Spinal epidural metastases

see also Spinal metastases.

Spinal epidural metastases can cause spinal cord compression either by epidural growth that results in extrinsic spinal cord or cauda equina compression or less frequently by intradural invasion.

Diagnosis

see Spinal metastases diagnosis

From glioblastoma

It is generally accepted that the metastases of intracranial glioma to extracranial location are rare. In such a case the minimal criteria proposed originally by Weiss should usually be satisfied if a report is to be considered as an acceptable case of metastasizing central nervous system glioma outside the central nervous system.

A patient was a 32-year-old male, who underwent craniotomy and subtotal removal of a glioblastoma multiforme in the left parietooccipital area. He was additionally treated with irradiation and chemotherapeutic agents. Twelve months after the craniotomy, he was admitted again because of sudden onset of severe lumbago, paraplegia and urinary disturbance. Diagnosis of a spinal epidural tumor was made and laminectomy (Th10-L1) was performed. At operation, an epidural mass was found, however no invasion to the spinal cord or dura was noted. Histological diagnosis of the tumor was glioblastoma multiforme. Although he was treated with radiation, pulmonary metastasis was manifested one month later, and the condition of the patient deteriorated. He died 21 months after the first operation and 8 months after the second operation. Even at the terminal stage, his consciousness was clear without any sign for recurrence of intracranial tumor. The general autopsy was done and multiple metastatic lesions of glioblastoma multiforme in paratracheal and paraaortic lymph node, left pleura, both lungs and spinal cord were observed. The present case suggests that the surgical intervention, irradiation, and chemotherapy may contribute to extracranial metastasis of a glioblastoma [1)].

Case series

2015

The records of 110 consecutive patients who were referred with a spinal epidural metastasis were collected prospectively from 2009 to 2013 in order to validate the model, which was published in 2011 [2)]. The actual and estimated life expectancies were represented graphically, and calibration and discrimination were determined. The calibration slope, Harrell's c-index, D, and Formula were calculated. Hazard ratios in the derivation set of 2011 were compared with the validation set. Misspecification was determined using the joint test for β*.

The calibration slope was 0.64 ± 0.15 (95% CI: 0.34-0.94), Harrell's c-index was 0.72, D was 1.08, and [Formula: see text] was 0.22, indicating slightly worse discrimination in the derivation set. The joint test for β* = 0 was statistically significant and indicated misspecification; however, this misspecification was attributed entirely to the surgical group.

Bartels et al. validated a prediction model for surgical decision making, showing that the model's overall performance is good. Based on these results, this model will help clinicians to decide whether to offer surgery to patients with spinal epidural metastasis [3].

A consecutive series of 101 patients managed over the period of 3 years for ESCC due to spinal metastases in a tertiary spine surgery referral unit were included. METHODS: Data on age, gender, revised Tokuhashi score, preoperative Frankel grade, tumor histology, magnetic resonance imaging scan-based Bilsky cord compression grade, postoperative Frankel grade at last follow-up, complications, and survivorship were collected. OUTCOME MEASURES: Frankel grading system for function was used to evaluate the patient's preoperative and postoperative neurologic status. Patient survival and postoperative complications were also collected. RESULTS: Average patient age was 64.7 years (13-88 years): 62 males and 39 females. Mean follow-up was 7.3 months (3-23.3 months). Most primary tumors were in prostate, breast, renal, lung, and the blood dyscrasias. Within the lower grade of compression (Group 1; Bilsky Grades 0,1a, 1b, and 1c; n=40), 29 patients (72.5%) had no improvement in Frankel grade, seven patients (17.5%) improved, whereas four patients (10%) deteriorated neurologically after surgery. Within the higher compression grade (Group 2; Bilsky Grades 2 and 3; n=61), 37 patients (60%) did not experience neurologic change, 20 (33%) improved, whereas neurology worsened in four patients (7%). When compared with Group 2 patients, Group 1 patients had better preoperative Frankel scores but a greater number of patients in Group 2 improved their Frankel scores significantly postoperatively. The mean revised Tokuhashi score for Groups 1 and 2 was 10 and 9.1, respectively (p=.1). The complication rate for Groups 1 and 2 was 25% and 42.6%, respectively (p=.052). Survival analysis showed no difference between the groups (Group 1: median 376 days [12-1052]; Group 2: median 326 days [12-979]; p=.62). CONCLUSIONS: Surgery can achieve improvements in neurology even in higher grades of cord compression. There is a trend toward more complications and worse survival with spinal surgery in patients with higher grades of compression [4].

1987

Hagenau et al. compared spinal magnetic resonance imaging (MRI) with conventional myelography in a series of 31 cancer patients being evaluated for myelopathy (N = 10), or back/radicular pain (N = 21). All patients were evaluated between April 1985 and July 1986, and underwent both studies within ten days of each other (median, two days). MRI was performed on a 0.5 Tesla Technicare unit with a body surface coil, and results compared with standard contrast myelography. All studies were reviewed separately and in a “blinded” fashion. MRI and myelography were comparable in detecting large lesions that produced complete subarachnoid block (five of ten patients with myelopathy, three of twenty-one patients with back/radicular pain). In 19 of 31 patients, smaller but clinically significant extradural lesions were found. In nine of 19 cases, these lesions were demonstrated equally well by both modalities; in nine of 19 cases, these lesions were demonstrated by myelography alone; in one of 19, a lesion was demonstrated by MRI alone. Given our current technology, myelography appeared superior to MRI as a single imaging modality. However, MRI may be an alternative in patients where total myelography is technically impossible or unusually hazardous [5]

1)

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2)

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4)

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5)

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