Surgical Management of Merkel Cell Carcinoma

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Merkel cell carcinoma (MCC) is a rare skin cancer with a rapidly increasing incidence worldwide. Compared to other skin cancers, it has among the highest mortality rates. Because MCC tends to spread quickly to nearby lymph nodes, the current National Comprehensive Cancer Center Network (NCCN) guidelines recommend either wide local excision (WLE) with 1 to 2 cm margins, narrow-margin excision (NME) with ≤1 cm margins if radiation therapy (RT) following surgery is targeting the primary site, or Mohs micrographic surgery (MMS) for treatment of the primary tumor. Sentinel lymph node biopsy (SLNB) is recommended for all patients who are surgical candidates.

Current guidelines also recommend the use of RT to the site of the tumor following surgery for patients who did not have lymph node involvement but have one or more baseline risk factors, including a primary tumor larger than 1 cm, chronic suppression of the immune system, HIV, chronic lymphocytic leukemia, solid organ transplant, or a tumor on the head or neck, for treatment of possible remaining disease.

Historically, most MCC have been treated with WLE with or without RT afterward, and it is generally accepted that the most effective treatment option for localized disease is surgery. However, current guidelines do not suggest whether WLE or MMS is the preferred surgical approach, and inconsistencies remain among studies. Prior studies have shown no overall survival benefit for WLE compared to MMS. Moreover, recurrence and progression have appeared comparable between WLE and MMS.

One study investigating 6,470 cases of MCC demonstrated that the most common surgical approach was WLE (57.8%). Pathologic lymph node evaluation was performed for 46.0% of cases treated with MMS, compared to 74.3% of those treated with WLE and 72.9% of those treated with NME. Recent studies have shown that MCC patients with head and neck lesions, who are more likely to undergo MCC compared to WLE, are significantly less likely to undergo SLNB. However, results demonstrate that SLNB was associated with improved overall survival in patients undergoing both MMS and WLE.

Studies of cases treated with MMS have not demonstrated a similar improvement in local control or overall survival with the use of RT following surgery. One study evaluating the outcomes of stage I and II MCC treated with MMS without RT following surgery demonstrated improved local control and similar survival outcomes compared with those treated with WLE and RT following surgery. Complete clearance of the primary tumor via MMS may prevent the need for RT. Though MMS for MCC is an effective approach, it is not widely performed by all Mohs surgeons and continues to significantly trail WLE in use for MCC.

An additional study analyzing 1,368 patients treated with WLE and 291 patients treated with MMS demonstrated that patients who underwent MMS had no statistically significant difference in overall survival at 1, 3, 5, or 10 years compared to those treated with WLE. Minimal differences were seen in surgical complications in the perioperative period, with no difference in 30-day surgical site infection rate or bleeding rate following surgery. There was a slightly

increased rate in postoperative bruising in patients who underwent MMS compared to those who underwent WLE.

One study including 2,313 patients demonstrated that surgical removal of early stage MCC with MMS was associated with an approximately 40% reduction in hazard of death compared with WLE. These findings suggest that MMS may provide a survival advantage over WLE for localized tumors. Therefore, the optimal approach for MCC cases planned for treatment with MMS may be SLNB prior to surgery to prevent surgical disruption of local lymph node drainage. Future studies are needed to investigate the benefit of RT following surgery in localized cases treated with MMS.

Despite ongoing inconsistencies surrounding the best surgical approach, MMS does provide benefits and should be considered for the treatment of MCC if SLNB can be performed prior to surgery. MMS evaluates nearly 100% of the margins, while WLE only evaluates a small minority of the margins. Prior MCC outcome studies have demonstrated higher recurrence rates, higher rates of distant spread, and worse survival for positive margins following surgery. Because MMS offers the unique advantage of complete margin assessment, it therefore has the greatest potential for primary tumor clearance surgically.

References

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