



Anal Squamous Cell Carcinoma with Cystic Brain Metastases: A Case Report

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Abstract

Anal canal cancers are a rare disease with infrequent metastasis to distant organs. When present, distant metastases are most often located in the liver or lung. As such the possibility exists for clinicians to overlook rare metastatic sites. We present the case of a 47-year-old female patient with a T3 N1c anal squamous cell carcinoma treated with radical chemo-radiotherapy. Three years following initial diagnosis neurological symptoms were reported including headache and bilateral numbness and paresthesia in the C6 & C7 distribution. Magnetic Resonance Imaging demonstrated multiple cystic metastatic lesions within the brain for which the patient underwent palliative radiotherapy. Brain metastasis from anal squamous carcinoma is exceptionally rare with only five previous cases reported in literature. Prognosis following this diagnosis is poor. To our knowledge cystic lesions have not previously been described. Clinicians treating patients with anal cancers should be aware of unlikely metastatic sites and should consider the possibility of brain metastasis in patients with risk factors for disease recurrence such as node positive disease or poorly differentiated tumors.

Introduction

Cancer of the anal canal is rare, comprising only 2% to 4% of large bowel cancers [1]. Worldwide, anal canal cancers are reported at a rate of 0.2 to 3.6 per 100,000 population per year [2]. If the lesion is small and localized then local excision may be possible if oncological clearance and preservation of continence can be achieved. However, in the majority of cases this is not possible and radical chemo-radiotherapy is often the first line treatment. Distant metastases are infrequent, with the liver and lung being the most common sites when they do occur. Brain metastases are exceptionally rare, with very few cases described in the literature [3-7]. As such, it may be possible that diagnosis is delayed if signs and symptoms are not recognized by clinicians in a timely manner.

Case Presentation

A 47-year-old female patient presented with anal discomfort, rectal bleeding and pain on defecating. Past medical history included L5/S1 discectomy and appendectomy. She described only occasional alcohol use and a past history of smoking many years previously. Examination under anesthesia revealed an anal mass extending around the anal canal from 12 o'clock to 5 o'clock. Staging investigations including MRI pelvis, CT thorax, abdomen and pelvis and PET CT imaging confirmed a T3 N1c M0 tumor with left inguinal, left external iliac and mesorectal nodal involvement. Histopathology confirmed a poorly differentiated squamous cell anal carcinoma. The patient underwent a defunctioning colostomy for symptom control and commenced on radical chemo-radiotherapy. Radiotherapy consisted of 53.2 GY in 28 fractions and Chemotherapy of Mitomycin/5-Flouracil (5-FU). At three months, a follow up MRI pelvis showed good partial response and MRI pelvis/CT (chest, abdomen, and pelvis) imaging at six and twelve months respectively showed no tumour recurrence or metastatic disease. At two years' post-diagnosis the patient described shoulder pain and further MRI was organized. Unfortunately, this demonstrated metastatic lesions within the T4 and L2 vertebrae for which she underwent palliative radiotherapy of 30 GY in 10 fractions to T4 and a single 8 GY fraction to L2, followed by systemic Carboplatin and Paclitaxel. Three years following diagnosis the patient reported upper thoracic pain, bilateral numbness and paresthesia in C6/7 distribution. Further questioning revealed headache symptoms and occasional difficulty in word-finding noted by the family. Urgent MRI brain and spine demonstrated multiple variable sized cystic metastatic lesions scattered within both cerebellar and cerebral hemispheres with some mass effect in the left frontal lobe. T1-weighted post contrast

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Table 1: Summary of brain metastasis from anal cancer (English language publications).

