Cytoreductive Surgery for Peritoneal Carcinomatosis from Endometrial Cancer - A Case Report and Literature Review

N. Bacalbașa1, C. Anghel2, I. Barbu2, I. Dudus2, M.I. Ionescu2, M. Pautov2, M. Motthor2, Irina Bâlescu3, V. Brașoveanu1,4

1“Carol Davila” University of Medicine and Pharmacy Bucharest, Romania
2“Dan Setlacec” Department of General Surgery and Liver Transplantation Fundeni Clinical Institute, Bucharest, Romania
3“Ponderas” Hospital, Bucharest, Romania
4“Titu Maiorescu” University, Faculty of Medicine, Bucharest, Romania

ABSTRACT

Endometrial cancer is one of the most common malignancies of the female reproductive tract, with increasing incidence particularly due to the increase proportion of the overweight persons. While cases diagnosed in an early stage of the disease report an excellent outcome, things significantly change when it comes to advanced stages. However it seems that women who already present peritoneal seeding at the moment of diagnosis benefit most from an aggressive surgical approach, similar to the one performed in advanced stage ovarian cancer. We present the case of a 67 year old patient diagnosed with peritoneal carcinomatosis from endometrial cancer in which the principles of cytoreductive surgery were successfully applied.

Key words: endometrial cancer, peritoneal carcinomatosis, cytoreductive surgery
INTRODUCTION

Endometrial cancer is one of the most common malignancies of the genital tract in women, with an increasing incidence in the last few years. The reported incidence in the United States surpassed 40,000 cases/year while the death rate reached almost 7,500 deaths/year (1,2). The most important prognostic factors are thought to be diabetes, estrogen secreting tumors, nulliparity and the higher number of overweight persons (2). While up to 70% of patients are diagnosed in an early stage of the disease and report an excellent outcome (5 year overall survival of 90%), patients diagnosed in an advanced stage of the disease have a poor prognosis associated with low rates of survival - 67% and 23%, respectively, for cases with regional or distant disease (3). However, in these cases it seems that an aggressive surgical approach similar to the one performed in advanced ovarian cancer is perfectly justified (2,4).

CASE REPORT

A 67 year old, nulligesta, nullipara, obese patient presented for abdominal and pelvic diffuse pain associated with vaginal bleeding. Local examination revealed the presence of a distended slightly painful abdomen, with no palpable tumor mass. A biotic uterine curettage was performed and the histopathological findings revealed a poorly differentiated endometrial adenocarcinoma. Abdomino-pelvic computed tomography revealed the presence of disseminated tumor masses all over the peritoneal surface. The patient was submitted to surgery; intraoperatively a large uterine tumor and diffuse peritoneal carcinomatosis were found, so the patient was operated according to the principles of ovarian cytoreductive surgery. A radical total hysterectomy en bloc with bilateral adnexectomy, total omentectomy, total colectomy, pelvic and parietal peritoneectomy, pelvic and lymph node dissection were performed (Fig. 1-9). The histopathological findings confirmed the presence of a poorly differentiated endometrial adenocarcinoma.

DISCUSSIONS

The efficacy of debulking surgery and minimal residual disease after cytoreductive surgery in ovarian cancer encouraged the surgeons to apply the same principles in other advanced abdominal malignancies in order to obtain a better outcome in
Figure 4. Tumoral nodules involving the transverse mesocolon

Figure 5. Performing parietal peritonectomy

Figure 6. The final aspect after resection, pelvic and para-aortic lymph node dissection

Figure 7. Parietal peritonectomy

Figure 8. The final aspect of the pelvic cavity after resection

Figure 9. The specimens: total hysterectomy with bilateral adnexectomy, total colectomy and total omentectomy


Cytoreductive Surgery for Peritoneal Carcinomatosis from Endometrial Cancer

patterns of survival. Several studies demonstrated the efficacy of cytoreductive surgery associated with other therapeutic strategies such as hypertermic intraperitoneal chemotherapy (HIPEC) in colon cancer and endometrial cancer (2, 4-6).

Delotte et al included in their study 13 patients diagnosed with advanced stage endometrial cancer with peritoneal disseminations who were submitted to complete resection and HIPEC. During cytoreductive surgery, an average of 2 organs were resected, the most frequently performed resections being bowel resection, atypical hepatectomies, splenectomies, partial cystectomy or partial frenectomy. They reported a disease free survival of 11,4 months and a median overall survival of 19,4 months. An important conclusion of this study was that association of HIPEC was able to offer a significant increase of survival when compared to cytoreduction alone (19,4 months vs. 12 months) (2).

