

**OVERT UPPER GASTROINTESTINAL BLEEDING OF A GASTRIC METASTASIS TREATED WITH
CHEMOEMBOLIZATION IN A PATIENT DIAGNOSED WITH PAPILLARY THYROID CARCINOMA: A CASE REPORT**

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ABSTRACT

Significance: This case is the first case reported of PTC metastasis to the stomach presenting as a bleeding solid mass located at the gastric fundus. Tumoral bleed was treated with chemoembolization.

Clinical Presentation: We present a case of a patient with overt upper GI bleeding from a gastric mass presenting with melena and symptomatic anemia at the outset persisting despite standard medical therapy. The gastric mass was diagnosed through trans-nasal endoscopy and biopsy, revealing papillary thyroid carcinoma (PTC) metastasis on histopathologic studies. Bleeding was persistent despite standard medical therapy yet this eventually resolved after chemoembolization of the major feeding vessels of such tumor. The patient was a 51 year old female previously diagnosed with PTC last 2013.

Recommendation: This case reports the possibility of PTC metastasizing to the stomach. Furthermore, this case highlights the efficacy of chemoembolization as a therapy for tumoral bleed with this type of gastric mass.

KEYWORDS

Papillary Thyroid Carcinoma Metastasis; Gastric Metastasis of PTC

INTRODUCTION

Papillary thyroid carcinoma is the most frequent type of thyroid malignancy accounting for 80% of all cases.¹ Usual areas of metastasis include the loco-regional lymph nodes. Distant metastasis are rare and if such occurs, usually involve the lungs, liver, bones and brain.² This report shows a rare case of PTC metastasizing to the stomach that presented with bleeding and its subsequent management.

CLINICAL CASE

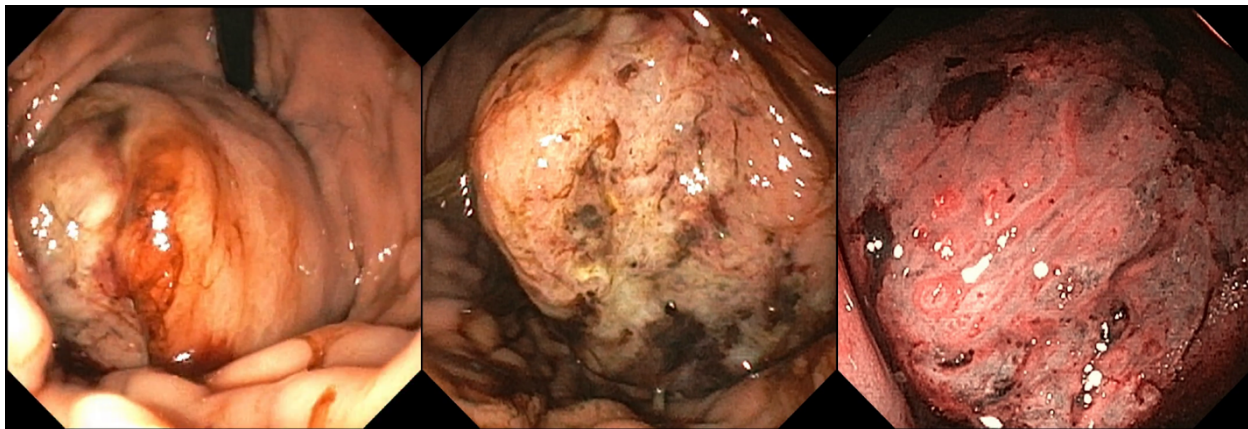
Our patient was diagnosed with PTC last 2013 presenting as a palpable anterior neck mass. She underwent a series of surgeries (from sub-total thyroidectomy [2013] to completion total thyroidectomy [2014] for tumor recurrence) with samples sent for excision histopathology. She underwent radioactive iodine (RAI) therapy for a total of 2 sessions (with 150 Mci accumulated dose) post-surgery. She developed post-procedural hypothyroidism as well as proximal esophageal strictures related with the therapies. Due to such, she was on maintenance hormone replacement with levothyroxine and mechanically soft diet as tolerated. She was generally well since then.

