Cardiophrenic and costophrenic lymph node resection via subxiphoid approach only

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Abstract

When enlarged cardiophrenic lymph nodes (CPLN) are resected the impact on survival is still uncertain, but resection contributes to accurate staging and complete gross resection in advanced ovarian cancer. CPLN resection can be performed via video-assisted thoracic surgery or transabdominally through the subxiphoid or transdiaphragmatic routes. The subxiphoid approach is used to reach the prepericardiac nodes located in the anterior mediastinum. The transdiaphragmatic route is used to remove the costophrenic and supradiaphragmatic paracaval lymph nodes located in the middle and posterior mediastinum, respectively. However, the transdiaphragmatic approach necessitates diaphragm opening and, in most cases, liver mobilization. Costophrenic nodes can be resected through the subxiphoid route in appropriate patients without opening the diaphragm. Thus, the subxiphoid approach may be preferred to remove the costophrenic lymph nodes, in cases in whom diaphragm resection is not anticipated, and especially when the resection procedure is planned to include the prepericardiac nodes. In this video article, we present the method of resecting both prepericardiac and costophrenic lymph nodes using only the subxiphoid approach in a case of advanced ovarian cancer. The subxiphoid virtual space between the pericardium and diaphragm was developed. The observed and palpated CPLNs were dissected and excised from the prepericardiac and right latero-cardiac spaces. Thereafter, diaphragm peritoneum beneath the right costophrenic nodes was dissected. After identifying any enlarged costophrenic nodes by palpation, the sternal and costal diaphragmatic attachments were incised and the right latero-cardiac space was extended. When the single enlarged node was reached, it was grasped and pulled with curved-ring forceps and ultimately resected. (J Turk Ger Gynecol Assoc 2022; 23: 124-5)

Keywords: Cardiophrenic lymph node, costophrenic lymph node, subxiphoid approach, advanced ovarian cancer

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Introduction

The main goal of surgery in advanced ovarian cancer is finalizing the operation with no gross residual disease. Even though the impact of resection of enlarged cardiophrenic lymph nodes (CPLN) on survival is still a matter for debate, it contributes to accurate staging and complete gross resection in advanced ovarian cancer (1). CPLN resection can be performed via video-assisted thoracic surgery (VATS) or transabdominally, through the subxiphoid or transdiaphragmatic routes. While using VATS will usually need the involvement of a thoracic surgeon, the subxiphoid and transdiaphragmatic approaches can be successfully performed by gynecological oncologists in many centers (2). The subxiphoid approach is normally used to reach the prepericardiac nodes, located in the anterior mediastinum. The transdiaphragmatic route is used to remove the costophrenic and supradiaphragmatic paracaval lymph nodes, located in the middle and posterior mediastinum, respectively (3). However, the transdiaphragmatic approach necessitates diaphragm opening and, in most cases, liver mobilization. Costophrenic nodes can be resected through the subxiphoid route in appropriate patients without opening the

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diaphragm (4). Thus, the subxiphoid approach may be preferred to remove the costophrenic lymph nodes, in cases in whom diaphragm resection is not anticipated, and especially when the resection procedure is planned to include the prepericardiac nodes. In this video article, we present the method of resecting both prepericardiac and costophrenic lymph nodes through the subxiphoid approach during interval cytoreduction surgery in a case of advanced ovarian cancer. The patient was 79-years old. After receiving three cycles of platinum-based chemotherapy, she was well enough for surgery. However, tomography demonstrated persisting enlarged CPLNs (Figure 1). Therefore, CPLN resection was planned during the interval cytoreduction. The subxiphoid virtual space between the pericardium and diaphragm was developed. The observed and palpated CPLNs were dissected and excised with their fatty pads from the prepericardiac and right latero-cardiac spaces (Figure 2). Thereafter, the automatic retractor blade was moved laterally, and diaphragm peritoneum beneath the right costophrenic nodes was dissected to achieve better exposure. After investigating any enlarged costophrenic nodes by palpation, which identified a single enlarged node, the sternal and costal diaphragmatic attachments were incised and the right latero-cardiac space was extended. When the node was reached, it was grasped and pulled with curved-ring forceps and resected using an ultrasonic device (Figure 3). Finally, the incision was closed with non-absorbable, interrupted sutures (Video 1). Pathological evaluation of seven lymph nodes identified two that were metastatic.

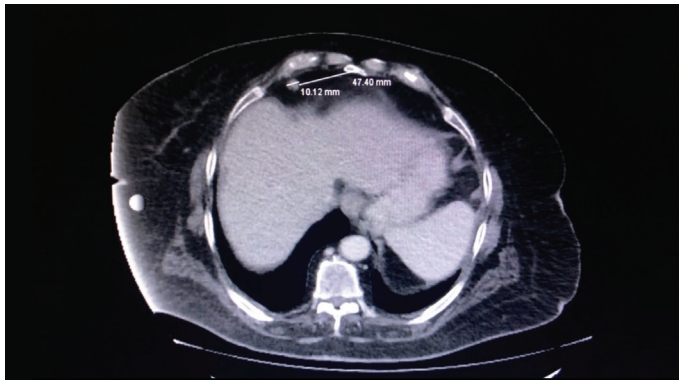

Figure 1. Enlarged right costophrenic lymph node approximately 5 cm from the xiphoid and sternum on computed tomography

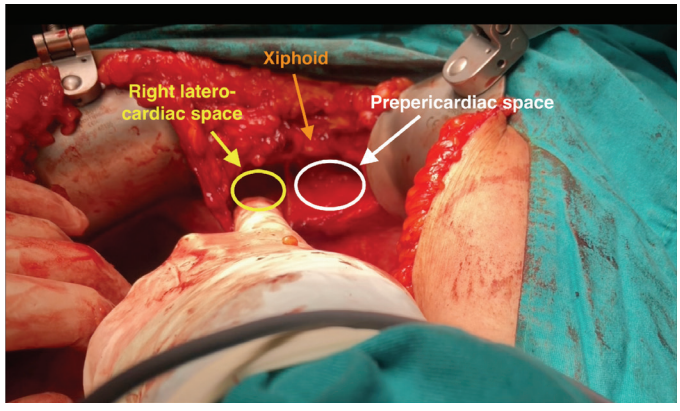

Figure 2. Prepericardiac and right latero-cardiac spaces

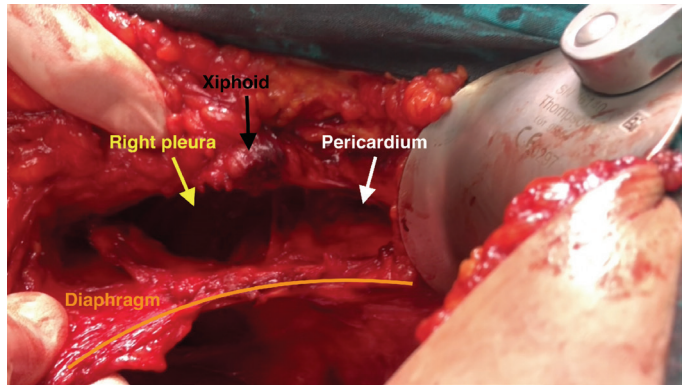

Figure 3. View of the operation field after completing lymph node dissection

Video 1. Cardiophrenic and costophrenic lymph node resection via subxiphoid approach only

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