Clinical Study

**Primary intramedullary spinal melanoma: Diagnostic and treatment problems**

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Summary

A 76-year-old female patient with 9 year history of right mastectomy for an infiltrating ductal breast cancer and no evidence of recurrent nor metastatic disease, was admitted due to pain in the lower thoracic area radiating bilaterally to the posterior aspect of the chest wall at the same level, difficulties in micturition, urinary hesitancy, and progressive weakness of the lower limbs. Primary intramedullary spinal tumor was demonstrated by a MRI study of the spine, partially resected, and found to be a malignant melanoma on pathological study. Postoperative irradiation and administration of dexamethasone did not improve the neurologic status.

Introduction

Melanoma is a common malignancy with an increasing incidence, originating mainly from skin melanocytes and pigmented tissues of the eye. Rarely, it may develop in mucous membranes, intestinal, esophageal or vulvar mucosa, or from structures related to the central nervous system, such as meninges. The occurrence of primary spinal intramedullary melanoma is extremely rare, and only a few cases have been reported in the literature [1–3]. The uniqueness of the present case is the development of primary intraspinal melanoma, as a second primary malignancy in a very unusual site, in a breast cancer patient, necessitating a thorough work-up and differential diagnosis.

Case presentation

A 76-year-old female patient had a medical history of thromboembolic stroke in the right hemisphere in 1993 followed by complete rehabilitation, hysterectomy for a myoma in 1970, parathyroidectomy for parathyroid adenoma in 1985, right mastectomy for T+N in 1985, infiltrating ductal breast cancer in 1985, and no evidence of metastatic breast cancer. She was admitted to the emergency room in February 1994 because of one-day paralysis of her lower limbs and urinary retention. The patient reported pain in the lower thoracic area radiating bilaterally to the posterior aspect of the chest wall at the same level, difficulties in micturition, urinary hesitancy, and progressive weakness of the lower limbs for six months before admission. Brain CT, performed 2 months before admission, showed mild cortical atrophy, lacunar infarction in the right internal capsule, and an old infarction in the left occipital area. A lumbar spine CT scan (November 1993) showed vertebral degenerative changes and osteoporosis. The spinal canal was of normal size. The intervertebral foramina were normal, but there was an irregular trabecular pattern with small hypodense areas in vertebral bodies D12, L1 and L2. Neurolog-
Figure 1. T1 weighted MR cuts (SE 450-500/30-32) performed on Elscint gyrex 0.5T. (a) The sagittal 4 mm cut shows a hyperintense intramedullary lesion that expands the cord of the level of D9–D10. Its size is $3 \times 1.4 \times 2.5$ cm, and the margins are irregular. The adjacent cord is swollen. (b) Following gadolinium injection: sharp delineation of the markedly enhanced lesion is evident. Note the relatively hypointense center compatible with intratumoral necrosis.

Physical examination on admission revealed left arm paresis (4/5), spastic paraplegia (0/5), symmetrically brisk tendon reflexes in the lower limbs, bilateral extensor plantar reflexes, complete anesthesia and impaired sensation of position and vibration compatible with damage at D11-level, and anal and bladder sphincter incontinence. Blood count and chemistry profile were unremarkable. Plain chest film was within the normal limits. Plain X-rays of the spine demonstrated severe diffuse spondyloarthrotic changes and osteoporosis in the cervical, thoracic and lumbar segments. The spinal canal was widened in the lower thoracic segment. No fractures of the vertebral bodies nor erosion of the pedicles were noted. Bone scan demonstrated only weak uptake of the radioisotope in the vertebrae, suggestive of degenerative changes. MRI studies (T1 weighted images, SE 450/30, sagittal 4-mm thick cuts) demonstrated an intramedullary hyperintense lesion, $3 \times 1.4 \times 2.5$ cm in size, at the level of D9–D10 vertebrae. The cord was slightly swollen at the levels of D8–D12. Following Gadolinium DTPA injection there was an irregular enhancement of the lesion with a relatively hypointense area within it. The intraaxial location was depicted on sagittal (Figure 1a, b), coronal and axial cuts. The findings were compatible with an intramedullary tumor with intratumoral bleeding. Surgery was carried out with the patient in the prone position. Through a midline incision in the lower thoracic back, laminectomy of D9, D10 and D11 was performed. There were no pathological findings in the extravertebral soft tis-