Year	Author	Type	Initial management	Time to diagnosis	Highlighted symptoms	Nature of metastasis	Management	Outcome	Survival after metastatic diagnosis
2014	Hernando-Cubero et al. [3]	SCC	Chemotherapy	14 months	Arm weakness, Myoclonic status	Multiple lesions	Steroids and radiotherapy	Patient died	12 weeks
2012	Gassman et al. [4]	SCC	Chemoradiotherapy	12 months	Blurred vision, ptosis	Single lesion, 40 mm	Stereotactic radiotherapy planned	Patient died	Patient died before starting treatment
2011	Rughani et al. [5]	SCC	Chemoradiotherapy	Unclear	Pronator drift, Dysmetria, Visual field neglect	Single lesion, 40 mm	Steroids, Craniotomy, radiotherapy	Patient died	14 weeks
1991	Davidson, Yong. [6]	SCC	Surgery (APR)	104 months	Dysarthria, loss of balance, diplopia, facial numbness, limb weakness	Single lesion	Craniotomy, radiotherapy	Patient died	12 weeks
1967	Klotz et al. [7]	Brain metastasis reported in 1 of 373 patients with anal cancer. This represents this first description found in literature but specific treatment and follow up is not described.							

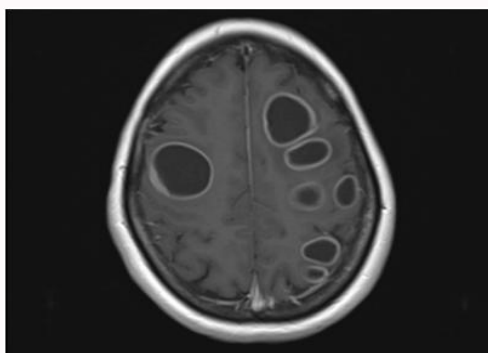


Figure 1: Axial T1-weighted post contrast MRI image demonstrating multiple metastatic lesions. The largest lesion was seen in the Right frontal lobe measuring 31 mm.

imaging (Figure 1) clearly defined the lesions, the largest of which was noted at 31 mm in its largest dimension. There was no evidence of extra-cerebral disease. Palliative radiotherapy was commenced with Dexamethasone, but was not completed as the patient felt too unwell to continue. At the time of writing the patient is 20 weeks following the detection of cerebral metastases. She has commenced Levetiracetam to control seizure activity and is managing with twice daily care.

Discussion

Anal canal cancers are a rare phenomenon. Common symptoms at presentation include rectal bleeding, pain, mass, pruritus and change in bowel habit [8,9]. The histopathology of anal canal cancers differs from that of proximal colorectal cancers. The most common type of anal cancer is squamous cell carcinoma. Conversely the vast majority of colorectal cancers are adenocarcinomas. Risk factors for the development of SCC include HPV infection (accounting for 90% of Anal SCC in the UK) [10], Female gender, HIV infection, long-term immunosuppression, and smoking [2,11]. Initial work into the efficacy of chemoradiotherapy in anal cancer was first reported in the 1970s [12]. In the subsequent years further studies including the UKCCCR ACT1 [13] /ACTII [14] and ACCORD-03 [15] trials have solidified chemoradiotherapy with Mitomycin/5-FU as the standard of care. Complete response rates of 95% are reported, with 3-year recurrence-free rates up to 75%. Most recurrence of anal cancer occurs within the first three years, localized to the pelvis. Therefore close follow-up is necessary during this period to identify patients who may benefit from surgical salvage management [16]. Distant

metastases may occur in up to 17% of patients with anal cancer, with the lungs or liver being the most commonly described metastatic sites. Brain metastases from anal cancer are extremely uncommon. A literature review *via* PubMed for reported incidence of cerebral metastasis resulting from anal cancer resulted in only five previous English language reports dating back to 1967 [3-7]. All incidents developed subsequent to initial diagnosis and treatment of the anal cancer. Neurological symptoms leading to the diagnosis of brain metastases have varied and include blurred vision or visual field disturbance, ptosis, limb weakness, myoclonic status, pronator drift, dysmetria, dysarthria and loss of balance. In the few cases reported, patients died within weeks of the metastatic diagnosis (Table 1). This is first case report that describes cystic metastases from anal squamous cell carcinoma, and with a presentation including bilateral limb paresthesia and headache.

Conclusion

As a rare complication of an already infrequent disease, brain metastases from anal cancer are seldom presented in literature. Many, if not most, clinicians may never encounter such a scenario. However, given the apparent poor prognosis and impact upon quality of life the possibility of cerebral disease should be considered when managing patients with anal cancer. Signs and symptoms from brain metastases understandably vary within the reported literature. Clinicians treating patients with anal cancer should consider the possibility of brain metastases if a patient reports unusual neurological symptoms, especially in the presence of other poor prognostic factors at presentation such as node positive disease. Early recognition of brain metastases may facilitate early treatment and improved quality of life for these patients.

