Gineco.eu [12] 161-165 [2016]
DOI: 10.18643/gieu.2016.161

gineco eu

Curative anterior pelvic exenteration for pelvic recurrence after irradiated, surgically treated cervical cancer. A case report and literature review

Abstract

Pelvic recurrences after irradiated and surgically treated cervical cancer are frequent situations which require an aggressive surgical approach in order to provide a benefit in terms of survival. Most often in these situations pelvic exenterations are needed to obtain a curative resection with negative resection margins. We present the case of a 68 year old patient who was successfully submitted to anterior pelvic exenteration for a centropelvic recurrence after pre-irradiated, surgically treated cervical cancer. At eighteen months follow up the patient is free of local or distant recurrences.
Keywords: *pelvic recurrence, cervical cancer, curative pelvic exenteration.*

Nicolae Bacalbașa[1], Irina Bălescu[2]

1. UMF "Carol Davila", Bucharest, Romania
2. "Ponderas" Hospital, Bucharest, Romania

Correspondence:
Dr. Nicolae Bacalbașa
e-mail: nicolae_bacalbasa @yahoo.ro

Introduction

Cervical cancer remains an important health problem for women worldwide, with high incidence rates and, more tragically, with high mortality rates[1]. Once the diagnosis of cervical cancer is established, the first intent therapeutic option is influenced by the stage at diagnosis[2]. In cases presenting locally advanced cervical tumors neoadjuvant chemo-irradiation followed by surgery represents the preferred therapeutic sequence in up to 70% of patients[3]. Even this therapeutic protocol is closely respected, up to 30% of patients will develop pelvic recurrence in the next 18 to 24 months, the recurrence risk being strongly influenced by the the International Federation of Gynecology and Obstetrics stage at diagnosis[2,4]. Once the pelvic recurrence is diagnosed, in most cases the only feasible therapeutic approach remains surgery; chemo-irradiation is often contraindicated due to the fact that a maxim dose of irradiation had been already administrated at the time of the initial diagnosis while chemotherapy is ineffective on tumors developed in a pre-irradiated, hypoxic and poor vascularized area. However, surgical treatment consists in extended multiple visceral resections in order to achieve an R0 resection with negative margins and in consequence, a curative procedure[5,6].

Case report

An 68-year-old woman has been diagnosed with stage IIIA cervical cancer two years previously. The patient was initially submitted to pelvic irradiation with concurrent chemotherapy, followed by a total radical hysterectomy with bilateral adnexectomy, pelvic and para-aortic lymph node dissection. The specimen revealed the presence of a moderately differentiated squamous cell cervical cancer, with two positive pelvic lymph nodes and no positive para-aortic lymph node. Twenty-four months later the patient self-referred for pelvic pain and macroscopic hematuria and she was diagnosed with a pelvic recurrence invading the urinary bladder. Due to the fact that the patient had been submitted to the maximum dose of irradiation at the moment of the initial diagnosis, surgery was performed as first line therapy when recurrence was diagnosed. The recurrent tumor was resected with curative intent en bloc with total cystectomy (Figures 1-5). The two ureters were exteriorized in terminal right ureterostomy. The early postoperative course was uneventful, the patient being discharged at eight days postoperatively while the histopathological examinations confirmed the recurrent character of the tumor and the presence of negative resection margins. However, tumoral emboli were present in the surrounding vessels. At 18 months follow up the patient was free of any recurrent disease.

Discussion

Pelvic recurrences after pre-irradiated, surgically treated cervical cancer are not uncommon even if a radical therapeutic strategy is applied. These findings

Received: *September 20, 2016*
Revised: *October 21, 2016*
Accepted: *November 02, 2016*

Figure 1. ***Pelvic recurrence invading the both ureters and the urinary bladder***

