CASE REPORT

Case report and literature review of trophoblastic pancreatic carcinosarcoma presenting with gastric hemorrhage

Emir Mehmet Yünlüel,[1] İklil Eryılmaz,[1] Fırat Yetiş,[1] Elife Kımıloğlu,[2] Nuray Doğan,[3] Ahmet Muzaffer Er[1]

[1]Surgery Clinic, University of Health Sciences, Gaziosmanpaşa Training and Research Hospital, İstanbul-*Türkiye*
[2]Pathology Clinic, University of Health Sciences, Gaziosmanpaşa Training and Research Hospital, İstanbul-*Türkiye*
[3]Pathology Clinic, University of Health Sciences, Ankara Training and Research Hospital, Ankara-*Türkiye*

ABSTRACT

Pancreatic carcinosarcoma is a rare and aggressive malignant tumor of the pancreas. Although highly invasive, it is often detected with local or distant metastases at the time of diagnosis. This article presents the surgical procedure performed for a case of pancreatic trophoblastic carcinosarcoma with local invasion in a patient who was admitted to the emergency department with bloody vomiting and underwent surgery with a preliminary diagnosis of gastric hemorrhage. The pathology results and the rapidly progressive nature of the disease are also discussed. Additionally, a literature review on this rare condition was conducted, and the findings are presented.

Keywords: Gastrointestinal system; hemorrhage; pancreatic carcinosarcoma.

INTRODUCTION

In this article, we present a case of pancreatic trophoblastic carcinosarcoma in a patient who was admitted to the emergency department with hematemesis. The patient underwent surgery with a preliminary diagnosis of gastric hemorrhage. We describe the surgical procedure, pathological findings, and the aggressive progression of the tumor, which exhibited local invasion. Additionally, a literature review on this rare condition is included, and the findings are discussed.

CASE REPORT

Written consent was obtained after explaining to the patient that this disease is rare and that documenting the case would contribute to the medical literature.

The patient was admitted to the hospital two years ago with complaints of painful swelling in the right shoulder and was diagnosed with a clavicular tumor. A biopsy was performed, revealing undifferentiated carcinoma metastasis. The tumor was excised, and adjuvant treatment was planned. Surgical pathology results also confirmed undifferentiated carcinoma metastasis. Immunohistochemical analysis revealed positive staining for cytokeratin pan (CKPan), beta-human chorionic gonadotropin (bHCG), and vimentin, while CK20, CK7, carcinoembryonic antigen (CEA), placental alkaline phosphatase (PLAP), thyroid transcription factor-1 (TTF1), napsin A, GATA3, calretinin, CD30, HMB45, and p40 were negative. The Ki-67 was reported as 47%. The patient voluntarily discontinued chemotherapy after completing 16 courses of radiotherapy (RT) and four cycles of docetaxel + cisplatin during oncological treatment.

Cite this article as: Yünlüel EM, Eryılmaz İ, Yetiş F, Kımıloğlu E, Doğan N, Er AM. Case report and literature review of trophoblastic pancreatic carcinosarcoma presenting with gastric hemorrhage. Ulus Travma Acil Cerrahi Derg 2025;31:405-410.

Address for correspondence: Emir Mehmet Yünlüel
Surgery Clinic, University of Health Sciences, Gaziosmanpaşa Training and Research Hospital, İstanbul, Türkiye
E-mail: emirmehmetyunluel@gmail.com

Ulus Travma Acil Cerrahi Derg 2025;31(4):405-410 DOI: 10.14744/tjtes.2025.72884
Submitted: 26.05.2023 Revised: 16.12.2024 Accepted: 08.01.2025 Published: 28.03.2025
OPEN ACCESS This is an open access article under the CC BY-NC license (http://creativecommons.org/licenses/by-nc/4.0/).

In November 2021, a follow-up positron emission tomography-computed tomography (PET-CT) scan of the upper abdomen revealed a newly developed mass lesion in the left adrenal gland, measuring 63 mm in diameter, with a soft tissue density and an SUVmax of 15.1.

By July 2022, a follow-up PET-CT showed significant progression of the mass, which now measured approximately 61 mm in the anteroposterior dimension and 55 mm in the transaxial dimension. The lesion exhibited a circumferential rim with a hypometabolic, necrotic center. The mass appeared heterogeneous with intense fluorodeoxyglucose (FDG) uptake (SUVmax: 13.0), indicating further progression compared to the previous PET-CT.

