

Vascular resections as part of debulking surgery for isolated adenopathies after surgically treated endometrial cancer

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ABSTRACT

Endometrial cancer represents one of the most commonly encountered gynecological malignancies affecting women worldwide which is usually treated by surgery followed by adjuvant chemo-radiotherapy. Even if curative intent treatment is performed, in certain cases recurrent disease might develop; in such cases, depending to the extent of the disease different therapeutic strategies might be taken in consideration. As expected, cases diagnosed with solitary, isolated recurrences are rather candidates for surgery, improved outcomes being expected in such patients. When it comes to cases diagnosed with isolated adenopathic masses, complex surgical procedures including vascular resections have been reported in order to achieve negative resection margins. This is a literature review of the most significant papers reporting complex vascular resections for isolated adenopathic masses with endometrial origin.

Keywords: endometrial cancer, adenopathy, vascular resections

INTRODUCTION

Endometrial cancer represents a commonly encountered gynecologic malignancy which is usually diagnosed in early stages of the disease due to the fact that it frequently associates postmenopausal vaginal bleeding, a sign which is easily observed by the patient [1]. Therefore, a significant number of cases are diagnosed in early stages and are therefore candidates for surgery with curative intent consisting of total hysterectomy with bilateral adnexectomy and pelvic lymph node dissection. In such cases routine aorto-caval lymph node dissection is controversial; therefore, certain authors recommend no gesture at this level, other authors recommend sampling

at this level while some others recommend completing the lymph node dissection at this level [2-5]. However, due to the relatively low number of positive lymph nodes retrieved from this levels, routine lymph node dissection at this level is no longer part of the standard therapeutic approach [5].

AORTOCAVAL LYMPH NODE INVOLVEMENT IN ENDOMETRIAL CANCER

Anatomical studies came to demonstrate that the first groups of lymph nodes which are involved in cases diagnosed with early stage endometrial cancer are represented by obturator, internal and external

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iliac artery. Furthermore tumoral cells might surpass these lymph nodes and involve the para-aortic and aorto-caval lymph nodes. Meanwhile, direct contamination of these nodes has been rarely described; therefore in the study conducted by Jobo et al. on 342 patients with early stage endometrial cancer, the authors demonstrated the presence of pelvic lymph node metastases in 46 cases, the most commonly involved groups being located at the level of the internal iliac artery and obturator fossa, 11 of them presenting furthermore positive para-aortic lymph nodes; meanwhile, only six patients presented isolated positive para-aortic lymph nodes; therefore the authors concluded that endometrial cancer leads to the apparition of isolated positive para-aortic lymph nodes in an extremely low number of cases [6].

DEBULKING SURGERY FOR ISOLATED ADENOPATHIES WITH VENOUS WALL INVASION

Cases diagnosed with isolated recurrences after surgically treated endometrial cancer are most often suitable for debulking in order to achieve negative resection margins. However, in certain cases extended local resections might be needed in order to fulfill the aim of complete resections [7-9]. While in cases diagnosed with pelvic recurrences for example multiple pelvic resections are needed, an important number of cases being submitted to different types of exenterations, cases diagnosed with recurrent, isolated adenopathic masses at the level of the aorto-caval region might impose performing complex surgical procedures such as cava vein resections.

Depending on the extent of the cava vein invasion, wedge resection or circumferential resection might be proposed; in cases in which wedge resection is needed, per primam suture is feasible if less

than 40% of the circumference of the cava vein is affected. In cases in which the extent of the involvement is 40% or more, reconstruction using different types of grafts are needed including autologous or synthetic grafts [10,11]. In order to minimize the risks of intraoperative complications and blood loss, mobilization of the hemilateral kidney might be performed [12].