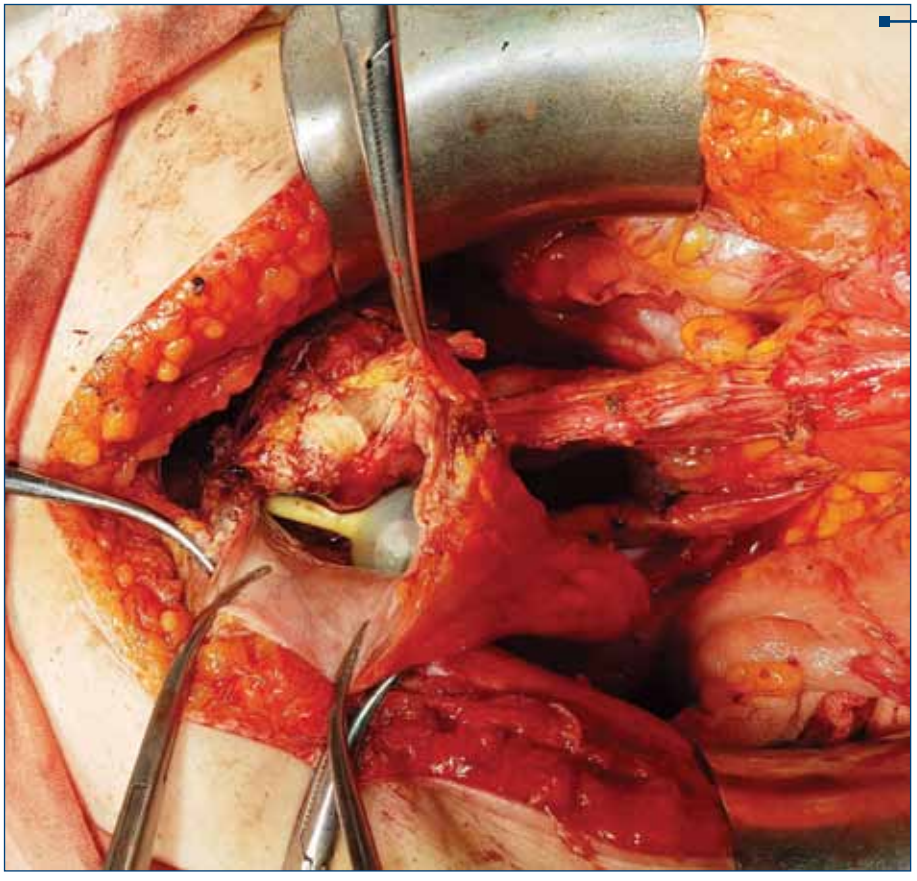

Figure 2. ***Pelvic recurrence invading the urinary bladder (trans-sected)***

are explained by the theory that, once surgery is performed, the natural compartmental borders are destroyed and a future neoplastic transgression will occur more rapidly[7]. Moreover, surgery in association with radiation therapy can lead to the obstruction of certain vascular and lymphatic routes, this phenomena being

Figure 3. The aspect of the right side pelvic wall after completing the dissection. The right ureter has been sectioned

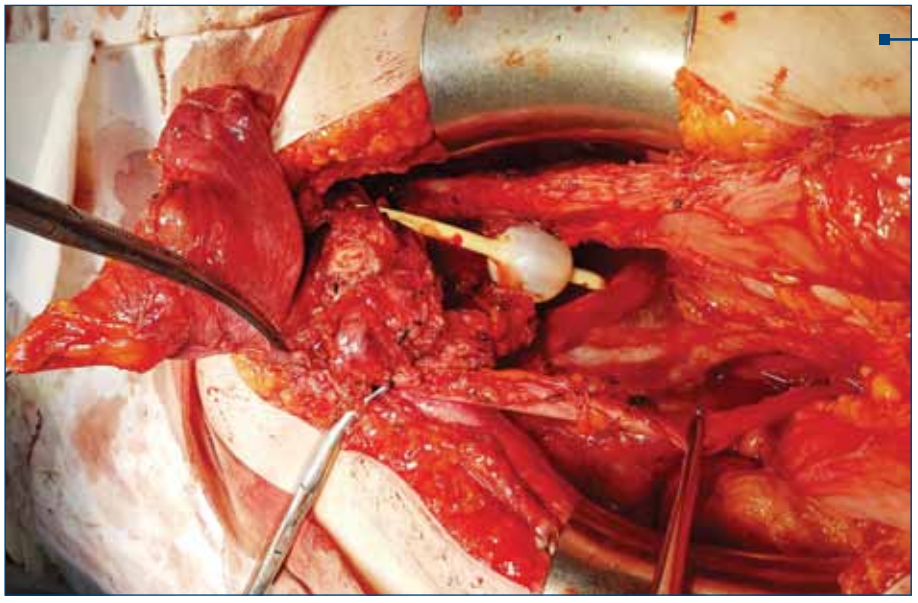

Figure 4. The aspect after tumor mobilization en bloc with the urinary bladder. The left ureter is exposed in order to be sectioned