The patient, who had been asymptomatic for one year, was admitted to our hospital with dyspeptic symptoms that had developed over the past two months. Endoscopy revealed an edematous, hyperemic zone with superficial ulcers in the gastric fundus, prompting biopsy collection. Medical treatment was initiated, and pathology follow-up was recommended. One month ago, the patient was readmitted to our hospital's emergency department with hematemesis. On examination, he was hypotensive and tachycardic. In the endoscopy performed by our hospital's gastroenterologists, widespread coagulum was observed in the stomach, along with a necrotic ulcer exhibiting malignant characteristics and active hemorrhage in the gastric fundus.

A thoracic and abdominal computed tomography was performed in the emergency department. The scan revealed a nodular soft tissue mass with irregular, lobulated contours located in the upper abdomen at the suprarenal level, extending from the left paraaortic area toward the preaortic region. The mass measured approximately 62 x 43 mm in axial dimensions, with a central hypodense necrotic core and mild peripheral contrast enhancement. The irregular, lobulated contours were adjacent to the gastric corpus and surrounding fat planes, and the mass was initially considered to represent necrotic lymphadenopathy. Additionally, the mass was closely associated with the left adrenal gland, with poorly defined borders, raising suspicion of an adrenal origin. Several lymphadenopathies (LAPs) with a short axis of approximately 12 mm were also observed in the left paraaortic region adjacent to the mass (Figs. 1 and 2).

Angiographic embolization was initially planned for the patient. Upon arrival at the emergency department, the patient's hemoglobin level was 10.9 g/dL, and the hematocrit was 33.9%. After the endoscopy, follow-up tests showed a hemoglobin level of 8.4 g/dL and a hematocrit of 25.0%. Given that the hemorrhage was mass-related and the patient's hemodynamic condition was deteriorating, surgical intervention was deemed necessary. Although no red blood cells were transfused before surgery, perioperative transfusions included three units of red blood cells and three units of fresh frozen plasma.

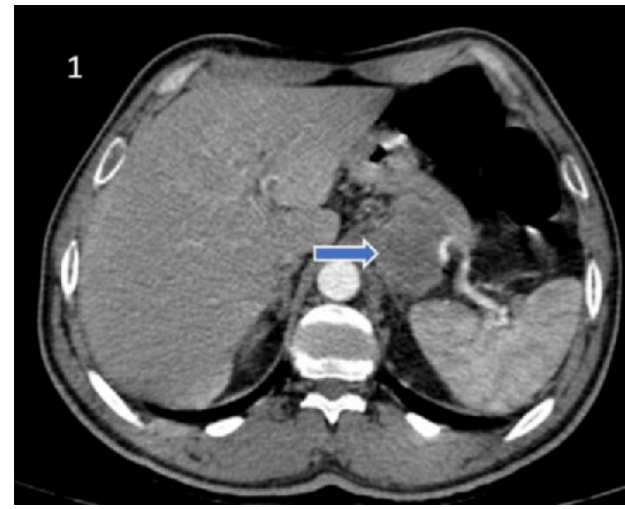


Figure 1. Axial image of the necrotizing mass.



Figure 2. Coronal image of the necrotizing mass.

During surgery, a mass lesion involving the distal pancreas and splenic hilum, with invasion of the gastric fundus, was identified. The patient underwent subtotal pancreatectomy, splenectomy, and gastric wedge resection (Fig. 3).

Gastric endoscopic pathology results favored a diagnosis of undifferentiated cohesive carcinoma. Immunohistochemical analysis showed focal positivity for periodic acid-Schiff (PAS), diffuse positivity for vimentin, and weak positivity for pancytokeratin, while CD45 was negative.

