

Radical hysterectomy – its trend and role in treatment of carcinoma cervix

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Carcinoma cervix is the second most common killer disease in female [1]. In India this is the commonest malignancy in women. The number of patients with early stage cervical cancer has steadily increased with the widespread use of the papanicolaou test for screening. Comparatively younger population are being affected by this malignancy. Increasing awareness also leads to early diagnosis of the disease. With that trend more patients with invasive disease are diagnosed with early stage disease and are the candidates for primary surgical treatment with radical hysterectomy and pelvic lymphadenectomy. Now a days there are increasing number of recurrent cases of cervical cancer following treatment with chemo-radiation or radiotherapy (external beam therapy with brachy therapy or external beam therapy alone). This group of patient also need surgery - specially radical hysterectomy with pelvic lymphadenectomy for treatment.

In developing countries carcinoma cervix accounts for 15% of female malignancies with life time risk of 3% where as in developed countries these are 4.4% and 1.5% respectively. More than 8% of the global burden occurs in developing countries [2]. Because of the gradual and progressive obliterative endarteritis produced by the irradiating tissue, complications resulting from ischaemic changes i.e. cystitis, proctitis, enteritis, colpocleisis and pyclo nephritis can be seen many years after radiotherapy. A late recurrence after

primary radical surgery is rare if compared with primary radiotherapy [2].

Trend of radical hysterectomy

John Clark, a resident doctor in John Hopkins Hospital, USA, in 1895, for the first time performed radical hysterectomy for carcinoma cervix. Wertheim, a Viennese physician for the first time performed radical hysterectomy in more systematic and scientific way in 1898. He published a series of 500 cases during 1898 to 1911. In 1905 he reported a series of 270 cases where operative mortality was 18% and major morbidity was 31% [3]. Schauta, in 1901 reported a series of radical vaginal hysterectomy with comparatively lower mortality rate. In late 20th century, radiation therapy become more popular and favoured. Joe. V. Meigs of USA in 1944, repopularised the radical hysterectomy. He used to remove all pelvic lymph nodes. In his series of 344 cases reported in 1995 operative mortality was 1% and survival rate 75% in stage I. Americh and Navratil also reported their own method of Radical Hysterectomy with lower complication rate. Prof. S Mitra of Calcutta, India reported a series of vaginal hysterectomy followed by extra peritoneal (bilateral) lymphadenectomy with better results and lower complication rate. Prof. S.K Choudhury of Calcutta, India, reported a series of

modified Schauta technique with good results. He used to operate abdomino- virginally.

Dargent, 1987 combined laparoscopic bilateral lymphadenectomy followed by Schauta operation [2]. Nezha (1992) first performed laparoscopic radical hysterectomy with pelvic and aortic lymphadenectomy. Spirtos and associates reported 78 patients with average blood loss of 225 ml and 5.1% recurrence in 3 yrs follow up. Professor Daniel Dargent from Lyon, France, performed and reported vaginal radical trachelectomy in 1994 [4]. Robotic radical hysterectomy performed with the help of the Da Vinci Robotic System has revolutionised the cancer surgery by reducing blood loss, hospital stay and surgeon’s physical stress; at the same time increasing the precision of surgery [5]. Radical trachelectomy the latest addition to the surgical options has shown a vista of light to the young population who want to preserve their reproductive function.

Type of radical hysterectomy

Rutledge and Colleagues at MD Anderson Hospital (1974) classified radical hysterectomy as follows which defines its radicality [6] (Table 1).

