Pyogenic Granuloma or?? Beyond the Naked Eye: Merkel Cell Carcinoma; Case Report and Literature Review

Charandeep Singh* and Fuad Aftab
Department of General Surgery, Mallow General Hospital, Ireland

Abstract

Introduction: Merkel cell carcinoma (MCC) is a rare and highly aggressive primary cutaneous neuroendocrine carcinoma, most often occurring at an elderly age group. Recurrence is frequent and in 40% of cases regional and distant metastases develop. We report the case of excision of MCC in a 85-year-old woman followed by wide excision and sentinel lymph node biopsy.

Case Presentation: An 85-year-old woman presented to surgical out-patient clinic with a firm fleshy, protuberant lump on the superior margin of right zygomatic area of face measuring 20 x 20mm, approximately. She was under investigation for Iron Deficiency Anemia along with high WBC. The lesion was excised under local anesthesia and immunohistochemistry confirmed diagnosis of MCC. Upon histological confirmation of diagnosis, the patient underwent further staging, to exclude regional and distant metastasis, including CT scan of the neck and TAP. Further treatment included wide local excision and sentinel lymph node mapping.

Discussion: MCC is rare carcinoma with very few known causes. Immune suppression is proposed as an etiological factor. Surgery has a major role with radiotherapy and chemotherapy playing their roles for palliation.

Conclusion: MCC is very aggressive cutaneous carcinoma with poor prognosis and high mortality rate, with life expectancy of 8-10 months from the time of distant diagnosis. Radiotherapy has a role but surgery still is the Gold Standard. Due to rarity of this disease, we feel that these patients need to be under strict follow-up program.
outpatients (SOPD) at our hospital for further management of an eight-week history of a skin lesion on right cheek. Past medical history included hypertension, hypercholesterolemia, osteo-arthritis, peptic ulcer disease (PUD), and diverticular disease. Patient was also under investigation for Iron deficiency anemia and slightly raised white cell count (WCC; 12-14.5) by bone marrow biopsy. Past surgical history included appendectomy and right total hip replacement (THR). Blood biochemistries (renal profile, liver profile, CEA, CA 12.5) were normal. On physical examination, on the superior margin of right zygomatic area around 2 x 2 cm, red coloured skin lesion was noted. It was non-tender, firm, not fixed to underlying tissue, and with no surrounding skin changes. Initial diagnosis was made a cystic lesion of the right cheek or a pyogenic granuloma. She was admitted as a day-case for excision of a relatively innocuous appearing skin lesion under local anesthesia. Histology report revealed absence of disease in the re-excised skin sample and also both sentinel and non sentinel lymph node specimens. Patient was discharged home the same day and is currently awaiting radiotherapy to the cheek.

**Discussion**

Merkel Cell Carcinoma (MCC) is a rare and aggressive primary anaplastic undifferentiated neuroendocrine carcinoma of the skin arising from uncontrolled proliferation of the neuroendocrine and mechanoreceptor Merkel Cells located in the epidermis of skin with an overall unfavorable prognosis. It generally occurs in elderly patients (age >50 years). It generally affects both sexes of fair skin population but with a male predominance. Areas of skin mostly exposed to sun-light are at higher risk such as head and neck (50%), upper and lower limbs (35%-40%) and less than 10% in the trunk.

Due to its rarity, the etiology of this carcinoma still remains unclear. However, immune suppression i.e., HIV patients and transplant recipients with 50% cases in age< 50 years) [17], ultraviolet radiation (high sun-exposed and/or psoriasis patients treated with UV light) [15] and Merkel Cell Polyomavirus (MCV) being put forward as aetiological factors. The latter is a double stranded DNA virus, which causes uncontrollable mitosis. It is present in about 80% of MCC cases [16]. But still there is a debate as there is lack of sufficient data and evidence for the above mentioned etiology. There are reports of MCV positive with MCC negative in patients. 20% MCC cases are negative with MCV.

