provide additional information^{7,8}. Computed tomography (CT) has been used primarily in patients with ovarian malignancies to reveal the stage of tumor, detect persistent or recurrent disease and demonstrate tumor response to therapeutic approach^{9,10}

In our study Spiral Computed tomography in evaluation of pelvic masses

METHODOLOGY

After approval from institutional ethical committee this cross sectional study was carried out in the Department of Radiology, MIMSR Medical College, Latur, during the period from November 2018 to October 2019., in the study period 69 patients included to the study by taking written and explained consent. All the study participants undergone CT pelvis were recruited from the department of OBGY and Department of surgery. Any patient showing, Pelvic mass, Haematuria, Dysurea, Menstrual Complain, Bleeding vaginum, Malena were included into study while those not giving consent and already diagnosed patients excluded from the study. All patients underwent CT scan at our department on Siemens somatum plus 4A whole body spiral CT scanner. The data was entered to excel sheet and analyzed by excel software for windows 10.

RESULT

Table 1: Age wise distribution of the patients

Age group	No.	Percentage (%)
0-11	1	1.45
11-20	5	7.25
21-30	9	13.04
31-40	15	21.74
41-50	15	21.74
51-60	11	15.94
61-70	10	14.49
71-80	3	4.35
Total	100	100.00

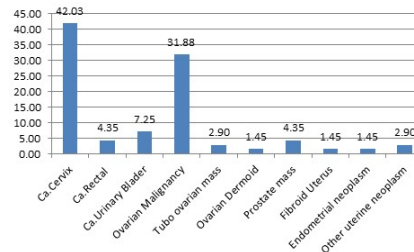
The majority of the patients were in the age group (Yrs.) of 31-40 were 21.74%, In 41-50 were 21.74%, 51-60 were 15.94%, 61-70 were 14.49%, 21-30 were 13.04%, 11-20 were 7.25%, 71-80 were 4.35%, 0-11 were 1.45%.

Table 2: Distribution of the patients as per the neoplasm diagnosed by CT

Neoplasm	No.	Percentage (%)
Ca.Cervix	29	42.03
Ca.Rectum	3	4.35
Ca.Urinary Blader	5	7.25
Ovarian Malignancy	22	31.88
Tubo ovarian mass	2	2.90

Ovarian Dermoid	1	1.45
Prostate mass	3	4.35
Fibroid Uterus	1	1.45
Endometrial neoplasm	1	1.45
Other uterine neoplasm	2	2.90
Total	69	100.00

The majority patients were having Ca.Cervix i.e. 42.03%, Ovarian Malignancy in 31.88%, Ca.Urinary Blader in 7.25%, Ca.Rectum , Prostate mass in 4.35%, Tubo ovarian mass in 2.90%, Other uterine neoplasm, Ovarian Dermoid in 1.45%, Fibroid Uterus, Endometrial neoplasm respectively.



Graph 1: Distribution of the patients as per the neoplasm diagnosed by CT

Table 3 : Distribution of the patients as per the Ca. Cervix diagnosed by CT

BulkyCervix (Later Proved on Biopsy)	6	8.70
Ca.Cervix with Para-metrial invasion	12	17.39
Ca.Cervix with Pyometra	8	11.59
Ca.Cervix with Bowel wall thickning	1	1.45
Ca.Cervix with Vaginal vault malignancy	1	1.45
Ca. with invasion of rectum	1	1.45
Total	29	42.03

Ca.Cervix on CT shown various features like Ca.Cervix with Para-metrial invasion in 17.39%, followed by Ca.Cervix with Pyometra in 11.59%, BulkyCervix (Later Proved on Biopsy) in 8.70%, Ca.Cervix with Bowel wall thickening, Ca.Cervix with Vaginal vault malignancy, Ca. with invasion of rectum in 1.45 %.

DISCUSSION

A pelvic mass is a swelling or an enlargement in the pelvic region, which may originate from either the gynecologic organs (the uterus, cervix, and uterine adnexa) or other pelvic organs (the bladder, intestines, ureters, and renal organs)¹¹⁻¹³. Most pelvic masses are benign conditions, such as an ovarian cyst, while others may be malignant^{14, 15}. According to the American Cancer Society estimates for ovarian cancer in the United States in 2016, about 22,280 women will receive a new diagnosis of ovarian cancer, while about 14,240 women will die from ovarian cancer¹⁶. Early and proper therapy is important in decreasing the death, such as surgery, chemotherapy, hormone therapy, and targeted therapy, as well as radiation

therapy^{17,18}. In order to have patients treated by optional way, a correct preoperative diagnosis of pelvic masses is very important. Physical exam, imaging tests like computed tomography (CT) scans, magnetic resonance imaging (MRI) scans, and ultrasound studies, and other tests may provide useful information about pelvic mass^{19,20}. However, it is very limited for one test to give an accurate diagnosis; for example, diagnostic ultrasound is only about 50% sensitive for stage I epithelial ovarian cancer and is further limited by poor specificity in accurately differentiating benign from malignant pathology²¹. In our study we have found the majority of the patients were in the age group (Yrs.) of 31-40 were 21.74%, In 41-50 were 21.74%, 51-60 were 15.94%, 61-70 were 14.49%, 21-30 were 13.04%, In 11-20 were 7.25%, 71-80 were 4.35%, 0-11 were 1.45%. The majority patients were having Ca.Cervix i.e. 42.03%, Ovarian Malignancy in 31.88%, Ca.Urinary Bladder in 7.25%, Ca.Rectum, Prostate mass in 4.35%, Tubo ovarian mass in 2.90%, Other uterine neoplasm, Ovarian Dermoid in 1.45%, Fibroid Uterus, Endometrial neoplasm respectively. Ca.Cervix on CT shown various features like Ca.Cervix with Para-metrial invasion in 17.39%, followed by Ca.Cervix with Pyometra in 11.59%, Bulky Cervix (Later Proved on Biopsy) in 8.70%, Ca.Cervix with Bowel wall thickening, Ca.Cervix with Vaginal vault malignancy, Ca. with invasion of rectum in 1.45%.

