

## Case report

## Rare Case of Pancreatic Cancer with Metastasis to the Trapezium

Talwinder Nagi MD, Raksha Sharma MD, Elisheva Knopf MS, Warren Brenner MD

1. Florida Atlantic University, USA

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## Abstract

In 2023, there were an estimated 64,050 new cases of pancreatic cancer and 50,550 deaths [10]. A diagnosis of metastatic pancreatic cancer has an extremely poor prognosis, with a five-year survival rate of about 3% [11]. The most common sites of metastasis are in the liver and peritoneal cavity [1]. We discuss the first documented case of primary pancreatic cancer with metastasis to the trapezium and review potential presenting symptoms that healthcare providers should be aware of for further evaluation.

## Introduction

Pancreatic cancer is an aggressive disease characterized by its poor response to therapy and low survival rates. In 2023, approximately 63,050 new cases were diagnosed and there were an estimated 50,550 deaths. Incidence for pancreatic cancer has gone up by about 1% each year since the late 1990s, and the death rate has increased since that time by 0.2% per year. The combined five-year survival rate for all stages is 12%, dropping at a lower rate of 3% for metastatic disease [10,11].

The most common site of pancreatic cancer metastasis is the liver, followed by lung and peritoneal metastasis [11]. Bone and adrenal secondary tumors make up 10% of pancreatic cancer metastasis [11]. Some symptoms that may be associated with skeletal metastasis are bone pain, pathological fractures, and hypercalcemia. Although rare, it is essential for healthcare practitioners to be aware of this possibility for appropriate screening, diagnosis, and management. This case study presents the first known documented case of pancreatic cancer that metastasized to any carpal bone and specifically the trapezium.

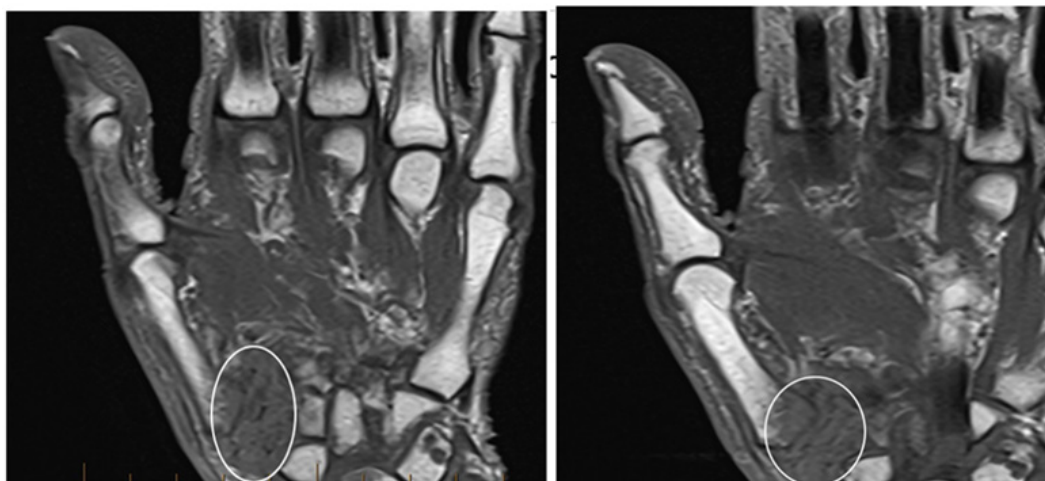
## Case Presentation

An 83-year-old female with metastatic pancreatic cancer to the lungs on chemoradiation therapy and left lower extremity deep vein thrombosis on apixaban presented to the emergency department due to left hand pain and swelling for three months. The pain was primarily at the left thumb basal joint, was initially intermittent but had progressed, and she denied any trauma to that location. For the past few days the generalized swelling of the left hand had increased and was associated with redness and warmth. Ice packs and heating pads provided no relief. For her

pancreatic cancer, she was treated with gemcitabine/abraxane and two cycles of FOLFOX which she tolerated poorly. She has since been treated with 5-FU/Onivyde complicated by diarrhea and weakness.

On presentation, her vitals were hemodynamically stable and she was not febrile. On examination, she was in no distress but cachectic in appearance. Physical examination revealed left thumb carpometacarpal joint swelling with erythema and no fluctuation, and range of motion was intact. Laboratory results were remarkable for elevated erythrocyte sedimentation rate of 51 mm/hr, C-reactive protein of 6.29 mg/dL, and alkaline phosphatase of 174 IntlUnit/L. Blood cultures were negative and she had no leukocytosis or elevated amylase or lipase. Magnetic resonance imaging (MRI) of the left hand revealed metastatic disease involving the entire trapezium bone and base of the first metacarpal associated with diffuse edema of soft tissue, as depicted in figure 1.

Due to concern for any septic arthritis, the patient underwent incision and drainage of left thumb basilar joint and sequestrectomy of dead bone with tissue sent for pathology and culture. She was found to have edematous underlying tissue and mucopurulent material. The patient was treated with as needed pain control and was started on empiric vancomycin and ceftazidime pending culture results. Surgical and fungal culture results remained negative past 48 hours. However, surgical pathology from the necrotic bone and tissue confirmed metastatic disease depicted on MRI of the left hand and revealed metastatic moderately differentiated adenocarcinoma. By immunohistochemistry, the neoplastic cells were pancytokeratin and CK7 positive, and negative for CK20, CDX2, and TTF1. With these findings,



**Figure 1.** Metastatic involvement of entire trapezium bone and base of 1st metacarpal associated with diffuse edema of soft tissue.

the patient was made aware to follow up very closely with her Oncologist and given her immunocompromised state, she was discharged on ceftazidime 2g intravenous daily for six weeks.

### Discussion

The common metastatic locations for pancreatic cancer are the liver, lung, and peritoneal cavity. Bone involvement from pancreatic cancer is far less likely [1]. Both osteolytic and osteoblastic lesions from osseous pancreatic metastases have been described in literature. However, our case is the first documented trapezium bone metastasis from pancreatic cancer. Prior to reviewing the current literature on the relation between pancreatic metastases and carpal hand bones, it is necessary to review the prevalence and pathogenesis of skeletal metastasis.

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