

## Case Report

# Radical resection for duodenal carcinoma with isolated bilateral ovarian metastasis: a case report

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### ABSTRACT

Natural history of duodenal adenocarcinoma is not well known. Although extremely rare, the incidence of primary small bowel adenocarcinoma has been increasing. Primary duodenal cancer is a very rare, which has accounted for only 0.3% of all gastrointestinal cancers. Isolated ovarian metastasis from duodenal carcinoma is extremely rare entity. We report a case of duodenal carcinoma with isolated bilateral ovarian metastasis in a 39-year-old female patient managed surgically with Whipple's procedure with bilateral oophorectomy. She presented with complaints of dyspepsia and intermittent vomiting since 1½ years. History of anorexia and weight loss present. Upper gastrointestinal endoscopy was suggestive of circumferential ulcerated friable lesion at duodenum (D1-2) region and histopathology suggestive of moderately differentiated adenocarcinoma. Subsequent imaging studies revealed 6×5 cm duodenal mass in D1 and D2 without IHBRD with right ovarian mass. She underwent staging laparoscopy with open classic Whipple's procedure with bilateral oophorectomy was done. Intraoperatively 6×6 cm mass involving first and second part of duodenum involving head of pancreas was found with 3×3 cm right ovarian mass. Post-operative period was uneventful and she discharged on POD6. Final biopsy was suggestive of moderately differentiated adenocarcinoma of duodenum with bilateral ovarian metastasis and she received adjuvant chemotherapy. Now at 1 year, on regular follow up she is completely asymptomatic and imaging showed no recurrent disease. Isolated ovarian metastasis may not be a contraindication for radical surgery in selected group of patients with duodenal carcinoma.

**Keywords:** Duodenal carcinoma, Ovarian metastasis, Whipple's procedure

### INTRODUCTION

Malignant neoplasms of the duodenum are very rare and aggressive types of cancer. Although the majority of small bowel adenocarcinomas arise in the duodenum, duodenal adenocarcinoma still represents less than 1% of all gastrointestinal cancers so there is limited data is available to guide treatment decisions.<sup>1,2</sup> Unfortunately, early detection and treatment of duodenum carcinoma is an extremely rare condition. Metastatic lesions of duodenal adenocarcinoma are often seen in regional lymph nodes, liver and lungs. Ovarian metastasis is rarely arises form carcinoma duodenum. Only few case reports

are available in literature, which showed the duodenal carcinoma being metastasised to ovary. There is no reported case of duodenal carcinoma with isolated bilateral ovarian metastases in the literature, which was managed with radical surgery.

### CASE REPORT

In this case report we present our experience with radical surgical management of carcinoma duodenum with isolated ovarian metastasis in a 39 year old female along with review of literature. A 39-year-old female with good performance status (ECOG 1) was presented with

complaints of dyspepsia, early satiety and intermittent vomiting since 1½ years. History of anorexia and significant weight loss was present. On physical examination, no significant finding detected. She was evaluated and upper gastrointestinal endoscopy was suggestive of circumferential ulcerated friable lesion at duodenum (D 1-2) region and histopathology was suggestive of moderately differentiated adenocarcinoma. Following that her CECT abdomen and pelvis revealed asymmetric thickening involving distal pylorus, D1 and proximal D2 (upto approximately 7 mm proximal to CBD insertion) predominantly along the medial wall with near complete obliteration of lumen at the level of D1. There is evidence of predominantly solid enhancing 43×38×40 mm mass lesion is seen involving right ovary, metastatic involvement. Left ovary appears to be normal. Gynaecological opinion was taken in view of isolated right ovarian mass. Magnetic resonance imaging abdomen and pelvis was done in view of suspicious right ovarian mass and was suggestive of right ovary appears bulky and also shows significant diffusion restriction likely malignant, drop peritoneal metastasis, primary ovarian malignancy. Her CEA, CA19-9 and CA125 level was 4.92 ng/ml, 53.4 and 14.1IU/ml respectively.

In view of duodenal obstruction with isolated ovarian mass and good performance status of patient with she was planned for staging laparoscopy and proceed. Staging laparoscopy was suggestive of no liver space occupying lesions, no omental or peritoneal nodules and minimal ascites. Right ovarian mass present 3×3 cm. left ovary was grossly normal. Ascetic fluid was tapped and send for cytology which was suggestive of no evidence of malignant cells. Since ascetic fluid for malignant cell was negative and isolated right ovarian mass was proceed and Whipple procedure with bilateral oophorectomy was done.

Postoperative period was uneventful and patient discharged on POD6. Final HPE was suggestive of final biopsy was suggestive of moderately differentiated adenocarcinoma of duodenum with bilateral ovarian metastasis following which she received 6 cycles of Gemcitabine based adjuvant therapy. Now at 1 year, on regular follow up, she is completely asymptomatic and imaging showed no recurrent disease.

## DISCUSSION

Duodenal carcinoma is rare but aggressive malignancy. Most symptomatic patients have advanced disease at the time of initial presentation and complete surgical excision is the recommended whenever feasible. As a result, these patients have a poor prognosis.<sup>3-5</sup> Although duodenal adenocarcinoma has the highest incidence among the small bowel adenocarcinomas, jejunal adenocarcinoma, particularly that at the proximal end, that most frequently metastasizes to the ovary. Ovarian metastasis is very rare with small bowel tumour and metastatic ovarian tumors from Small bowel adenocarcinoma account for 1.6% of

all metastatic ovarian tumors.<sup>6</sup> Duodenal carcinoma metastasizes to the ovary is extremely rare and we reviewed the literature, which revealed only few cases of duodenal carcinoma with ovarian metastasis. This case is unique in that the small intestine (duodenum) is not a frequent site of origin of Krukenburg tumor and this is first case where there is isolated ovarian metastasis, which was managed with such a radical surgery.

Bruls et al reported three cases of duodenal carcinoma with ovarian metastasis and all of them having bilateral ovarian metastasis.<sup>6</sup> Mistushita et al comprehensively reviewed the metastatic ovarian tumour arising from small bowel adenocarcinoma, showed majority of them are from jejunum, and most of the patients were having bilateral ovarian metastasis.<sup>7</sup> Loke et al reported a case of krukunberg tumor arising from a primary duodenojejunal adenocarcinoma.<sup>8</sup> Henry et al reported a case of signet ring cell carcinoma of duodenal bulb with metastasis to ovaries and colon.<sup>9</sup> None of these reports showed a radical resection with curative intent and long-term follow up and survival. Therefore, this is a rare case scenario in which highly aggressive duodenal carcinoma with isolated ovarian metastasis in good performance status patient, radical surgery is still feasible and can be offered if possible. However, in view of only few case reports and limited experience treating the patients we still have to wait for the further studies.

Unfortunately, little data is currently available to inform the choice of adjuvant chemotherapy following complete surgical resection. Given its rarity, most therapeutic studies have traditionally combined DA with either other periampullary cancers or small bowel adenocarcinomas. Current practice at many centers is to treat patients with high-risk features (e.g., nodal metastasis) with gemcitabine or oxaliplatin based chemotherapy.<sup>10</sup>

## CONCLUSION

We suggest Whipple's procedure with oophorectomy is feasible in selected patients with duodenal carcinoma and isolated ovarian metastasis. Continued reporting of this rare entity will help in characterizing the natural history of the disease, which may allow for earlier recognition and treatment. Because of the rarity of duodenum adenocarcinoma, the role of chemotherapy in this disease remains undefined and most centres have only limited experience treating these patients. The infrequency of duodenal adenocarcinoma has made it difficult to do randomized study.

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