responsible for a possible retrograde tumor embolism; once the tumoral emboli are formed, they will spread using uncommon routes and will generate recurrent tumors[8]. Once pelvic recurrences develop in a previously irradiated space, multi-compartmental pelvic resection remain the only chance for cure, long term survival of up to 50% being reported so far[6]. The archetype of multi-compartmental en bloc pelvic resections remains the pelvic exenteration.

Initially proposed with palliative intent by Doctor Alexander Brunschwig in 1948, pelvic exenteration has become the therapy of choice for locally invasive pelvic recurrences originating from colorectal or genito-urinary malignancies, nowadays being mostly performed with curative intent[2,9]. However, the decision of performing of such a radical procedure should be taken after a profound evaluation of several factors such as size of the tumor, disease free survival, histopathological subtype or the presence of lymph node invasion at the moment of the initial surgical procedure[2]. Therefore, patients presenting larger than 5 cm recurrences diagnosed after a disease free survival period shorter than 2 years with squamous cell histology have a poor prognosis in terms of survival even if a curative intent surgical procedure is performed[2,5,10,11]. As for the presence of lymph node invasion at the moment at the

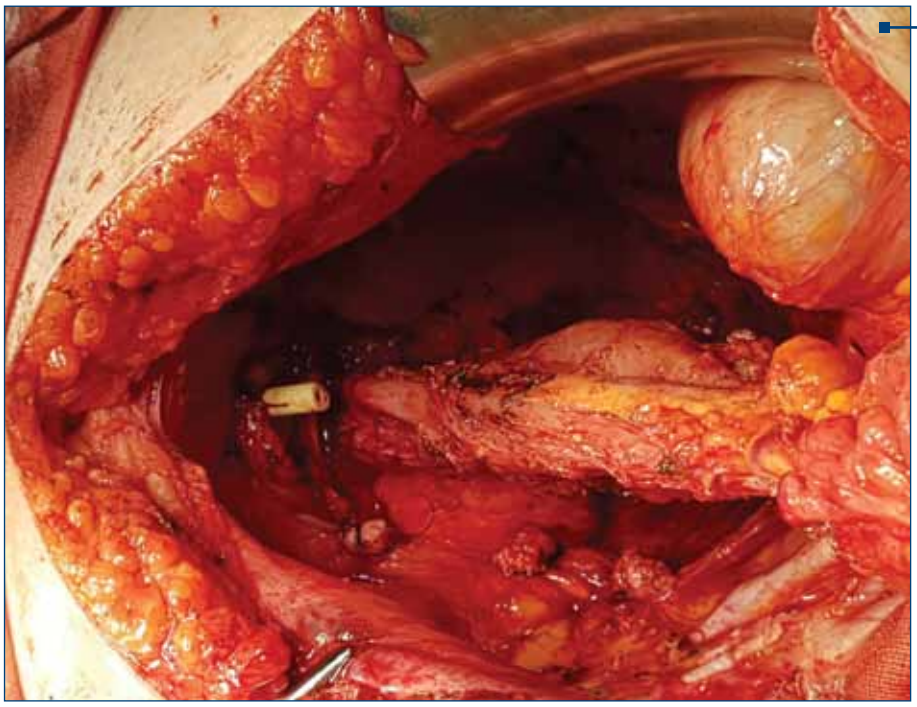

Figure 5. ***The final aspect after anterior pelvic exenteration***

initial diagnosis, controversial opinions exist: while some authors consider that lymph node metastases at the time of initial diagnosis represent a negative prognostic factors[12,13], other conclude that the lymph node status does not influence the overall survival after resection[14,15].