Resection pathology revealed a necrotic mass in the pancreas, diagnosed as carcinosarcoma with trophoblastic differentiation. The mass, measuring 2.5 x 2 x 1.2 cm in the distal pancreas, exhibited diffuse necrosis and perineural invasion. Tumor

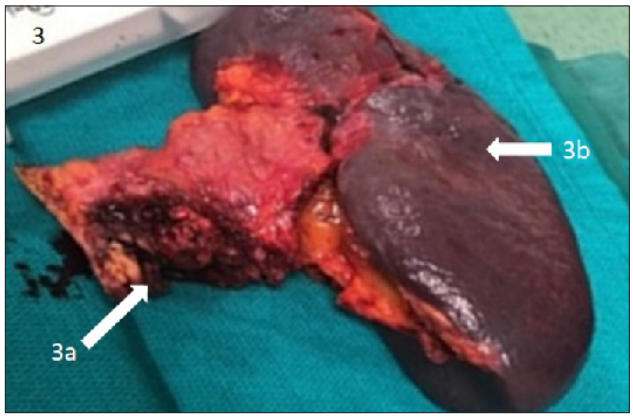


Figure 3. Resection material. **(a)** Necrotic tissue in the distal pancreas **(b)** Spleen.

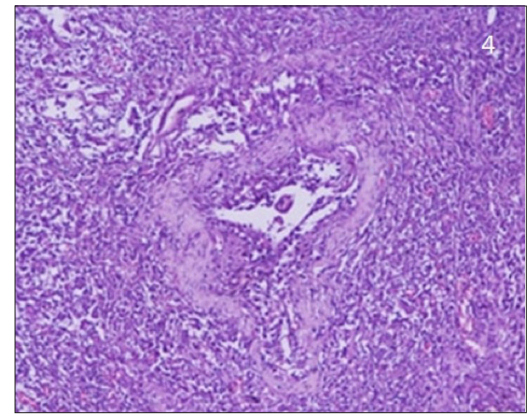


Figure 4. Hematoxylin-eosin stain, 10x magnification, showing tumor cells in vascular structures.

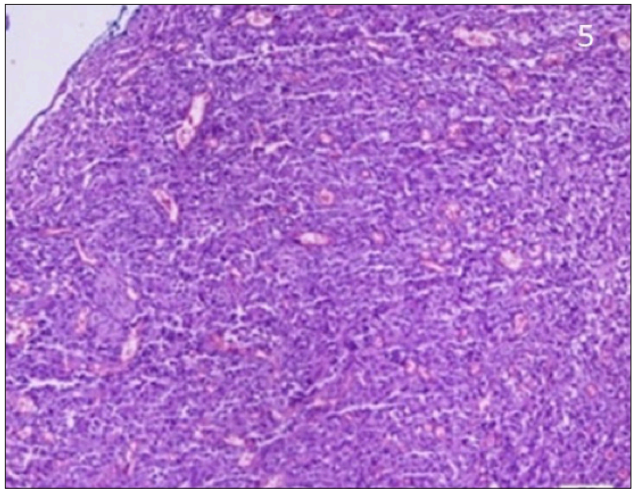


Figure 5. Nerve invasion observed with hematoxylin-eosin stain, 10x magnification.

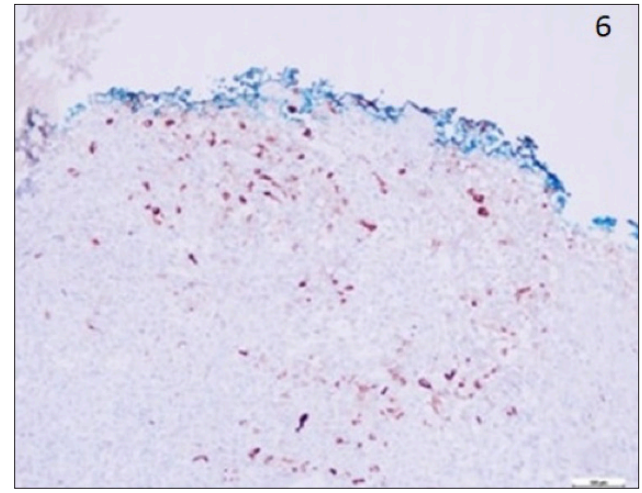


Figure 6. Beta-human chorionic gonadotropin (β-hCG) stain demonstrating trophoblastic differentiation.



