



## Original Research Article

## A prospective study to analyse the concordance in staging of carcinoma cervix between clinical examination, examination under anaesthesia and CECT

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## ABSTRACT

**Aim:** Carcinoma cervix is the second most common gynaecological cancer among women in India, with high prevalence in rural regions. Accurate staging is imperative for providing appropriate treatment. This study aims to analyse the concordance among clinical examination, examination under anaesthesia, and CECT in evaluating the clinical components of the staging.

**Materials and Methods:** Carcinoma cervix patients with clinical examination staging upto stage III, admitted in government royapettah hospital, department of surgical oncology between November 2017 and October 2019 were subjected to examination under spinal anaesthesia. CECT taken for all patients. Results regarding tumour size, fornix and parametrium involvement were tabulated and analysed.

**Results:** Tumour size: In 21.2% (17/80) of patients who had bulky disease in EUA, CECT has reported tumour size as <4cm. Based on tumour size 5/81(6.2%) patients were down-staged by EUA in comparison with clinical examination. In 5% of patients (4/80) EUA upstaged tumour size in comparison with clinical examination. Fornix: Clinical examination failed to identify fornix involvement in 8 out of the 83 patients who had fornix involvement in EUA (9.6%). Parametrium: Out of 67 cases who had parametrium involvement in EUA, clinical examination failed to identify it in 5. (7.4%). In 28.3% of patients (19/67) who had parametrium involvement in EUA, there was no parametrium involvement in CECT. Among the 71 patients with parametrium involvement, 4 patients were identified only in CECT (5.6%). Out of 16 patients who had parametrium involvement upto side wall in EUA, CECT had no HUN or lateral pelvic wall in 11 patients(68.5%). Clinical examination failed to identify parametrium involvement upto side wall in 11/16 patients stage IIIB according to EUA (68%).

**Conclusion:** In significant number of patients CECT did not identify parametrium involvement, and it had very low sensitivity for identifying disease upto side wall. There is a non-significant under staging of tumour size in CECT in comparison to EUA. Clinical examination has low sensitivity for identifying parametrium involvement and its extent in comparison to EUA. There is no significant difference.

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### 1. Introduction

Cervical cancer is the second most common cancer in India in women, accounting for 16.5% of all cancer cases in women and 8.35% death among all cancer cases in both men and women (Globocan 2018). FIGO Staging for carcinoma cervix is predominantly based on clinical examination. Precise staging is imperative for rendering appropriate therapy, with Concurrent chemo-radiation being

the preferred choice of primary treatment for stages IB3 and above (NCCN version 5.2019). Clinical staging is subject to high inaccuracy with error rates ranging between 26 and 66%.<sup>1</sup> Hence, for proper assessment of the size and the extent of tumour, examination under anaesthesia is required. Since there is muscle relaxation, the parametrium is better assessed under anaesthesia, which may not be feasible in a conscious patient due to discomfort. With the advent of imaging modalities like CT and MRI there have been claims of better assessment of stage. This study attempts to identify

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the concordance between clinical examination, examination under anaesthesia and CECT with respect to the various parameters involved in staging of carcinoma cervix and to define the relevance of EUA in the current scenario.

## 2. Materials and Methods

### 2.1. Study place

Government Royapettah Hospital, Department of surgical oncology.

### 2.2. Study period

November 2017 – October 2019.

### 2.3. Inclusion criteria

Carcinoma cervix patients with clinical stage IB2, IIA2, IIB, III.

### 2.4. Exclusion criteria

Carcinoma Cervix with HUN. On imaging.

### 2.5. Total number of patients

90.

CECT abdomen and pelvis was taken for all patients. Results regarding tumour size, fornix and parametrium involvement were tabulated and analysed.

The EUA was performed under spinal anaesthesia. With patient in low lithotomy position, visual assessment of the tumour was done using speculum, followed by vaginal and combined rectovaginal examination. During visual assessment, site and size of the tumour assessed. The vaginal fornices are visualised and also felt during digital examination. Rectovaginal examination was done to assess for parametrium. If nodularity or shortening of uterosacral ligament are noted, then this likely represents tumour involvement. If there is no cancer free space between tumour and pelvic sidewall, stage IIIB is assigned.

## 3. Results

### 3.1. Tumour size

In 21.2% (17/80) of patients who had bulky disease on EUA, CECT has reported tumour size as <4cm.

Based on tumour size 5/81(6.2%) patients were down-staged by EUA in comparison with clinical examination.

In 5% of patients (4/80) EUA upstaged tumour size in comparison with clinical examination.

### 3.2. Fornix

Clinical examination failed to identify fornix involvement in 8 out of the 83 patients who had fornix involvement on

EUA (9.6%).

### 3.3. Parametrium

Out of 67 patients who had parametrium involvement on EUA, clinical examination failed to identify it in 5. (7.4%).

In 28.3% of patients (19/67) who had parametrium involvement on EUA, there was no parametrium involvement reported in CECT.

Among the 71 patients with parametrium involvement, 4 patients were identified only in CECT (5.6%).

Out of 16 patients who had parametrium involvement upto side wall on EUA, CECT had no HUN or lateral pelvic wall in 11 patients.(68%).

Clinical examination failed to identify parametrium involvement upto side wall in 11/16 patients stage IIIB according to EUA (68%).