Another option for reconstruction after inferior cava vein resection is represented by bovine pericardium. The method has been initially proposed in patients with renal cell carcinoma or upper gastrointestinal cancer [13]. Recently, the method has been also successfully implemented in gynecological cancers; the first such report originates from Xie et al.; the authors reported the presence of a 8 cm partially necrotic nodule attached to the anterior wall of the inferior cava vein caudal to the right renal vein. The adenopathy was entirely removed en bloc with the invaded segment of the cava vein while the continuity was established by placing a bovine pericardium graft with good functional results [14].

CONCLUSIONS

Once the vascular techniques significantly improved, vascular resections have been successfully associated as part of debulking surgery for locally invasive recurrences. Among these procedures, cava vein resection has gained particular popularity; depending on the extent of the invaded segment, wedge resections or circumferential resections have been proposed; meanwhile, depending on the extent of the resected segment, per primam suture, prosthesis placement, autologous graft or even bovine pericardium has been proposed with promising results especially if negative resection margins are achieved.

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REFERENCES

1. Siegel RL, Miller KD, Jemal A. Cancer statistics, 2018. *CA Cancer J Clin.* 2018; 68:7–30.
2. Singh N, Hirschowitz L, Zaino R et al. Pathologic prognostic factors in endometrial carcinoma (other than tumor type and grade). *Int J Gynecol Pathol.* 2019;38(1):S93–113.
3. Abu-Rustum NR. Uterine neoplasms. In: NCCN Clinical Practice Guidelines in Oncology (NCCN Guidelines®) Version 1; 2020. March 06, 2020
4. Kitchener H, Swart AMC, Qian Q et al. Efficacy of systematic pelvic lymphadenectomy in endometrial cancer (MRC ASTEC trial): a randomised study. *Lancet.* 2009; 373:125–36.
5. Colombo N, Creutzberg C, Amant F et al. ESMO-ESGO-ESTRO consensus conference on endometrial cancer: diagnosis, treatment and follow-up. *Ann Oncol.* 2016; 27(1):16–41.
6. Jobo T, Sato R, Arai T et al. Lymph node pathway in the spread of endometrial carcinoma. *Eur J Gynaecol Oncol.* 2005; 26(2):167-9.
7. Sears J, Greven KM, Hoen HM, Randall ME. Prognostic factors and treatment outcome for patients with locally recurrent endometrial cancer. *Cancer.* 1994; 74(4):1303.
8. Scarabelli C, Campagnutta E, Giorda G et al. Maximal cytoreductive surgery as a reasonable therapeutic alternative for recurrent endometrial carcinoma. *Gynecol Oncol.* 1998; 70(1):90.
9. Bristow R, Santillan A, Zahurak ML et al. Salvage cytoreductive surgery for recurrent endometrial cancer. *Gynecol Oncol.* 2006; 103:281.
10. Kato K, Matsuura M, Takeshima N. Secondary debulking surgery for isolated paraaortic nodal recurrence in endometrial cancer requiring partial resection of the inferior vena cava. *Gynecol Oncol.* 2015; 139: 580–581.
11. Kato K, Okamoto S, Ota E, Takeshima N. Secondary debulking surgery for para-aortic nodal recurrence in endometrial cancer requiring circumferential resection of the inferior vena cava. *Gynecol Oncol.* 2018; 149:221-222.
12. Kato K, Omatsu K, Takeshima N. Secondary debulking surgery in ovarian cancer patients with isolated nodal recurrence located in the region above and behind the renal vein. *Gynecol Oncol.* 2013; 130:226–228.
13. Morris PD, Furtado R., Pulitano C et al. Inferior Vena Cava Resection and Reconstruction with Bovine Pericardium for Renal Cell Carcinoma: Complications and Outcomes. *Urology.* 2019; 134:143–147.
14. Xie H, Pather S, Yeo D et al. Precaval recurrent endometrial cancer treated with en-bloc resection of the inferior vena cava and reconstruction using bovine pericardium. A case report and review of the literature. *Gynecol Oncol Rep.* 2020; 34:100679.