Figure 7. Development of metastatic nodules.

involvement was also noted at the pancreatic surgical margin. Pathology analysis of the gastric wedge resection showed a vascular tumor thrombus at the surgical margins, along with trophoblastic carcinosarcoma and perineural invasion. Immunohistochemical staining was positive for beta-human chorionic gonadotropin (β-hCG), vimentin, and pan-cytokeratin, while CD34, carbohydrate antigen 19-9 (CA19-9), CD117, cytokeratin, discovered on GIST-1 (DOG1), placental alkaline phosphatase (PLAP), synaptophysin, chromogranin, CERB2, S100, and HMB45 were negative. Microscopic images of the tumor are provided (Figs. 4, 5, and 6).

As the patient's clinical condition evolved, a gradual decrease in pancreatic fistula drainage, the development of fever, and an increase in white blood cell count (WBC) were observed. On the 30th postoperative day, an abdominal computed tomography (CT) scan was performed. The CT report revealed new hypodense lesions in the liver, consistent with metastasis, which had not been present previously. Additionally, a newly developed necrotic mass was observed between the right adrenal gland and the liver (Figs. 7 and 8).

Based on these results, the patient was presented to the malignancy board, and systemic chemotherapy was recommended following discharge.

However, due to the development of confusion and a worsening general condition, the patient was transferred to the intensive care unit. Despite receiving care in both the intensive care and palliative care units, the patient's vital signs continued to deteriorate, and the patient passed away on the 46th postoperative day.

DISCUSSION

Carcinosarcoma, first described by Virchow in the 19th century, originates from both epithelial and mesenchymal structures.[1] It is classified as one of the four variants of the rare undifferentiated carcinoma of the pancreas.[2] This malignancy

Table 1. Diagnostic imaging modalities, surgical techniques, metastasis status, and tissue invasion findings at the time of diagnosis

Author	Year	Epi	Radiological Diagnosis	Surgery	Surgery Method	Invasion or Metastasis at Diagnosis	Survey
Yunluel (Present Case)	2022	40 M	CT	Y	Subtotal pancreatectomy+ splenectomy+gastric wedge resection	Gastric wall and left surrenal gland	<2 months
Cheng[7]	2021	73 F	CT+MR+PET/CT	Y	Pancreato-caudal resection +splenectomy	N	>2 Months
Khan[4]	2021	68 M	CT+EUS	Y	Pylorus sparing pancreaticoduedonectomy	N	(-)
Lalonde[3]	2021	52 F	CT+MR+EUS	Y	Pancreaticoduedonectomy	N	>15 months
Quinn[27]	2020	42 F	CT+EUS	Y	Subtotal pancreatectomy+ splenectomy+left adrenelectomy + left hemycollectomy	Spleen and left colon	16 months
Liu[8]	2019	66 M	CT+MR	Y	Cholecystectomy+roux/y anastomosis resection+ pancreatic head mass resection	(-)	>12 months
Zhou[9]	2018	44 F	CT+MR+MRCP	Y	Pancreaticoduedonectomy	N	>48 months
Still[10]	2018	59 F	CT+EUS	Y	Pancreaticoduedonectomy	N	10 months
Ruess[5]	2017	73 F	(-)	Y	(-)	(-)	4 MONTHS
Salibay[11]	2017	49 F	(-)	N	Unresectable because of superior mesenteric artery invasion	Uterus and right ovary	10 months
Mszyco[12]	2017	85 M	USG+CT	Y	Pancreaticoduedonectomy	(-)	2,5 months
Jia[13]	2017	44 F	USG+CT+MR+MRCP	Y	Pancreaticoduedonectomy	N	>31 months
Lee[14]	2015	24 F	CT	Y	Distal pancreatectomy+splenectomy	(-)	(-)
Shi[15]	2015	74 F	CT	Y	Distal pancreatectomy+splenectomy	N	(-)
Oymaci[16]	2013	66 M	CT	Y	Pancreaticoduedonectomy	N	20 days
Zhu[17]	2012	53 F	(-)	Y	Pancreaticoduedonectomy	(-)	>20 months
Kim[18]	2011	48 M	USG+MR+CT	Y	Gross pancreatic mass resection	(-)	4 months
Shen[19]	2010	72 F	(-)	Y	Pancreaticoduedonectomy+ left hepatectomy+lokal gastric resection	Liver	2 months
Gelos[20]	2008	61 F	(-)	Y	Pancreaticoduedonectomy	(-)	11 months
Bloomston[21]	2006	67 F	CT	Y	Pancreaticoduedonectomy	Biliary tree	4 months
Chimel[22]	2005	47 M	(-)	Y	Pancreaticoduedonectomy	Biliary tree	(-)
Barkatullah[23]	2005	67 F	(-)	(-)	(-)	(-)	8 months
Darvishian[24]	2002	74 M	CT	Y	Pancreaticoduedonectomy	Duedonum	>4 months
Millis[25]	1994	(-)	(-)	Y	Pancreaticoduedonectomy	(-)	(-)
Takahashi[26]	1987	48 F	(-)	N	Autopsy material	Gastric wall	Reported on autopsy