Table 1: Classification of radical hysterectomy		
Class	Description	Indication
I	Extrafascial Hysterectomy	CIN, Early stromal invasion
II	Removal of medical half cardinal ligament & uterosacral ligament with upper 1/3 rd of vagina	Microcarcinoma, post irradiation
III	Removal of entire cardinal and uterosacral ligament with upper 1/3 rd of vagina	Stage I (b) and II (a)
IV	Removal of periurethral tissue, superior vesical artery with 3/4 th of vagina	Anterior central recurrence
V	Removal of portion of the distal ureter and bladder	Central recurrence involving portion of distal ureter and bladder

Role of radical hysterectomy in recurrent carcinoma cervix

In developing countries, like India many patients receive sub optimal therapy in locally advanced cervical cancer. Many patients reported only in

advanced stage where radiotherapy or chemoradiation is the treatment. Following successful therapy many of them report with central recurrence. All these patients are the candidates for radical hysterectomy. Some of them needs additional treatment with external beam radiotherapy (EBRT).These are really challenging cases as following radiotherapy the tissues are getting fibrosed and less vascularised which leads to difficulty in dissection. There is increased risk of injuring the structures and viscera due to improper cleavage because of radio fibrosis. On the other hand due to the effects of chemotherapy some time the patient become immuno compromised or physically weak which is another challenge for tissue healing. Many of the patients are even suffering from psychological depression state which is also a hindrance to the post operative recuperance.

Discussion

The author, in his own series of 50 cases of recurrent cases following primary radiotherapy from November 2010 to November 2015 in North East Cancer Hospital and Research Institute, Jorabat , Assam, India found encouraging result. There was no

primary mortality in the series. Out of 50 cases 48 cases (96%) were treated by classical type II and type III radical hysterectomy with lymphadenectomy (abdominally). Only in 2 cases (4%) abdomino vaginal hysterectomy was performed. This method has the advantage of removal of vaginal cuff liberally from below with minimal damage to the urinary bladder, urethra and rectum. Of course it takes some more operative time (average 30 minutes) to complete the surgery. In case of vaginal infiltration, specially stage II (a) cases have advantage in the technique for removal of longer vaginal cuff. In the series we had only 4 % postoperative morbidity in the form of wound gapping (2%) and vaginal

bleeding due to secondary infection (2%) . There were no urinary fistula (unlike the series as in the past) in follow up period of 1 yr to 5 yr. There were recurrence in 10 (20%) cases in the first year who were treated by further chemoradiation.

In my own series of 150 cases of radical hysterectomy for carcinoma cervix - performed in different Institutes of Assam, India during Feb, 1992 to Feb, 1996 60 cases (40%) were performed by modified Schauta technique and 90 cases (60%) by classical technique of abdominal radical hysterectomy with bilateral lymphadenectomy. In modified Schauta technique – bilateral lymphadenectomy was completed as the 1st step followed by ureteral dissection, perivascular and pararectal dissection, resection of uterosacral ligament and parametrium. In next step of vaginal dissection removal of paracolpos, delivery of the whole specimen pervaginum followed by closure of the vaginal vault is done. The patient suffering from stage II (a) disease were most efficiently dealt with by this modified Schauta technique.

To deal with the difficult dissections of pelvic lymph nodes specially in the obturator fossa, a specially innovated technique of hydro dissection was used. In this procedure good amount of normal saline (NS) or ringer lactate (RL) is pushed to the tissue surrounding the gland with pressure with a 10 cc syringe. Same method was also employed to dissect away a lymph gland adhered to a big pelvic vessel and adhesions of bowels to uterus or ovaries or bladder. For this with the help of a cannula the fluid was pushed into the cleavage before further sharp dissection. Because of this procedure all the cases could be completed safely inspite of lots of radio fibrosis. Only in 1 (2%) case, there was intestinal injury and in another 1 (2%) case. there was damage to the urinary bladder. Both the patients were managed by primary repair in the same sitting. Lucely Cetina et al (2009) in their study of 80 patients showed that the radical hysterectomy can be used after EBRT- CT without compromising survival in FIGO stage I B2 – II B cervical cancer patients where brachytherapy is not available [7].

Conclusion

Role of radical hysterectomy in treatment of carcinoma cervix is crucial. At the advent of modern technology like Robotic Surgery, it has become more précised, blood less, less traumatic and less tiresome, (for surgeons). Radical trachelectomy finds the answer for continuation of reproductive functions. For the younger population suffering from early cervical cancer. In this modern era definitely surgery is the right answer which can preserve the sexual function in contrast to the treatment by radiotherapy. For recurrent cases after radiotherapy probably surgery is the most reasonable solution.

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