## 4. Discussion

Staging in carcinoma cervix is predominantly based on clinical examination. Examination under anaesthesia has been an integral part in staging of carcinoma cervix. The superiority of EUA to clinical examination has been proved by a number of studies, dating back to the works of J.R. Van Nagell et al, who stated that EUA increased overall staging accuracy from 54 to 74%.<sup>2</sup> B Stefanon et al reported modification in clinical stage in 24.5% of patients and a 10% change in therapeutic decision after EUA.<sup>3</sup> In our study there is 11.2% discrepancy between EUA and clinical examination with regards to tumour size. In the evaluation of parametrium, clinical examination failed to identify involvement in 7.4% of patients. There was a significant difference in identification of level of parametrial involvement, with clinical examination failing to identify sidewall involvement in 68% of patients.

With the advent of cross-sectional imaging modalities like CT and MRI, the staging accuracy has been reported to be improved when compared to clinical examination. Hricak H et al. reported that for the detection of advanced stage (> or = IIB), sensitivity of clinical staging is 29%, CT is 42%, and 53% for MRI.<sup>4</sup>

Ozsarlak et al. reported that the overall accuracy of staging for clinical examination, CT, and MRI to be 47, 53, and 86 per cent respectively when compared with surgical findings.<sup>5</sup>

Though the above mentioned studies reported better staging accuracy with CT there is significant disagreement between CT and EUA in our study. CECT significantly understaged tumour size in 21.2% of patients in comparison to EUA.

CT has limitations in the depiction of cervical cancer. Upto 50 per cent of tumours are isodense to cervical stroma on contrast-enhanced CT and hence not discretely demonstrated.<sup>5</sup> Hence there is significant discrepancy in the

tumour size reported.

In the assessment of parametrial invasion, Hancke et al. reported that, results with CT and MRI were no better than with palpation (accuracy: CT 61% and 54%, MRI 61% and 56%, respectively).<sup>6</sup> Whitley et al. also showed poor sensitivity by CT in diagnosing pelvic side wall invasion.<sup>7</sup> Similar to their experience, in our study there was no parametrial involvement reported by CECT in 28.3% of patients who had parametrial involvement in EUA. The sensitivity for identifying side wall involvement is very low in CECT with 68% of patients identified to have disease extending upto side wall in EUA showed no HUN or definite lateral wall involvement. Similar low identification of pelvic sidewall involvement by CT was reported by T.V Prasad et al. who stated that clinical examination showed pelvic side wall invasion in 51 per cent patients whereas CT showed in 13.2 per cent patients only.<sup>8</sup>

There is no significant difference in identifying fornix involvement between EUA and clinical examination.

Since advanced carcinoma cervix is primarily treated with chemoradiation pathological confirmation was not available to identify the accuracy of CECT and clinical finding.

## 5. Conclusion

EUA offers undeniable advantage over clinical examination in staging of carcinoma cervix.

CECT does not reliably correlate with EUA, with significant percentage of understaging, especially with regards to tumour size and pelvic sidewall involvement. The role of CECT is in identification of lymphnode and distant metastasis.

## 6. Source of Funding

None.

## 7. Conflict of Interest

None.

## References

1. Ho C, Chien T, Jeng C, Tsang Y, Shih B, Chang S. Staging of cervical cancer: comparison between magnetic resonance imaging, computed tomography and pelvic examination under anesthesia. *J Formosan Med Assoc.* 1992;91(10):982–90.
2. Nagell JRV, Harralson JD, Roddick JW. The effect of examination under anesthesia on staging accuracy in cervical cancer. *Am J Obstet Gynecol.* 1972;113(7):938–41.
3. Stefanon B, Tana S, Lozza L, Ammatuna M, Cobellis L. Examination under anaesthesia for clinical staging of invasive cervical carcinoma. *Ital J Gynaecol Obstet.* 2000;12(4):157–8.
4. Hricak H, Quivey JM, Campos Z, Gildengorin V, Hindmarsh T, Bis KG. Carcinoma of the cervix: Predictive value of clinical and magnetic resonance (mr) imaging assessment of prognostic factors. *Int J Radiat Oncol.* 1993;27(4):791–801. doi:10.1016/0360-3016(93)90451-z.
5. Özsarlak Ö, Tjalma W, Schepens E, Corthouts B, de Breeck BO, Marck EV, et al. The correlation of preoperative CT, MR imaging, and clinical staging (FIGO) with histopathology findings in primary cervical carcinoma. *Eur Radiol.* 2003;13(10):2338–45. doi:10.1007/s00330-003-1928-2.
6. Hancke K, Heilmann V, Straka P, Kreienberg R, Kurzeder C. Pretreatment staging of cervical cancer: is imaging better than palpation? Role of CT and MRI in preoperative staging of cervical cancer: single institution results for 255 patients. *Ann Surg Oncol.* 2008;15:2856–61.
7. Whitley NO, Brenner DE, Francis A, Santa UV, Aisner J, Wiernik PH, et al. Computed tomographic evaluation of carcinoma of the cervix. *Radiol.* 1982;142(2):439–46. doi:10.1148/radiology.142.2.7054834.
8. Prasad TV, Thulkar S, Hari S, Sharma DN, Kumar S. Role of computed tomography (CT) scan in staging of cervical carcinoma. *Indian J Med Res.* 2014;139(5):714–9.

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