Early 2018, she was once again diagnosed with tumor recurrence that presented as a palpable neck mass at the previous surgical site bed and scar. On consult with her endocrinologist, further imaging, metastatic work-up and immunotherapy as salvage therapy were advised yet patient opted not to proceed for personal reasons. The patient then was lost to follow up. In the interim, she was experiencing intermittent passage of black tarry stools and abdominal pain relieved by intake of tramadol prescribed to her from previous consults. She did not report of hematemesis, coffee ground vomiting, jaundice and fever.

Late 2019, she began presenting with symptoms of easy fatigability, pallor, progressive weight loss and persistent intermittent melena. These symptoms prompted her to seek consult with a gastroenterologist affiliated with our institution. Series of laboratories were done, with priority of a complete blood count. Her lab results showed anemia (hemoglobin level of 75 mg/dl). She was advised for possible blood transfusion and endoscopy at this consult, thus was admitted in our institution.

On admission, patient was seen awake, ambulatory yet weak looking. She was pale-looking and dyspneic on minimal exertion. Physical examination was remarkable for pallor, tachycardia with a heart rate of 110 and a digital rectal examination of dark brown stools with black particles. Admission laboratories revealed hemoglobin of 79 and hematocrit of 26%; Baseline electrolytes, liver functions tests and bilirubin were unremarkable. Coagulation parameters were within acceptable limits (PT% 90, INR 1.07 PTT 27). She underwent blood transfusion of 1 unit packed red blood cell due to her present hemoglobin level and ongoing melena.

An upper endoscopy via a trans-nasal route was scheduled. Co-management from Endocrinology and Cardiology services and clearance for the procedure was sought and secured. On endoscopy, a polypoid solid bulky mass with irregular amorphous non-friable overlying mucosa was seen. Multiple biopsy samples were taken for histopathology which revealed features consistent with papillary thyroid carcinoma.

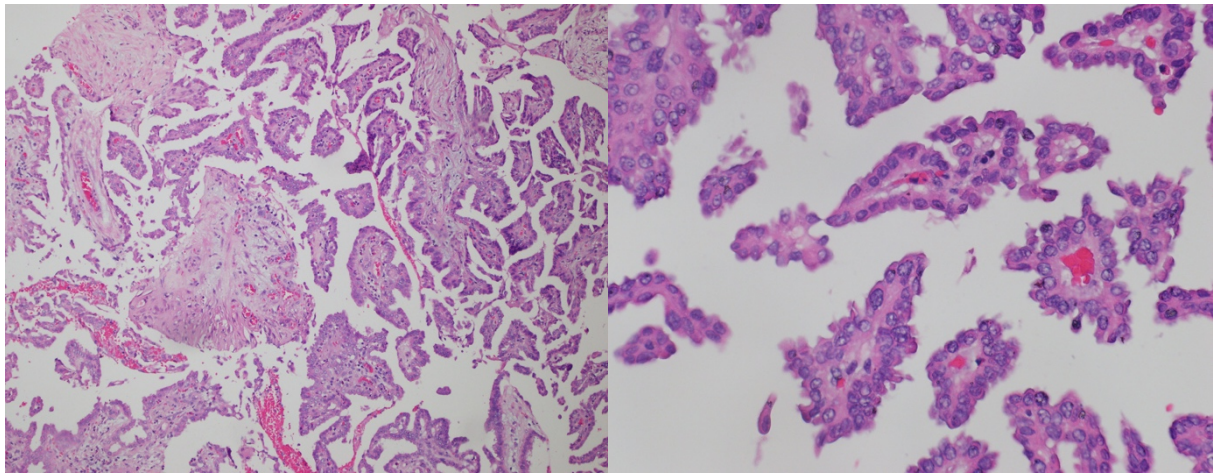


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b

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Figure 1. Endoscopic Images taken using Olympus Ultrathin scope through the trans-nasal route. a. Gastric mass seen at the gastric fundus on retroflexed view. Closer view of the mass: b. under white light endoscopy c. under narrow band imaging



a **Figure 2.** Histopathologic photomicrographs of gastric mass tissue samples taken through endoscopy. A. low-power magnification b. high-power magnification with pathognomonic “orphan-annie” nuclei. Grossly, the specimen received in formalin consists of seven white, soft tissue fragments measuring 0.1 cm in aggregate diameter. Microscopic examination shows complex, branching papillae with fibrovascular cores in a background of fibromuscular tissue fragments. The papillae are lined by cuboidal cells with moderate eosinophilic cytoplasm exhibiting nuclear enlargement, crowding, overlapping, and pleomorphism. These nuclei show finely dispersed to clear, ground glass chromatin. Some cells exhibit redundancy in the nuclear membranes exhibited by longitudinal nuclear grooves.

