A rare case of Merkel cell carcinoma presenting with an upper gastrointestinal bleed: a case report

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ABSTRACT

Background: Merkel cell carcinoma is a rare skin malignancy of neuroendocrine origin that is highly aggressive and frequently metastasizes.

Case Presentation: We present a case of Merkel cell carcinoma in which the patient developed metastatic gastric deposits that led to his admission to the acute medical unit with signs consistent with an upper gastrointestinal bleed. Treatment options in this case were limited to palliative radiotherapy (RT) given the patient's multimorbid state. Unfortunately, our patient deteriorated during his admission and passed away.

Conclusion: There have been few reports of Merkel cell carcinoma metastasizing to the stomach. In this case, we highlight an immediately life-threatening presentation with upper gastrointestinal bleeding that required prompt endoscopic intervention. The relatively recent initiation of immunotherapy as a management option for this underlying condition introduces a shift in treatment options that were previously limited to RT and chemotherapy.

Keywords: Case report, Merkel cell carcinoma, immunotherapy, metastasis, endoscopy.

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Background

Merkel cell carcinoma is a rare cutaneous malignancy that typically presents as a non-tender, firm, red, or skin-colored nodule on the skin, particularly in the location of the head or neck [1]. It arises from the specialized mechanoreceptors residing within the basal layer of the epidermis, these are known as Merkel cells and via their neural connections convey the sensation of touch [2]. Recognized factors which may initiate a malignant change include ultraviolet radiation exposure and immunosuppression [1]. The metastatic deposits have been described in the literature complicating the disease process and treatment strategies. The most common metastatic sites include the associated lymph node drainage system (27%-60%), distant skin (9%-30%), lung (10%-23%), central nervous system (18%), liver (13%), and bone (10%-15%) [1-4].

We describe a rare case of metastatic Merkel cell carcinoma presenting with a gastrointestinal bleed as a consequence of secondary gastric deposits.

Case Presentation

A 73-year-old gentleman with a large right axillary mass that had recently been assessed in the breast clinic presented via acute medical admissions with a short history of dyspnea and black stools.

The patient had several comorbidities including chronic obstructive pulmonary disease, ischemic heart disease (with a history of coronary artery bypass graft), aortic stenosis previously treated with a transcatheter aortic valve implantation, type 2 diabetes mellitus, abdominal aortic aneurysm, and previous prostate cancer. Prior to admission, he was independently mobile with no package of care in place and had a poor exercise tolerance of 10-20 yards that was limited due to shortness of breath.

On examination he was pale, tachycardic and had a hemoglobin of 58 g/l (reference range, 135-175 g/l). He was resuscitated with five units of packed red cells and given proton pump inhibitor therapy. Esophago-gastroduodenoscopy revealed four distinct masses within the body of the stomach, all with friable mucosa, necrotic ulceration, and evidence of low volume bleeding (see Figure 1). Diagnostic biopsies were taken from the gastric lesions, which were then treated with Endoclot TM spray.

Ultrasound imaging of the axillary mass had been previously performed followed by fine needle aspiration (FNA) to harvest cytology. Subsequent CT imaging

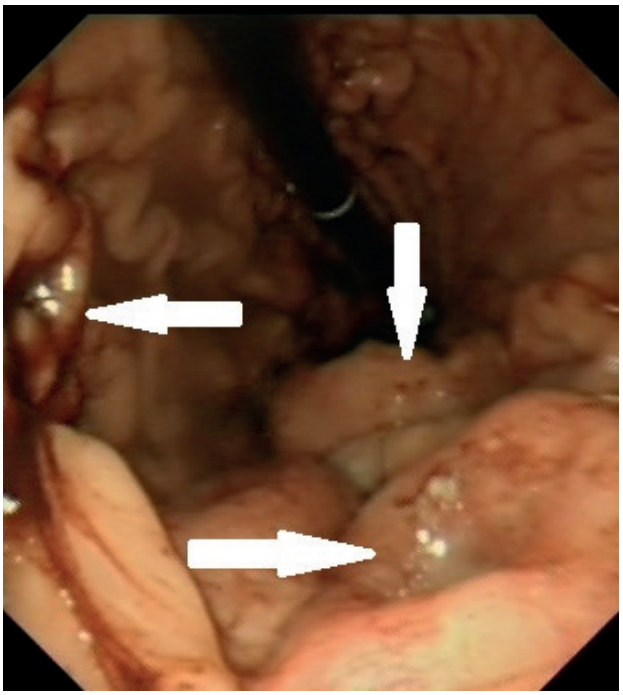


Figure 1. *Retroflexed endoscopic view highlighting three of the four ulcerated gastric body masses seen at OGD following the patient's admission with an upper gastrointestinal bleed.*



Figure 2. *Coronal CT images showing the large right axillary mass and thickened irregular gastric wall.*

showed an 8.4 cm right axillary mass with enlarged local axillary lymph nodes and confirmed a large gastric mass as seen at endoscopy (see Figure 2).

The histology of his gastric biopsies is shown in Figure 3. This matched the cytological findings from the FNA of his axillary mass.