Some other studies also consider that aggressive cytoreduction remains the most important prognostic factor related to an increased overall survival, while other authors consider that the evolution of these cases in strongly correlated to histopathological features and to the initial extent of the disease (7,8). Bakrin et al reported a case series of 5 patients with advanced endometrial cancer with peritoneal carcinomatosis treated by the same principles and reported improved outcomes: 2 patients were free of disease after 2 and 3 years while the other 2 patients were living with recurrence after 1 and 3 years (4).

Abu Zaid et al included in their study 6 patients diagnosed with advanced stage endometrial cancer who were treated by cytoreductive surgery and HIPEC from November 2010 to August 2013. Cytoreductive surgery consisted of peritonectomy and visceral resections in order to provide a complete elimination of the tumor masses from the abdomino-pelvic Cavity while HIPEC was performed with Cisplatin and Doxorubicin at 41 to 42,2°C for 90 minutes. Postoperatively all patients were submitted to systemic chemotherapy based on carboplatin and paclitaxel regimens. Two cases developed recurrent disease during the next 6 months, one of them being dead because of the disease 5 months after surgery, while the other 4 patients were alive and free of any recurrence at 7,34,35 and 19 months (9).

There are authors who consider that endometrial cancer consist in fact of two different tumor types: type 1 endometrial cancer has a primary lymphatic spread by pelvic lymph nodes especially obturatory fossa lymph nodes and only secondarly to iliac lymph nodes, while type 2 has a peritoneal pattern of spread (10). According to these two different patterns of spread, studies have shown that for type 1 stage IV endometrial cancer complete debulking can be achieved only in 44-72% and only patients with good biological status should be candidates for this surgical approach (11,12,13). Bristow et al conducted a study on 65 patients diagnosed with advanced endometrial cancer who were submitted to surgery between January 1990 and December 1998. Complete R0 cytoreduction was defined as the absence of residual disease larger than 1 cm; they demonstrated that the overall survival was significantly higher in cases submitted to R0 resection (34,3 months) when compared to those with >1 cm residual disease (11 months, p=0,0001). Other factors associated with improved outcomes were higher performance status, age under 58 years, adjuvant chemo-irradiation. On multivariate analysis age (p=0,023), performance status (p=0,043) and residual disease (p=0,0001) were independent predictors of survival (13).

When it comes to patients in whom type 2 stage IV endometrial cancer is encountered, it seems that this subtype resembles most with advanced ovarian cancer and its propagation via transperitoneal route; in consequence, these patients should benefit most from an aggressive surgical approach similar with debulking surgery in advanced stage ovarian cancer (14-21). In order to increase the rate of complete cytoreduction some authors recommended the administration of 3 cycles of neo-adjuvant chemotherapy (22); however patients who report a poor response to neoadjuvant treatment might also not benefit from cytoreductive surgery too (23).

When it comes to association of adjuvant treatments such as radiotherapy, studies have shown that it might be useful in the postoperative course. Administrated pre-operatively, radiation therapy seems to interfere with the adequate tumor staging without improving the outcomes (23,24). In order to increase the overall survival, adjuvant chemotherapy can be associated; most authors sustain the association of taxanes- platinum salts regimens (25-27). Randall et al included in their study 388 patients diagnosed with stage IV endometrial cancer who were submitted first to cytoreductive surgery (with maximum residual disease < 2 cm); after surgery, the patients were randomly assigned to doxorubicin and cisplatin chemotherapy for seven courses or
whole-abdominal radiotherapy with 30 Gy in 20 fractions and a pelvic boost of 15 Gy. Although the recurrence rate was similar (55%) in the pelvis and abdomen in both groups, 2-year progression-free survival was better with chemotherapy (59% vs 46%) as was the overall survival (70% vs 59%; p_0.01) (27).

However, the largest meta-analysis conducted on the subject of advanced stage endometrial cancer and recurrent endometrial cancer, performed by Barlin et al on 14 studies came to demonstrate that improved survival was positively associated with complete surgical cytoreduction (each 10% increase improved survival by 9.3 months, p = 0.04) and receiving post-operative radiation therapy (each 10% increase improved survival by 11.0 months, p = 0.004); the same meta-analysis concluded that an increasing proportion of patients receiving chemotherapy was negatively associated with survival (each 10% increase decreasing survival by 10.4 months, p = 0.007) (28).

CONCLUSIONS

The most appropriate therapeutic protocol in advanced endometrial cancer is not well established due to the paucity of data and due to the limited number of patients included in the studies published on this topic so far. However, almost all studies come to sustain the benefit of cytoreductive surgery as part of an aggressive surgical approach; similarly to advanced ovarian cancer, in advanced endometrial cancer one of the most important prognostic factors is the absence of macroscopic residual disease at the end of resection. Other therapies such as HIPEC seem to improve the outcomes without increasing the early postoperative morbidity and mortality. Association of adjuvant chemo-irradiation might also play a role but further studies are still needed.

REFERENCES