POSTERIOR PELVIC EXENTERATION FOR ADVANCED, UNRESPONSIVE TO RADIATION THERAPY CERVICAL CANCER – A CASE REPORT

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ABSTRACT

Although cervical cancer is relatively easy to be diagnosed in early stages, there still is an important number of patients who present with locally advanced disease. In these cases the standard protocol consists in neo-adjuvant external radiotherapy and brachytherapy combined with Cisplatin – based chemotherapy followed by surgery. Sometimes even after aggressive neo-adjuvant chemo-irradiation the local invasion is still present and, in rare cases, the tumoral growth continues, the malignancy being unresponsive to neo-adjuvant treatment. In these cases surgery is the only curative option in order to remove a large and in most of the cases aggressive tumor. We present the case of a 62 year old female diagnosed with advanced cervical cancer with tumor progression during chemo-irradiation. We proceeded to a posterior pelvic exenteration with good post-operative results. 1 year after surgery the patient is free of disease.

Key words: advanced cervical cancer, radiotherapy, posterior pelvic exenteration

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INTRODUCTION

Although pelvic exenterations represent aggressive surgical procedures which might associate physical and psychological problems and a worsened body image, they are the only potential solution with curative intent in centro-pelvic tumors originating from both digestive and gynecologic tract. In selected cases preoperative oncologic treatment can offer a tumor down-staging or can diminish the tumoral invasion in adjacent organs providing this way the possibility of less aggressive surgical procedures. In other cases this desiderate cannot be obtained; the tumor proves to be unresponsive to neo-adjuvant treatment and multivisceral resections being needed in order to obtain a good control of the disease. Studies have shown that clinical features of the tumor and both molecular and non-molecular biomarkers can be responsible for the poor tumoral response at irradiation. In these cases surgery remains the only treatment with curative intent. We present the case of a 62 year old patient diagnosed with a large cervical tumor in which neo-adjuvant treatment failed to obtain an acceptable control of the disease. She was addressed to our service after augmentation of the tumor under neo-adjuvant treatment; we performed a total hysterectomy en bloc with bilateral adnexectomy, total colpectomy, abdomino-perineal rectal resection and pelvic lymph node dissection with good results.

CASE REPORT

The 62 year old female was addressed to our service for pelvic pain and vaginal bleeding. The local exam revealed a large cervical tumor invading the left parametrum. The biopsies revealed a squamous keratinized cervical tumor and the CT scan showed a 73/37 cm cervical tumor with slight invasion of the anterior rectal wall and no distant metastases (Picture 1). The patient was addressed to the oncology service where she was submitted to neo-adjuvant treatment: external beam radiation therapy associated with Cisplatin for 4 months but the patient presented a massive vaginal and rectal bleeding associated with subocclusive syndrome; the CT scan revealed the augmentation of the cervical tumor to 8/4 cm. The rectoscopy confirmed the tumoral invasion on the anterior and left side at 3 cm above the anal margins. The cistoscopy showed no modifications. We decided to perform the surgical procedure which at that moment seemed to be the only potential curative solution. Intraoperatively a large cervical tumor invading the anterior rectal wall was found; a total posterior exenteration with pelvic lymph node dissection was performed (Pictures 2-7); the early postoperative evolution was uneventful, the patient being discharged in the 14th postoperative day. The histopathological study of the specimen: total hysterectomy with bilateral adnexectomy, total colpectomy and abdomino-perineal rectal resection (Pictures 8-9) confirmed the biopsies’ results: squamous keratinized well differentiated cervical cancer invading the rectal wall. The patient had a good oncologic outcome, with no signs of recurrence 1 year after surgery.