M: Male; F: Female; EPİ: Epidemiology; CT: Computed Tomography; MR: Magnetic Resonance; MRCP: Magnetic Resonance Colangiopancreatography; EUS: Endoscopic Ultrasound; PET/CT: Positron Emission Tomography/Computed Tomography; Y: Yes; N: No; (-):Information couldn't find.

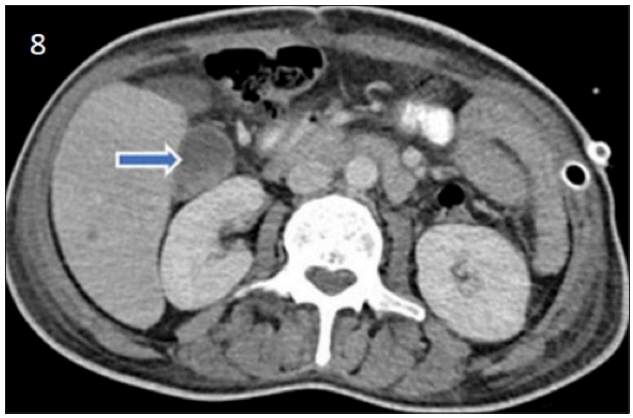


Figure 8. Newly developed necrotizing mass around the right adrenal gland.

is characterized by aggressive progression and a poor prognosis, with an average life expectancy of approximately six months after diagnosis.[3] Imaging techniques, including CT and magnetic resonance imaging (MRI), are useful diagnostic tools, while endoscopic ultrasonography (EUS) is considered the gold standard. Definitive diagnosis is established through biopsy or surgical resection. In cases where surgical intervention is contraindicated or biopsy cannot be performed using minimally invasive methods, PET-CT should be considered.

If resection is feasible, surgery remains the preferred treatment option, given the tumor's poor prognosis.[4] For patients who are not surgical candidates or those with distant metastases, systemic chemotherapy is recommended.[5] However, an optimal chemotherapy regimen has not yet been established due to the limited number of reported cases.

A literature review conducted by Lalonde et al.[3] in 2022 identified a total of 39 previously reported cases of carcinosarcoma. Additionally, three new cases were included in their study, bringing the total number of documented pancreatic carcinosarcoma cases to 42 since the disease was first described in 1951.[1,3,4,6,7] With the inclusion of these new cases, a table was compiled, summarizing diagnostic imaging modalities, surgical techniques, metastasis status, and tissue invasion findings at the time of diagnosis for all available cases (Table 1).[3,4,5,7-27]

In the case we presented, the previous treatment with four cycles of docetaxel + cisplatin was not considered neoadjuvant chemotherapy, as it was not specifically directed toward the primary tumor. To date, only two cases of pancreatic carcinosarcoma treated with neoadjuvant chemotherapy have been reported.[3]

In our patient, pancreatic cancer with gastric invasion was classified as T4 based on perioperative evaluations. Due to the presence of a T4 tumor and the patient's unstable hemodynamics at the time of surgery, curative resection was not feasible. Given the aggressive nature and poor prognosis of pancreatic carcinosarcoma, our patient unfortunately succumbed to widespread metastases within two months of diagnosis.

CONCLUSION

Pancreatic carcinosarcoma is a rare malignancy with a poor prognosis, making early diagnosis and the initiation of neoadjuvant chemo-radiotherapy particularly challenging. Radiological examinations should be performed based on patient symptoms. In our literature review, CT was identified as the most commonly used diagnostic tool, although EUS is the most specific and sensitive test. The mortality rate of pancreatic carcinosarcoma is exceptionally high, and its prognosis remains poor. Therefore, if resection is feasible at the time of diagnosis, surgical intervention should be prioritized, followed by adjuvant chemotherapy.

