

## Over Karsinosarkomunun, sağ hemidiafragma ve akciğere invaze karaciğer metastazının transtorasik transdiafragmatik rezeksiyonu

### Transthoracic Transdiaphragmatic Resection for Liver Metastasis of Ovarian Carcinosarcoma with Invasion of Right Hemidiaphragm and Lung.

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#### ÖZET

Kolorektal ve nöroendokrin tümörlerde hepatik metastazektominin klinik faydası çok iyi tanımlanmış olmasına karşın, diğer tümörlerinde bu uygulamanın yeri çok net değildir. Bu yazıda over karsinosarkomuna bağlı sağ hemidiafragma ve sağ akciğer alt lobunu invaze etmiş karaciğer metastazlı bir olgu sunmaktayız. Bu olguya abdominal girişim uygulanmadan transtorasik olarak yaklaşılmış ve sağ hemidiafragma, akciğer ve karaciğer rezeksiyonu uygulanmıştır. Hasta bu cerrahi girişim sonrası ortalama 2,5 yıl (27 ay) yaşamıştır. Primer jinekolojik malignitelere bağlı uzak organ metastazlarında da, düşük morbidite ve mortalite oranları ve sağ kalımı uzaması nedeniyle senkron hepatik ve pulmoner metastazektomi uygulanabilir. Bu alanda kısıtlı tecrübeler olmasına rağmen özellikle subdiafragmatik karaciğer ile sağ akciğere olan metastazlarda, transtorasik senkron pulmoner ve hepatik metastazektomi akılda tutulmalıdır.

**Anahtar Kelimeler:** Over karsinosarkomu, senkron, karaciğer, akciğer, metastazektomi

#### ABSTRACT

Although hepatic metastasectomy is well established for colorectal and neuroendocrine tumors, the treatment of hepatic metastases from other sites is not well defined. We present a case of ovarian carcinosarcoma with liver metastasis that invaded the right hemidiaphragm and lower lobe of right lung. En bloc transthoracic lung, right hemidiaphragm and liver resection was performed without using an abdominal incision. The patient survived nearly 2.5 years (27 months) after this surgery. Synchronous hepatic and pulmonary metastasectomies can be recommended for the metastatic tumors from the primary gynecologic malignancies. This procedure can be done with low morbidity, mortality rates and prolongs survival. In spite of the limited experience, the choice of transthoracic synchronous pulmonary and hepatic metastasectomy should be remembered for the patients with subdiaphragmatic liver and right sided lung metastasis.

**Key words:** Ovarian carcinosarcoma, synchronous, liver, lung, metastasectomy

#### Introduction

Carcinosarcomas are rare and highly aggressive epithelial malignancies that contain both malignant sarcomatous and carcinomatous elements. The carcinosarcoma, or Mixed Mullerian Malign Tumors, represent 1% of malignant ovarian neoplasms. Up to 90% ovarian carcinosarcomas will have disease that has spread beyond the ovary. Prognosis for localized stage disease is poor with a high risk of recurrences with an overall median survival of less than 2 years. Carcinosarcomas are known to be metaplastic

carcinomas and should be treated as endometrial or ovarian high-risk carcinomas (1).

Liver and lung are the most common sites of distant metastases from primary colorectal carcinoma (2,3). The resection of metachronous, liver and lung metastases prolongs survival despite the aggressive nature of these tumors (4). Although hepatic metastasectomy is well established for colorectal and neuroendocrine tumors, the treatment of hepatic metastases from other primary sites is not well defined (5). In the current literature, some authors believe that



hepatic metastasectomy for non-colorectal and non-neuroendocrine tumors is safe and feasible and prolongs survival (5). There is also some data to suggest a longer survival after lung metastasectomy for gynecologic malignancies (6). We present a case of ovarian carcinosarcoma with liver metastasis that invaded the right hemidiaphragm and lower lobe of right lung. En bloc transthoracic liver metastasectomy with lung and diaphragm resection without abdominal incision was performed. The experience with an exclusive transthoracic, transdiaphragmatic approach is limited. In this paper, this rare case was discussed in the light of current literature.

## Case Report

A 50 year-old post-menopausal female patient was admitted to our hospital with the diagnosis of ovarian carcinosarcoma. The first diagnosis was made in March 2008 as Figo Stage IIIC ovarian carcinosarcoma and she had already been operated with debulking surgery. The patient was given cisplatin and paclitaxel combination chemotherapy. The liver metastasis was first detected in November 2009 and second look surgery with splenectomy, omentectomy and pelvic-paraaortic lymphadenectomy was performed. Liver metastasectomy was not performed at that time due to the extrahepatic disease and close relation of metastasis with right hepatic vein. Abdominal computed tomography and ultrasonography revealed a 3x5 cm metastatic liver nodule in segment seven. The patient was given the combination of carboplatin and paclitaxel again. The liver metastasis progressed under systemic treatment and three months after systemic chemotherapy, the liver metastasis was seen to progress and invade the diaphragm. The nodule enlarged to 5x7 cm and invaded the lower lobe of the right lung through the diaphragm (Fig 1).

PET CT reported that there was no other metastatic site. The metastasectomy was suggested by our institutional tumor board. As the metastases located in the dome of the right liver, invaded the diaphragm and lower lobe of right lung and history of previous multiple abdominal surgeries, the transthoracic approach thought to be much easier and safer for the patient.



