Parotid Gland Metastasis from a Rectal Carcinoma

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Sir,

Metastasis to the parotid gland usually results from cutaneous malignancies of the head and neck (70 %)—melanomas and squamous cell carcinomas and an additional 15 % from non-cutaneous sites of the head and neck [1]. When a primary cancer originates below the clavicle, metastasis to the parotid gland is uncommon (15 %). The common sites of metastasis from colorectal adenocarcinomas are the liver, lung and the regional lymph nodes. Parotid localization from a rectal carcinoma is an extremely rare finding. Herein, we report a case with primary rectal carcinoma with metachronous parotid metastasis and also discuss the treatment implications relevant to metastases to the parotid gland.

A 40-year-old man with no known co-morbid illness underwent an abdominoperineal resection for an adenocarcinoma lower rectum following neoadjuvant chemoradiation (50Grey external beam radiotherapy +2 cycles of 5 Fluorouracil). The post operative histopathology was suggestive of a residual mucinous adenocarcinoma, with metastasis in 4 out of the 11 perirectal nodes (Stage III-ypT3N2a). He received 6 cycles of adjuvant 5-FU plus oxaliplatin (FOLFOX) chemotherapy and was on regular follow up. Two years later he presented with an insidious onset 4x3cm parotid swelling, a fine needle aspiration cytology suggested a diagnosis of adenocarcinoma. A PET-CT

scan revealed only an isolated uptake in the right parotid region (Fig. 1ab).

He subsequently underwent a right total parotidectomy, a portion of the angle of mandible and the buccal branch of the facial nerve was sacrificed for adequate clearance (Fig. 2a–c). The right level II cervical lymph node was negative for malignancy on frozen section and hence a formal neck dissection was not considered. Histopathological examination showed a 3.5×3 cm tumor in the right parotid with features suggestive of mucinous adenocarcinoma with metastasis in 2 intra parotid lymph nodes which was morphologically similar to the primary rectal adenocarcinoma. Immunohistochemical studies showed tumor cells positive for CEA and CK-20, confirming the final diagnosis of parotid metastasis from rectal adenocarcinoma (Fig. 3a–e). He further went on to receive 5 cycles of Capecitabine plus oxaliplatin (XELOX) chemotherapy. However, within a month of completion of the second line chemotherapy he developed disseminated metastasis and opted to be on best supportive care.

Metastases to the parotid gland are generally quite rare—in a series including more than 6,000 patients of benign and malignant parotid tumors, the incidence of parotid metastasis was around 8.1 % [1]. Parotid gland metastasis is usually an ominous sign and more so, if the primary tumor is located below the clavicles. The common infra clavicular primaries include breast, prostate, kidney and the gastrointestinal tract. To the best of our knowledge, only a very few primary colorectal cancer patients with parotid metastases have been reported in the literature [2–4]. Metastatic lesions in the parotid gland can occur at intraglandular, paraglandular or parenchymatous levels and are frequently difficult to distinguish from primary tumors of the gland.

Many studies have clearly shown that surgical resections of hepatic or lung metastases for colorectal malignancy patients provide survival benefits; however, the role of surgery for a solitary parotid metastasis has not yet been

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Fig. 1 **a** Whole body PET scan revealed only an isolated uptake in the right parotid. **b** PET-CT scan revealed only an isolated uptake in the right parotid region

Fig. 2 **a** Preoperative clinical photograph. **b** Intra-operative photograph of a right total parotidectomy, a portion of the angle of mandible and the buccal branch was sacrificed for adequate clearance. **c** Specimen right total parotidectomy photograph

Fig. 3 **a** H&E X 10- Metastatic adenocarcinoma right parotid. **b** H &E X 20—Parotid tumor. Cells are seen in clusters, acini and as signet ring cells. **c** Parotid Lymph Node X 20—Metastatic Carcinoma CEA

positivity. **d** Parotid Lymph Node X 20—Metastatic Carcinoma CK-20 positivity. **e** H &E X 20—Primary Rectal adeno carcinoma showing mucin and signet ring cells

defined because of the rarity of the condition. Extrapolating the data from hepatic and pulmonary metastasectomy patients, it seems to be reasonable to perform parotid surgery for those patients with isolated parotid metastases. However the issues pertaining to the extent of the surgery (total versus superficial parotidectomy), the need for a prophylactic lymph node dissection and the need for radiotherapy continue to remain controversial [5]. The presence of gross residual disease both in the primary and in 4 of the 11 perirectal nodes following neoadjuvant chemo radiation and the presence of metastasis in the intra parotid lymph nodes may have contributed to the poor prognosis in our patient despite the use of oxaliplatin based chemotherapy. In conclusion, a margin negative excision coupled with consolidation chemotherapy seems to be the best available therapeutic option to conclusively diagnose and manage a parotid gland metastasis from a rectal cancer.

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