CONCLUSION

It can be concluded from our study that Spiral Computed tomography was very useful not only for the detection of neoplasm but also to see the extent which is very useful for the medical and surgical treatment

REFERENCES

1. Averette HE, Janicek MF, Menck HR: The National Cancer Data Base report on ovarian cancer. American College of Surgeons Commission on Cancer and the American Cancer Society. *Cancer* 1995, 76:1096-1103.
2. Dressman HK, Berchuck A, Chan G, Zhai J, Bild A, Sayer R, Cragun J, Clarke J, Whitaker RS, Li L, *et al.*: An integrated genomic-based approach to individualized treatment of patients with advanced-stage ovarian cancer. *J Clin Oncol* 2007, 25:517-525.
3. Curtin JP: Management of the adnexal mass. *Gynecol Oncol* 1994, 55:S42-46.
4. NIH consensus conference. Ovarian cancer. Screening, treatment, and follow-up. NIH Consensus Development Panel on Ovarian Cancer. *JAMA* 1995, 273:491-497.
5. Goff BA, Mandel LS, Melancon CH, Muntz HG: Frequency of symptoms of ovarian cancer in women presenting to primary care clinics. *JAMA* 2004, 291:2705-2712.
6. Padilla LA, Radosevich DM, Milad MP: Accuracy of the pelvic examination in detecting adnexal masses. *Obstet Gynecol* 2000, 96:593-598.
7. Bhosale P, Iyer R: Diagnostic imaging in gynecologic malignancy. *Minerva Ginecol* 2008, 60:143-154.
8. Heinz-Peer G, Memarsadeghi M, Niederle B: Imaging of adrenal masses. *Curr Opin Urol* 2007, 17:32-38.
9. Forstner R, Hricak H, Occhipinti KA, Powell CB, Frankel SD, Stern JL: Ovarian cancer: staging with CT and MR imaging. *Radiology* 1995, 197:619-626.
10. Tempny CM, Zou KH, Silverman SG, Brown DL, Kurtz AB, McNeil BJ: Staging of advanced ovarian cancer: comparison of imaging modalities—report from the Radiological Diagnostic Oncology Group. *Radiology* 2000, 215:761-767.
11. A. Wakayama, M. Inamine, W. Kudaka *et al.*, “Concurrent chemoradiotherapy for non-bulky stage IB/II cervical cancer without pelvic node enlargement,” *Anticancer Research*, vol. 33, no. 11, pp. 5123–5126, 2013.
12. J. Shwayder and K. Sakhel, “Imaging for uterine myomas and adenomyosis,” *Journal of Minimally Invasive Gynecology*, vol. 21, no. 3, pp. 362–376, 2014.
13. H. J. Paltiel and A. Phelps, “Us of the pediatric female pelvis,” *Radiology*, vol. 270, no. 3, pp. 644–657, 2014.
14. N. Smorgick and R. Maymon, “Assessment of adnexal masses using ultrasound: a practical review,” *International Journal of Women’s Health*, vol. 6, pp. 857–863, 2014.
15. S. M. E. Geurts, F. de Vegt, A. M. van Altena *et al.*, “Considering early detection of relapsed ovarian cancer: a review of the literature,” *International Journal of Gynecological Cancer*, vol. 21, no. 5, pp. 837–845, 2011.
16. R. L. Siegel, K. D. Miller, and A. Jemal, “Cancer statistics, 2016,” *CA: Cancer Journal for Clinicians*, vol. 66, no. 1, pp. 7–30, 2016.
17. J. G. Cohen, M. White, A. Cruz, and R. Farias-Eisner, “In 2014, can we do better than CA125 in the early detection of ovarian cancer?” *World Journal of Biological Chemistry*, vol. 5, no. 3, pp. 286–300, 2014.
18. E. A. Ignacio, R. Dua, S. Sarin *et al.*, “Pelvic congestion syndrome: diagnosis and treatment,” *Seminars in Interventional Radiology*, vol. 25, no. 4, pp. 361–368, 2008.
19. M. J. A. Engelen, A. H. H. Bongaerts, W. J. Sluiter *et al.*, “Distinguishing benign and malignant pelvic masses: the value of different diagnostic methods in everyday clinical practice,” *European Journal of Obstetrics Gynecology and Reproductive Biology*, vol. 136, no. 1, pp. 94–101, 2008.
20. S. Tingulstad, B. Hagen, F. E. Skjeldestad *et al.*, “Evaluation of a risk of malignancy index based on serum CA125, ultrasound findings and menopausal status in the pre-operative diagnosis of pelvic masses,” *British Journal of Obstetrics and Gynaecology*, vol. 103, no. 8, pp. 826–831, 1996.
21. L. S. Cohen, *Diagnostic Ultrasound in the Assessment of the Adnexal Mass*, The Global Library of Women’s Medicine, 2008.

Source of Support: None Declared
Conflict of Interest: None Declared