One of the largest study regarding the indications and long term clinical outcomes after pelvic exenteration for locally advanced or recurrent cervical cancer is the one conducted by Schmidt and published in 2012[16]. In this study the authors included 282 patients submitted to pelvic exenteration for advanced or relapsed cervical cancer. Exenteration was performed with curative intent in 47% of cases. The overall survival was 41% at 5 years and 37% at 10 years, while the specific survival of patients submitted to curative resection was 64% at 5 years and 57% at 10 years. An important aspect is the one that the rates of 5 and 10 year survival were similar for patients primarily submitted to pelvic exenteration and for patients submitted to pelvic exenteration for relapsed tumors. Contrarily to other studies[5,10], the histopathological subtype of squamous cell carcinoma had better 5year survival rates when compared with other histopathological subtypes. When it comes to the influence of the presence of lymph node metastases on survival, the authors showed that the presence of positive pelvic lymph nodes was not associated with a poorer prognosis. However, the presence of positive pelvic lymph nodes in association with positive para-aortic lymph nodes had a negative impact on survival. Moreover, patients submitted to curative pelvic exenteration who had positive lymph nodes reported similar rates of 5 and 10 years overall survival compared to those submitted to curative pelvic exenteration but in whom the pelvic lymph nodes were negative[16].

In our case, the patient was diagnosed with a 3.4 cm diameter recurrent tumor invading the urinary bladder trigon two years after the initial diagnosis of squamous cell cervical cancer while the histopathological studies at the time of the primary surgical procedure revealed the presence of only two positive pelvic lymph nodes, with negative para-aortic lymph nodes.

When it comes to the characteristics of the recurrent tumor which seem to influence the long term survival, the most important prognostic factors are represented by the presence of mesorectal lymph node metastases, the lymphovascular space invasion and the involvement status of the resection margins. Patients presenting mesorectal lymph node metastases associated with lympho-vascular space invasion and positive resection margins report a significantly worse survival[17,18]. In our case although the resection margins were negative, tumoral emboli were present in the adjacent vessels, leading to a higher rate of re-recurrence. However, after 18 months follow up the patient was alive with no signs of relapse[19].

Although it can significantly increase lifespan, pelvic exenterations remain complex surgical procedures, frequently associated with severe early postoperative complications such as leaks, gastrointestinal fistulas, ureteral or intestinal obstructions, pyelonephritis, pelvic abscesses or thrombotic events[2,6]. An important number of complications are induced by the creation of a hypoxic large pelvic cavity as a result of irradiation and extended pelvic resections leading to life-threatening complications[2,6,20]. Therefore, pelvic exenteration

should be reserved for cases with a good biological and clinical status in which a curative resection is feasible.

Another intensely discussed topic regarding pelvic exenteration is whether there is any limit of age for performing this ultra-radical procedure. Until now most authors considered that older age remains a contraindication for pelvic exenteration[5,21,22]. Contrarily, in Schmidt's study, the worst 5 year survival was reported in the youngest group (i.e. 23 to 44 years). In the same study both 5 year and 10 year overall survival rates were higher for the subgroup of 55 to 79 year old patients compared to the 45-55 year-old group[8]. In our case, although the patient had a higher age (i.e. 68-years-old at the time of exenteration), the postoperative course was uneventful and a benefit of survival was provided. This fact can be explained in this certain case by the absence of other important comorbidities such as diabetes or severe cardiovascular disease, the only associated pathology being a moderate risk group of hypertension.