**Figure 1.** The liver metastasis was seen to progress and invade the diaphragm. The nodule enlarged to 5x7 cm and invaded the lower lobe of the right lung through the diaphragm

A right posterolateral thoracotomy was made through the 5th intercostal space. The metastatic mass invading the diaphragm in close relation with lower lobe of the right lung was observed. No other metastatic lesion was detected with intraoperative ultrasonography. The wedge resection of lower lobe of the right lung was performed with the use of stapling instrument. The circular resection of the right hemidiaphragm with 2 cm tumor free margins around the tumor was performed by using electro-surgery device (HS Generator 300 (Ultracision®) manufactured by Ethicon Endo Surgery, USA). The tumor located in segment seven was reached. The transection of the liver parenchyma was performed with the use of traditional Kelly clamp-crushing technique at 2 cm tumor free margins. At the end, R0 resection of the specimen including lung, diaphragm and liver was completed successfully. No drain was needed under the diaphragm after meticulous bleeding control. As the defect in the diaphragm was greater than 10 cm, a dual polytetrafluoroethylene (PTFE) mesh was used to reconstruct the defect in diaphragm. A chest tube was inserted into the pleural space. Intraoperative blood loss was minimal and no blood transfusion was needed. Operating time was less than 4 hours. The chest tube was removed on the fifth postoperative day. On the seventh postoperative day patient was discharged. The pathological examination of the resected specimen revealed that it was the metastasis of primary ovarian tumor. As the disease



progressed under cisplatin and paclitaxel combination regimen, the patient was given carboplatin and paclitaxel combination. The patient survived nearly 2.5 years (27 months) after this surgery. No other liver metastasis was developed during follow-up period. But, a paracardiac metastasis with chest wall invasion was developed and the patient was died from peritoneal recurrence, massive ascites, bilateral hydrothorax and multiorgan failure.

## Discussion

Surgical resection of colorectal liver metastases is an established form of treatment (4,5). Current literature also supports the hepatic metastasectomies for the primary tumors other than colorectal and neuroendocrine origin like gynecological tumors (5). Anatomic versus non-anatomic metastasectomies are still a matter of debate for colorectal liver metastases. The authors who support anatomic liver resections claim that non-anatomic resections have a higher incidence of positive margins, anatomic resections remove the hepatic functional unit as a whole and may offer a survival and recurrence advantage (7). However, at present, it appears that non-anatomic resections are as safe in oncological terms as anatomic resections (7). Many authors believe that the type of liver resection has no impact on the outcome of patients with colorectal liver metastases; wedge resections with clear margins are not inferior to anatomical resections in terms of tumor clearance, pattern of relaps or survival for colorectal carcinomas (8).

The long term survival of a patient with ovarian carcinosarcoma was attributed to optimal cytoreduction during the primary operation, complete resection of solitary recurrent tumors and sensitivity to chemotherapy (9). The mainstay of treatment remains cytoreductive surgical effort for metastatic disease followed by platinum-based chemotherapy (10). Combined liver and lung metastasis from ovarian carcinosarcoma treated with surgery has not been published in English medical literature. Only three solitary primary ovarian carcinosarcomas metastatic to the spleen have been reported (11). An improved survival was observed in patients treated with optimal cytoreductive surgery with residual tumors less than 2 cm in size

(12). The prognosis of ovarian carcinosarcoma is associated with the residual disease after surgery. The patients with disease recurrence may obtain remission and survival through a secondary surgery and/or chemotherapy (13). The mainstay of treatment for ovarian carcinosarcomas is cytoreductive surgery followed by platinum-based chemotherapy, usually as carboplatin-paclitaxel (14). Paclitaxel and carboplatin chemotherapy was reported to be an effective regimen for ovarian carcinosarcoma, but the duration of response is relatively short (15). Complete response with pegylated liposomal doxorubicin in metastatic ovarian carcinosarcoma was also reported in literature (16).

In the searched literature, we could not find very much data on the issue of liver metastasectomies for gynecological primary tumors. We believe in that, non-anatomic liver resections has the advantage of preserving much more remnant liver tissue which is important for chemotherapy and also for re-metastasectomies in case of recurrences. For our case reported, non-anatomic resection gave us the chance of quick en-block resection with minimal blood loss. The invasion of lung through diaphragm by a liver metastasis of ovarian carcinosarcoma has not been reported in literature before.

Like liver metastasectomies, lung metastasectomies are also recommended for the gynecologic malignancies (6,17). Lung metastasectomies are usually recommended after liver metastasectomies in a sequential manner for colorectal carcinomas. Marudanayagam et al (4) reported that the median interval between liver and lung metastasectomy was 25 months (range 2-88 months). There is also an alternative method for the lung and liver metastases located in lower lobe of the right lung and subdiaphragmatic liver segments. This transthoracic approach for subdiaphragmatic liver metastases was also described (3). But for our case; instead of a right anterolateral thoracotomy through 7th or 8th intercostal space we used a classical right posterolateral thoracotomy. Besides, the defect in diaphragm was reconstructed with a PTFE dual mesh and also a non-anatomic liver resection was preferred. Transthoracic approach also simplified the liver metastasectomy. This type of surgery would be more difficult through an abdominal incision because of the localisation



of metastasis and the possible adhesions. There was no complication in the postoperative period and patient survived more than 2 years (27 months) after this procedure.

### Conclusion

Liver and lung metastasectomies can be recommended for the tumors with gynecologic primary. These procedures can be done with low morbidity, mortality rates and they may prolonge survival as in our case reported. The choice of transthoracic synchronous lung and liver metastasectomy should be remembered for the patients with subdiaphragmatic liver and right sided lung metastasis.

### Conflict of interest statement

None declared.

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