Histopathological assessment of the gastric biopsies showed a tumor composed of sheets of malignant cells with scanty cytoplasm and brisk mitotic activity infiltrating the lamina propria. Immunohistochemical staining

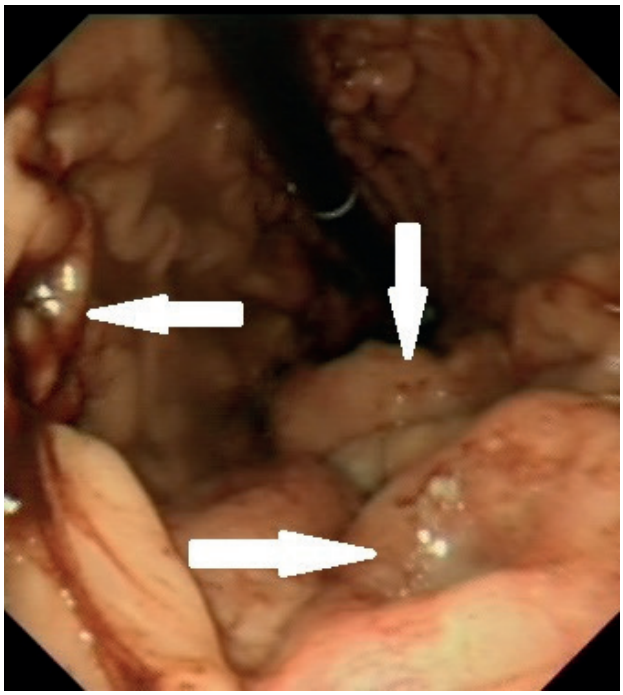


Figure 3. *Gastric biopsy showing metastatic Merkel cell carcinoma. A) Pieces of gastric mucosa infiltrated by medium to large sized malignant cells with round to oval hyperchromatic nuclei (H & E 100×). B) High power view showing cells with high N/C ratio, stippled nuclear chromatin, scanty ill-defined pale eosinophilic cytoplasm and mitotic figures (H & E 400×). C) CK 20 expression within carcinoma cells (400×). D) Synaptophysin expression within carcinoma cells. Note the negative entrapped native gastric glands (400×). Inset- very high MIB-1 proliferation index within carcinoma cells (400×).*

was positive for synaptophysin, chromogranin, CK 20 and CAM 5.2 supporting a diagnosis of metastatic Merkel cell carcinoma.

The patient was diagnosed with Merkel cell carcinoma with gastric deposits.

Given his multiple comorbidities, he was felt not to be a suitable candidate for gastrectomy or first line immunotherapy. Having stabilized from his upper gastrointestinal bleed, he was offered palliative radiotherapy (RT) to the gastric mass. Unfortunately, he deteriorated rapidly with sudden onset delirium. Imaging of his brain indicated metastatic deposits, presumed to have arisen from the same primary malignancy. He passed away a few days later.

Discussion

Merkel cell carcinoma is an uncommon cutaneous neoplasm of neuroendocrine origin with only a few reports of metastatic gastric deposits [1-3]. It is more prevalent in the elderly Caucasian population [4], with primary lesions typically present on sun-exposed sites, most commonly the head and neck [4]. The aggressive nature of the tumor means it often has a rapid growth rate with metastasis occurring early in the disease course. Although very rare, the incidence appears to be rising with estimated rates of 0.1-0.2 per 100,000 in England in 2010 [5]. Prognosis is

generally poor, reflected by a 5-year survival rate of 64% and as low as 11% for stage IV disease [5].

Multidisciplinary management is recommended, and treatment is dependent on the stage of the disease and patient's performance status [4]. Localized disease is managed with surgical excision, and adjuvant RT is recommended only for incomplete excisions or recurrences. Adjuvant chemotherapy is not recommended. For regional disease, immunotherapy can be used in patients for whom curative surgery or curative RT are not feasible options. For many years chemotherapy and RT were the only treatment options for metastatic disease but responses were short lived. Nowadays, there is a shift in treatment approach for patients in this group. Currently worldwide, avelumab is the standard of care in the first line setting for patients with an Eastern Cooperative Oncology Group (ECOG) performance status of either 0 or 1. Avelumab is also now an option for patients previously treated with chemotherapy with an ECOG 0 or 1. Studies have demonstrated good responses and durations of response to this treatment; median overall survival (OS) from the latest trials was 12.6 months (95% CI 7.5 to 17.1 months) and the 42-month OS rate was 31% (95% CI 22% to 41%) [6,7]. For patients not fit for immunotherapy and with metastatic disease, chemotherapy is an option. Multiple regimens have been reported, including those with platinum-containing agents often in combination with etoposide and others that can be effective in Merkel cell carcinoma. The response rates from analyses of series of patients in the first line setting range from 40% to 70% with a disease median interval time from 2 to 9 months [8,9].

Conclusion

In summary, Merkel cell carcinoma is an aggressive cutaneous malignancy known to frequently metastasize. This case outlines a rare report of gastric metastatic deposits presenting with a gastrointestinal bleed. Previously RT and chemotherapy represented the only treatment options for those with metastatic disease, however newer immunotherapy agents offer demonstrable survival benefits in certain cohorts of patients.

List of Abbreviations

Conflict of interest

The authors declare that there is no conflict of interest regarding the publication of this Case Report.

What is new?

Merkel cell carcinoma is a rare condition, and here the authors describe an unusual gastrointestinal manifestation, namely, GI bleeding from metastatic deposits not previously diagnosed. This phenomenon has rarely been reported in the literature. In addition, the authors discuss how the relatively recent introduction of immunotherapy as a treatment option offers demonstrable survival benefits.

Funding

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Consent for publication

Written consent was obtained from the patient.

Ethical approval

Ethical approval is not required at our institution to publish an anonymous case report.

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Summary of the case

1	**Patient (gender, age)**	Male, 73-year-old
2	**Final diagnosis**	Merkel cell carcinoma with metastatic gastric deposits
3	**Symptoms**	Dyspnea and black stools
4	**Medications**	Packed red cells, IV proton pump inhibitor, immunotherapy
5	**Clinical procedure**	Esophago-gastro-duodenoscopy with Endoclot TM spray applied to the gastric lesions
6	**Specialty**	Gastroenterology