

## Treatment of Cytotoxic Chemotherapy after PD-L1 Inhibitor for Metastatic Merkel Cell Carcinoma

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**Background:** Merkel cell carcinoma (MCC) a rare aggressive skin cancer, also known as primary neuroendocrine carcinoma of the skin, occurring in 3 per 1,000,000 people. MCC has a very poor 5-year survival of 19% in distant metastasis. Herin, we present a case report of a metastatic MCC treated with first line PD-L1 inhibitors followed by conventional cytotoxic chemotherapy, leading to complete response.

**Case:** A 79-year-old man was referred to our outpatient clinic, with a protruding mass of 5 x 3 cm on his left iliac area, and 5 x 2 cm mass near his anus, and 2 x 1.5 cm mass on his left lateral gluteus. He had no underlying disease, but a heavy smoker of 60 pack-years. On admission, his abdominal pelvis computerized tomography confirmed the masses above with and metastatic lymph nodes (LNs) in the left common, external and internal iliac areas (Fig.1A). An incisional biopsy was performed, where CD56 and S-100 was positive and negative, respectively, confirming MCC. As the patient was diagnosed with a stage IV (T3N1M1a), systemic chemotherapy was considered. According to the National Comprehensive Cancer Network guideline, a PD-L1 inhibitor should be considered as the first line treatment. As our hospital was under the refined diagnosis-related group policy, we were able to administer avelumab as the first line treatment. However, after 4 cycles of avelumab, the left anterior mass progressed with LN progression (Fig.1B) and the patient complained edema and circulation problems of the left leg. As this condition could not be seen as pseudo-progression, second line treatment of doxorubicin and cisplatin was administered. After 3 cycles of chemotherapy, the cancer went into complete regression (Fig.1C).

**Conclusion:** There are no known definite treatments for MCC due to the lack of randomized trials or prospective studies. In several reported cases, first line chemotherapy followed by second line immunotherapies have resulted in a short life span of 11.3 months due to poor responses. However, first line PD-L1 therapy followed by cytotoxic therapy may have more favorable responses as in our case due to complete responses.

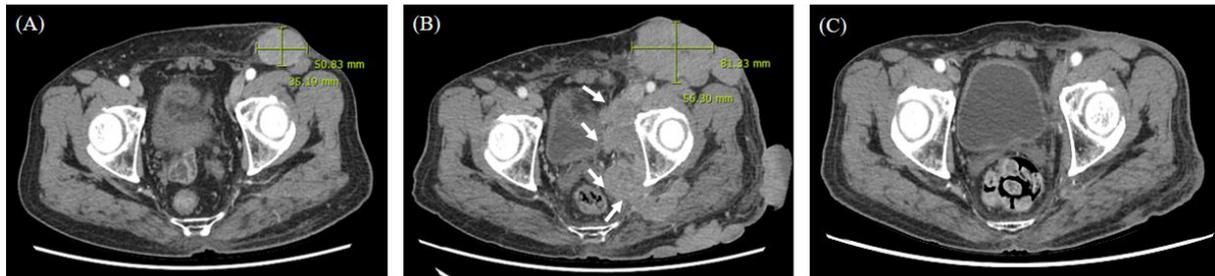


Figure 1. Initial abdominal pelvis computerized tomography before first line treatment, a subcutaneous mass of 5.1 x 3.5cm in size was located in the left inguinal area (A), after 4 cycles of avelumab, the mass in the left inguinal area progressed to 8.1 x 5.6cm in size and metastatic cancer develop in the pelvic cavity (in white arrows) (B), after 3 cycles of doxorubicin and cisplatin, the initial mass and pelvis metastasis with complete regression (C).