Peer-review: Externally peer-reviewed.

Authorship Contributions: Concept: E.M.Y., N.D.; Design: İ.E., F.Y.; Supervision: E.M.Y., F.Y.; Resource: E.K., A.M.E.; Materials: E.K., A.M.E.; Data Collection and/or Processing: F.Y., N.D.; Analysis and/or Interpretation: İ.E., N.D.; Literature Review: E.M.Y., İ.E., F.Y., E.K., N.D., A.M.E.; Writing: E.M.Y., İ.E.; Critical Review: E.K., A.M.E.

Conflict of Interest: None declared.

Financial Disclosure: The author declared that this study has received no financial support.

REFERENCES

1. Alhatem A, Quinn PL, Xia W, Chokshi RJ. Pancreatic carcinosarcoma clinical outcome analysis of the National Cancer Institute Database. J Surg Res 2021;259:62–70. [CrossRef]
2. Nagtegaal ID, Odze RD, Klimstra D, Paradis V, Rugge M, Schirmacher P, et al; WHO Classification of Tumours Editorial Board. The 2019 WHO classification of tumours of the digestive system. Histopathology 2020;76:182–8. [CrossRef]
3. Lalonde CS, Wang L, Quigley B, Patel P, Maithel SK, El-Rayes BF, et al. Neoadjuvant treatment of pancreatic carcinosarcoma: A case report and review of literature. Chin Clin Oncol 2022;11:8. [CrossRef]
4. Khan J, Cheng L, House MG, Guo S. Carcinosarcoma, a rare malignant neoplasm of the pancreas. Curr Oncol 2021;28:5295–303. [CrossRef]
5. Ruess DA, Kayser C, Neubauer J, Fichtner-Feigl S, Hopt UT, Wittel UA. Carcinosarcoma of the pancreas: Case report with comprehensive literature review. Pancreas 2017;46:1225–33. [CrossRef]
6. Richter GM. Pancreatic adenocarcinoma: CT and PET/CT. In: Neoptolemos J, Urrutia R, Abbruzzese J, Büchler M, editors. Pancreatic cancer. Springer; 2018. p. 681–710. [CrossRef]
7. Cheng L, Liu Y, Lou C, Cheng L. A case of pancreatic carcinosarcoma detected on PET/CT. Hell J Nucl Med 2021;24:262–4.
8. Liu Y, Hao H, Guo X, Xu J, Kang L, Zheng G, et al. Rare pancreatic carcinosarcoma in a patient with medical history of esophageal cancer: A case report and literature review. Medicine 2019;98:e15238. [CrossRef]
9. Zhou X, Li M, Wang P, Teng X, Sun L, Chen J, et al. Carcinosarcoma colliding osteosarcoma of the pancreas: A rare case report of multiple clonal originated pancreatic tumors. Int J Clin Exp Pathol 2018;11:1746–53.
10. Still SA, Becerra CR, Clement-Kruzel SE, Cavaness KM. Locally advanced carcinosarcoma of the pancreas. Proc (Bayl Univ Med Cent) 2018;31:210–2. [CrossRef]
11. Salibay CJ, Rewerska J, Gupta S, Ree N. Primary carcinosarcoma of the pancreas with CD10-positive sarcoma component. J Investig Med High Impact Case Rep 2017;5:2324709617740906. [CrossRef]
12. Mszyco S, Teng L, Annunziata J, Hartman MS. Pancreatic carcinosarcoma: A case report highlighting computed tomography characteristics.