References

1. Minsky BD, Welton ML, Pineda CE, Fisher GA. 42 - Cancer of the Anal Canal. In: Hoppe RT, Phillips TL, Roach M, editors. *Leibel and Phillips Textbook of Radiation Oncology (Third Edition)*. Philadelphia: W.B. Saunders; 2010;870-82.
2. Scholefield JH, Nugent KP. Anal cancer. Position statement of the Association of Coloproctology of Great Britain and Ireland introduction. *Colorectal Dis.* 2011;13:1-2.
3. Hernando-Cubero J, Alonso-Orduña V, Hernandez-Garcia A, AC DEM, Alvarez-Garcia N, Anton-Torres A. Brain metastasis in basaloid undifferentiated anal carcinoma: A case report. *Oncol Lett.* 2014;7(4):1276-8.
4. Austin Gassman A, Fernando E, Holmes CJ, Kapur U, Eberhardt JM.

- Development of cerebral metastasis after medical and surgical treatment of anal squamous cell carcinoma. *Case Rep Oncol Med.* 2012;2012:912178.
5. Rughani AI, Lin C, Tranmer BI, Wilson JT. Anal cancer with cerebral metastasis: A case report. *J Neurooncol.* 2011;101(1):141-3.
 6. Davidson NG, Yong PP. Brain metastasis from basaloid carcinoma of the anal canal 8 years after abdominoperineal resection. *Eur J Surg Oncol.* 1991;17(2):227-30.
 7. Klotz RG, Jr., Pamukcoglu T, Souillard DH. Transitional cloacogenic carcinoma of the anal canal. Clinicopathologic study of three hundred seventy-three cases. *Cancer.* 1967;20(10):1727-45.
 8. Uronis HE, Bendell JC. Anal cancer: An overview. *Oncologist.* 2007;12(5):524-34.
 9. Ciombor KK, Ernst RD, Brown G. Diagnosis and diagnostic imaging of anal canal cancer. *Surg Oncol Clin N Am.* 2017;26(1):45-55.
 10. Geh I, Gollins S, Renehan A, Scholefield J, Goh V, Prezzi D, et al. Association of Coloproctology of Great Britain & Ireland (ACPGBI): Guidelines for the Management of Cancer of the Colon, Rectum and Anus (2017) - Anal Cancer. *Colorectal Dis.* 2017;19:82-97.
 11. Aggarwal A, Duke S, Glynne-Jones R. Anal cancer: are we making progress? *Curr Oncol Rep.* 2013;15(2):170-81.
 12. Nigro ND, Vaitkevicius VK, Considine B, Jr. Combined therapy for cancer of the anal canal: A preliminary report. *Dis Colon Rectum.* 1974;17(3):354-6.
 13. Northover J, Glynne-Jones R, Sebag-Montefiore D, James R, Meadows H, Wan S, et al. Chemoradiation for the treatment of epidermoid anal cancer: 13-year follow-up of the first randomised UKCCCR Anal Cancer Trial (ACT I). *Br J Cancer.* 2010;102(7):1123-8.
 14. James RD, Glynne-Jones R, Meadows HM, Cunningham D, Myint AS, Saunders MP, et al. Mitomycin or cisplatin chemoradiation with or without maintenance chemotherapy for treatment of squamous-cell carcinoma of the anus (ACT II): A randomised, phase 3, open-label, 2 × 2 factorial trial. *Lancet Oncol.* 2013;14(6):516-24.
 15. Peiffert D, Tournier-Rangeard L, Gérard JP, Lemanski C, François E, Giovannini M, et al. Induction chemotherapy and dose intensification of the radiation boost in locally advanced anal canal carcinoma: final analysis of the randomized UNICANCER ACCORD 03 trial. *J Clin Oncol.* 2012;30(16):1941-8.
 16. Myint AS. Follow up. *Colorectal Dis.* 2011;13:39-43.