Patient subsequently undergone abdominal and chest CT scans to further document the extent of the gastric mass and to document other intra-abdominal and intrathoracic metastasis. Significant findings were a fairly-defined, mixed attenuating heterogeneously enhancing mass at the gastrosplenic region measuring 8.8 x 8.9 x 7.6 cm and multiple lung masses consistent with metastasis.

During the course of her admission, she had bouts of melena necessitating further blood transfusions. The patient was subsequently referred to general surgery, radiation oncology and interventional radiology for palliation of bleeding. Initial plans for bleeding palliation included surgery (through resection; if resection not feasible, tumor debulking if feasible), radiation therapy, feeding vessels chemoembolization or a combination of all modalities.

A multi-disciplinary conference was done to determine the most optimal palliation modality for the patient. Due to the degree of metastasis and unresectability of the gastric mass, no further surgical interventions were deemed appropriate by the general surgery service. Due to a history of contrast-use precluding iodine intake by the gastric mass cells, RAI was only effective if done post three to six months after to ensure adequate uptake and response. Chemoembolization of the said mass was the only option left for disposal.

Patient eventually underwent a session of chemoembolization planning, with subsequent embolization of at least 80% of feeding arteries. After such intervention, melena had not recurred, hemoglobin values were on a stable trend and symptoms of anemia were resolved. Patient was discharged improved and stable. Future plans for the patient was palliative in nature: referral to hospice for end-of-life care and possible future referral to pain services for pain control/palliation.

DISCUSSION

PTC and documented metastasis

Papillary thyroid carcinomas are typically nonaggressive tumors with a good survival rate approximating 100% for stage I diseases.³ These tumors most often show an indolent clinical course, with localized disease as a general pattern, and typically do not recur or metastasize beyond local lymph nodes.⁴ Papillary thyroid carcinoma is most often than not, curable with complete tumor excision through thyroidectomy.

Yet with every rule is an exception. Distant metastasis have been documented for PTC. The most common site of distant metastases is the lung, followed by the bone with other distant metastases being rare or relatively rare – those involving the brain, breast, liver, kidney, muscle, and skin.^{2,5,6,7,8,9,10,11,12} The presence of distant metastases is the most significant poor prognostic factor for survival, with only 50% metastatic patients surviving after 10 years.¹³

Gastric Metastasis

The stomach has rarely been identified as a metastatic site for PTC. No case reports have been published on PTC as a stand-alone pathology metastasizing to the stomach.

The closest report of gastric metastasis, yet only through the peri-gastric lymph nodes, was reported by Jeong, et. al.¹⁴ This was a case of a 56-year-old woman with peri-gastric lymph node metastatic PTC and concomitant poorly differentiated tubular adenocarcinoma of the stomach. The presence of the metastatic lymph node disease was an incidental finding from the lymph nodes removed along with the gastric mass as part of the over-all management for the mass. This patient underwent laparoscopy-assisted distal gastrectomy, loop gastrojejunostomy, and D2 lymphadenectomy for gastric cancer.

One study had presented gastric metastasis of PTC with concomitant poorly differentiated thyroid carcinoma (PDTC) presenting as a proximal stomach nodule. A case study by Hernandez, et. al.⁴ presented a 46 year old female diagnosed with PTC who underwent upper endoscopy due to development of post-cricoid esophageal stricture. Endoscopy revealed a suspicious gastric nodule that turned out to be metastatic PTC with focal dedifferentiation to PDTC within gastric mucosa.

Chemoembolization as palliation of tumor bleed from metastatic PTC

To date, no case reports has been published presenting chemoembolization as an effective therapy in abating tumor bleed from metastatic papillary thyroid carcinoma of the stomach.

CONCLUSION

To date, this is the first reported case of metastatic PTC presenting as a solid gastric mass with tumoral bleed managed with chemoembolization. This case presents an unusual presentation of papillary thyroid carcinoma presenting with a gastric metastasis as a source of upper gastrointestinal bleeding. Recognizing rare patterns of metastases for PTC may be important in determining prognosis for patients presenting with such and may have significant impact in clinical decision making.

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