Figure 1. Initial CT scan showing the cervical tumor invading the anterior rectal wall

Figure 2. The large cervical tumor invading the anterior rectal wall: intraoperative aspect
Figure 3. The right ureter is completely dissected

Figure 4. Perineal phase: total colpectomy en bloc with rectal abdomino-perineal resection

Figure 5. Removing the specimen through the perineal incision

Figure 6. The final aspect of the perineum after resection: posterior exenteration
DISCUSSIONS

After almost 7 decades since Brunchwig reported the first exenterations performed at that moment with palliative intent, pelvic exenteration became the gold standard in treating advanced pelvic malignancies. Once the surgical techniques developed and the postoperative intensive care improved the evolution of these patients significantly improved. In order to make this surgical procedure more efficient in terms of survival attention was focused on the capacity of neoadjuvant treatment to better control the extent of the disease. In this way a large number of patients undergo neoadjuvant chemo-irradiation but unfortunately not all of them present benefits at the end of that treatment. Studies have shown that there are some features of the tumor which might predict a poor response. (4) The tumor’s diameter seems to be strongly correlated with the response to irradiation. A large tumor can reflect a long period between the moment of occurrence and the time of diagnostic but it can also predict the presence of an aggressive biology of the malignant cells which will be associated in time with a poor prognostic and an unfavorable evolution in terms of survival. (4,5) Another important tumoral biomarker which influences the response to irradiation is tumor hypoxia. Hypoxic malignant cells are defined as having pO2<10 mmHg and seem to have a higher capacity of spreading (both locally and distant – through the lymphatic drainage) and also a high resistance to radiation therapy. (6,7,8)

Unfortunately, some of these cases might also have a poor prognosis even after surgery due to the malignant cells’ high capacity of dissemination. (7)

An indirect sign which might predict tumoral hypoxia is the decreased number of red blood cells. The presence of anemia seems to be associated with a poor prognosis because it contributes to tumoral hypoxia (9,10,11). In their study Bush et al demonstrated that patients with cervical cancer and hemoglobin levels higher than 12 g/dL had a better evolution when compared to those with chronic anemia. (11) However other studies failed to demonstrate the utility of erythropoietin to correct anemia preoperatively in order to correct tumoral hypoxia. (12) Further studies are still needed to establish
which are the best options to correct this parameter.

Other biological markers which might be correlated with tumor response to irradiation are thrombocytosis and leukocytosis. Increased number of white blood cells (more than 10,000/μL) is observed to be associated with poor response to radiotherapy; this fact can also signal a tumoral abscess which results in a delayed radiation treatment. Association between thrombocytosis (> 400,000 / μL), leukocytosis (>10,000/μL) and unresponsive tumor to irradiation can be associated with the presence of a high level of tumor derived growth factor synthesized by the aggressive malignant cells. These factors proved to have predictive value in identifying the patients with worse prognostic and high risks of recurrence. (13,14,15)

In our case the patient presented chronic anemia which probably produced secondary tumoral hypoxia; this fact might explain the tumor resistance at radiation therapy. Although we have already mentioned tumoral hypoxia is usually associated with aggressive cells with high capacity of migration into the lymphatic flow and secondary poor outcome even after radical surgery (7) we decided to perform the surgical procedure in order to remove the hemorrhagic tumor invading the rectal wall, producing subocclusive syndrome. The indications for pelvic exenteration in case of large cervical tumors invading the rectal wall have been widely researched in clinical studies. (16,17, 18,19) When it comes about overall survival after exenteration, the most important factors seem to be negative margins and complete surgical resection. (20,21,22) Among patients with negative margins it would be interesting to find out which is the smallest distance between the negative margins and the tumor’s limit in order to establish how far should we go with the resection. (21)

CONCLUSIONS

Pelvic exenteration remains the only curative solution in locally invasive cervical cancer. Although nowadays the standard protocol consists in neoadjuvant chemo-irradiation, there are cases in which the tumor does not respond to this therapy, the most important factors associated with non responsive to irradiation tumors being anemia and secondary hypoxia and large dimensions of the tumor. Even in these cases, in which usually the tumor is a very aggressive one surgical treatment may be tried with curative intent.

REFERENCES