Curr Probl Diagn Radiol 2017;46:342–5. [CrossRef]
13. Jia Z, Zhang K, Huang R, Zhou X, Jiang L. Pancreatic carcinosarcoma with rare long-term survival: Case report and review of the literature. Medicine (Baltimore) 2017;96:e5966. [CrossRef]
14. Lee J, Hyun JJ, Lee HS. A rare cause of abdominal pain by pancreatic mass in a young female patient. Carcinosarcoma of the pancreas. Gastroenterology 2015;149:e3–5. [CrossRef]
15. Shi HY, Xie J, Miao F. Pancreatic carcinosarcoma: First literature report on computed tomography imaging. World J Gastroenterol 2015;21:1357–61. [CrossRef]
16. Oymaci E, Argon A, Coşkun A, Uçar AD, Carti E, Erkan N, et al. Pancreatic carcinosarcoma: Case report of a rare type of pancreatic neoplasia. JOP 2013;14:212–5.
17. Zhu WY, Liu TG, Zhu H. Long-term recurrence-free survival in a patient with pancreatic carcinosarcoma: A case report with a literature review. Med Oncol 2012;29:140–3. [CrossRef]
18. Kim HS, Joo SH, Yang DM, Lee SH, Choi SH, Lim SJ. Carcinosarcoma of the pancreas: A unique case with emphasis on metaplastic transformation and the presence of undifferentiated pleomorphic high-grade sarcoma. J Gastrointestin Liver Dis 2011;20:197–200.
19. Shen ZL, Wang S, Ye YJ, Wang YL, Sun KK, Yang XD, et al. Carcinosarcoma of pancreas with liver metastasis combined with gastrointestinal stromal tumour of the stomach: Is there a good prognosis with the complete resection? Eur J Cancer Care (Engl) 2010;19:118–23. [CrossRef]
20. Gelos M, Behringer D, Philippou S, Mann B. Pancreatic carcinosarcoma. Case report of multimodal therapy and review of the literature. JOP 2008;9:50–5
21. Bloomston M, Chanona-Vilchis J, Ellison EC, Ramirez NC, Frankel WL. Carcinosarcoma of the pancreas arising in a mucinous cystic neoplasm. Am Surg 2006;72:351–5. [CrossRef]
22. Chmiel B, Wodołazski A, Kozaczka A. Carcinosarcoma of the pancreas--Case report and literature review. [Article in Polish] Wiad Lek 2005;58:243–6.
23. Barkatullah SA, Deziel DJ, Jakate SM, Kluskens L, Komanduri S. Pancreatic carcinosarcoma with unique triphasic histological pattern. Pancreas 2005;31:291–2. [CrossRef]
24. Darvishian F, Sullivan J, Teichberg S, Basham K. Carcinosarcoma of the pancreas: A case report and review of the literature. Arch Pathol Lab Med 2002;126:1114–7. [CrossRef]
25. Millis JM, Chang B, Zinner MJ, Barsky SH. Malignant mixed tumor (carcinosarcoma) of the pancreas: A case report supporting organ-induced differentiation of malignancy. Surgery 1994;115:132–7.
26. Takahashi K, Wakayama M, Asaji A, Ando M, Shibuya K, Shibuya H, et al. An autopsy case of a so-called carcinosarcoma of the pancreas. [Article in Japanese] Japan J Cancer Clin 1987;33:1481–7.
27. Quinn PL, Ohioma D, Jones AMK, Ahlawat SK, Chokshi RJ. Treatment of rare and aggressive pancreatic carcinosarcoma. ACG Case Rep J 2020;7:e00379. [CrossRef]

OLGU SUNUMU - *ÖZ*

Gastrik hemoraji ile prezente olan pankreas trofoblastik karsinosarkomu olgu sunumu ve literatür taraması

Pankreas karsinosarkomu pankreasın çok nadir görülen malign tümörlerinden bir tanesidir. Agresif seyretmekle birlikte tespit edildiklerinde lokal veya uzak organ metastazı ile saptanabilirler. Bu yazıda, hastanemiz acil servisine kanlı kusma şikayeti ile başvuran ve gastrik hemoraji ön tanısı ile operasyona alınan hastada lokal invazyon göstermiş olan pankreas trofoblastik karsinosarkomuna uygulanan cerrahi prosedür, patoloji sonucu ve hastalığın kısa sürede agresif progresyonu prezente edilmiştir. Nadir bir vaka olan pankreas trofoblastik karsinosarkomu için literatür taraması yapılmış ve bulgular sunulmuştur.
Anahtar sözcükler: Gastrointestinal sistem; hemoraji; karsinosarkom; pankreas.

Ulus Travma Acil Cerrahi Derg 2025;31(4):405-410 DOI: 10.14744/tjtes.2025.72884