Conclusions

Pelvic exenteration for recurrent cervical cancer with curative intent is feasible and can be associated with a significant benefit of survival especially if negative resection margins are achieved. Other incriminated prognostic factors include disease free survival period, dimensions of the recurrent tumor, histopathological subtype and lymph node invasion. However, the influence on survival of the last factors are still needed to be noted, contradictory results being reported until present. ■

References

1.Ferlay J, Shin HR, Bray F. et al. Estimates of worldwide burden of cancer in 2008: GLOBOCAN 2008. Int J Cancer 2010, 127, 2893-917.
2. Sardain H, Lavoue V, Redpath M. et al. Curative pelvic exenteration for recurrent cervical carcinoma in the era of concurrent chemotherapy and radiation therapy. A systematic review. Eur J Surg Oncol 2015, 41, 975-85.
3. Gadducci A, Tana R, Cosio S. et al. Treatment options in recurrent cervical cancer (Review). Oncol Lett 2010, 1, 3-11.
4. Peiretti M, Zapardiel I, Zanagnolo V. et al. Management of recurrent cervical cancer: a review of the literature. Surg Oncol 2012, 21, e59-e66.
5. Marnitz S, Kohler C, Muller M. et al. Indications for primary and secondary exenterations in patients with cervical cancer. Gynecol Oncol 2006, 103, 1023-30.
6. Hockel M, Dornhofer N. Pelvic exenteration for gynaecologicaltumours: achievements and unanswered questions. Lancet Oncol 2006, 7, 837-47.
7. Hockel M. Laterally extended endopelvic resection (LEER)-principles and practice. Gynecol Oncol 2008, 111, S13-S17.
8. Jurado M, Alcazar JL, Martinez-Monge R. Resectability rates of previously irradiated recurrent cervical cancer (PIRCC) treated with pelvic exenteration: is still the clinical involvement of the pelvis wall a real contraindication? a twenty-year experience. Gynecol Oncol 2010, 116, 38-43.
9. Brunschwig A. The surgical treatment of cancer of the cervix uteri; a radical operation for cancer of the cervix. Bull N Y Acad Med 1948, 24, 672-83.
10. Berek JS, Howe C, Lagasse LD. et al. Pelvic exenteration for recurrent gynecologic malignancy: survival and morbidity analysis of the 45-year experience at UCLA. Gynecol Oncol 2005, 99, 153-9.
11. Baiocchi G, Guimaraes GC, Faloppa CC. et al. Does histologic type correlate to outcome after pelvic exenteration for cervical and vaginal cancer? Ann Surg Oncol 2013, 20, 1694-700.
12. Höckel M. Pelvic recurrences of cervical cancer. J Pelvic Surg 1999, 5(5), 255-66.
13. Shingleton HM, Soong SJ, Gelder MS. et al. Clinical and histopathologic factors predicting recurrence and survival after pelvic exenteration for cancer of the cervix. Obstet Gynecol 1989, 73, 1027-34.
14. Wang CJ, Lai CH, Huang HJ. et al. Recurrent cervical carcinoma after primary radical surgery. Am J Obstet Gynecol 1999, 181, 518-24.
15. Benn T, Brooks RA, Zhang Q. et al. Pelvic exenteration in gynecologic oncology: a single institution study over 20 years. Gynecol Oncol 2011, 122, 14-8.
16. Schmidt AM, Imesch P, Fink D. et al. Indications and long-term clinical outcomes in 282 patients with pelvic exenteration for advanced or recurrent cervical cancer. Gynecol Oncol 2012, 125, 604-9.
17. Chiantera V, Rossi M, De Iaco P. et al. Survival after curative pelvic exenteration for primary or recurrent cervical cancer: a retrospective multicentric study of 167 patients. Int J Gynecol Cancer 2014, 24, 916-22.
18. Westin SN, Rallapalli V, Fellman B. et al. Overall survival after pelvic exenteration for gynecologic malignancy. Gynecol Oncol 2014, 134, 546-51.
19. Numa F, Ogata H, Suminami Y et al. Pelvic exenteration for the treatment of gynecological malignancies. Arch Gynecol Obstet 1997, 259, 133-8.
20. Fotopoulou C, Neumann U, Kraetschell R. et al. Long-term clinical outcome of pelvic exenteration in patients with advanced gynecological malignancies. J Surg Oncol 2010, 101, 507-12.
21. Symmonds RE, Pratt JH, Webb MJ. Exenterative operations: experience with 198 patients. Am J Obstet Gynecol 1975, 121, 907-18.
22. Maggioni A, Roviglione G, Landoni F. et al. Pelvic exenteration: ten-year experience at the European Institute of Oncology in Milan. Gynecol Oncol 2009, 114, 64-8.