On examination, MCC presents as a firm, bluish-red skin lesion, generally less than 2 cm in diameter. The tumor is centered in the dermis or sometimes in the subcutaneous tissue, with the overlying epidermis being usually not involved [18]. MCC presents locally (70%–80%), followed by regional lymph node involvement (9%–26%) and rarely as extra nodal distant metastasis (1%–4%) [3].

MCC is occasionally mistaken for other cutaneous neoplasms, such as a cystic lesion, malignant melanoma, or lymphoma [19]. Electron Microscopy is ideal to exclude these lesions which also feature intra-cytoplasmic neurosecretory/neuroendocrine granules [1,4]. As it is a rare type of skin tumor, with a few reported cases, there is no definite treatment protocol for such aggressive carcinoma. Surgical excision remains the gold standard with clear margins of 2-3 centimeters been accepted. Therapeutic modalities such as chemotherapy, radiotherapy, are also an option, but it is dependent on the stage of the disease [4]. A few studies have shown no significant difference between surgeries alone vs. postoperative radiation but it would be beneficial in cases where free surgical margins are hard to obtain due to cosmetic reasons [11].

In case of nodal involvement, therapeutic lymphadenectomy and postoperative radiotherapy must be considered. Due to this high incidence of metastasis, prophylactic lymphadenectomy is advocated in order to improve outcome [24,25]. However, prophylactic lymphadenectomy is associated with high morbidity. In order to avoid this, sentinel node status was evaluated and a sentinel node biopsy was performed for diagnosis, management and further treatment [11,22,23]. Presence of regional lymph node involvement markedly decreases overall survival from 90% to 50%, a frequent occurrence in 50%-70% of all patients within 24 months from the time of clinical diagnosis [20].

Regional metastases are very common followed by distant metastases (lung, brain, liver). Treatment of MCC with distal metastases consists of palliative radiotherapy and chemotherapy. Overall prognosis of this disease is very poor. Mortality ensues within

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<th>Table 1: Clinical features of MCC [4].</th>
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<td>E Expanding rapidly</td>
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<tr>
<td>I Immune system suppression</td>
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<td>O Older than 50 years</td>
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<td>U Ultraviolet exposure (fair skinned)</td>
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<th>Table 2: Merkel Cell Carcinoma Staging [11].</th>
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<td>Stage 0</td>
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8 to 10 months from the time of diagnosis of metastatic disease. Several studies have not shown a favorable response of radiotherapy and chemo therapy on metastatic disease [21].

**Conclusion**

Merkel cell carcinoma (MCC) is a very aggressive carcinoma. Therefore, in the elderly (above 50 years old) MCC must be out ruled. A detailed history, including a relatively short growth phase of a rapidly expanding, red-bluish color skin tumor, in an immunocompromised patient, with sun exposure should be taken into account. If wide excision is not possible, then biopsy is essential for diagnosis and subsequent management. Therapeutic options vary depending on the stage of the disease. Surgery remains the gold-standard procedure with 2-3 cm of clear margins. Staging includes Computerized Axial Tomography (CT scan), Magnetic Resonance Imaging (MRI) are utilized for distant metastases and lymph nodal involvement, respectively. Sentinel Lymph Node Biopsy (SLNB) should always be considered. If lymph nodes are involved, then lymphadenectomy is the procedure of choice, followed by radiotherapy/chemo therapy. The role of radiotherapy in distant metastases remains unclear. MCC has high tendency to recur locally (27%-60%), followed by lymph node involvement (45%-91%), and metastases 20%-90%). Although, less frequent than melanoma, it compromises of 0.25% of all melanomas, the mortality is 1 in 3 as compared to 1 in 6 in melanomas. Due to its poor prognosis patient survival period is 8-10 months. Therefore, we propose once diagnosed, the patient should be under strict follow-up program. Immune suppression is proposed as an aetiological factor. We further propose that immune suppression may be considered as a promoter rather as an aetiological factor.

**References**

15. Fernández-Figueras MT, Puig L, Musulén E, Gilaberte M, Lerma E,


