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BMH Med. J. 2020;7(1):11-14. **Case Report**

A Case Of Renal Cell Carcinoma Presenting As Paraparesis With Bowel Bladder Involvment Secondary To Intramedullary Spinal Cord Metastasis (IMSCM)

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Introduction

Carcinoma metastases of the spinal cord are rare diseases; the least frequent of which, is intramedullary spinal cord metastasis (ISCM) [1,2]. The common primary tumors of ISCM are from the lung, breast and melanoma whereas lymphoma, kidney, colon and thyroid are less common sites [3-5]. There are only a few histologically confirmed reports of ISCM with renal cell carcinoma primaries [6-8]. Symptoms from ISCM metastasis being the initial presentation is even more rare occurrence. As ISCMs are rare and there are no pathognomonic symptoms, diagnosis is often unduly delayed [9]. ISCMs are generally associated with poor survival.

Case Report

Elderly female presented with complaints of progressively increasing weakness of both lower limbs of 2 days duration and urinary incontinence of one day duration. On examination she had paraparesis with Grade 3/5 power on bilateral lower limbs with no sensory deficits and normal DTR. She had multiple firm swellings on scalp which she noticed 1 week prior to being paraplegic, for which a dermatologist was consulted and biopsy taken. MRI of spine was suggested when she presented with weakness which revealed two intramedullary enhancing lesions one at D2-D3 level and D12-L1 level and one intradural mass at L5-S1 level suggestive of metastatic lesions (**Figure 1**). MRI also showed a large heterogeneous lesion over lower pole of left kidney. Scalp biopsy was reported as cutaneous metastasis from renal cell carcinoma. PET scan was done which showed multiple metastasis involving brain, spinal cord, lymph node, lung and scalp (**Figure 2**). As there were multiple lesions in the spinal cord it was decided to proceed with local radiation therapy. She was treated with local spine radiation therapy. After 4 cycles of RT her neurological deficit improved slightly. The bladder control was regained.

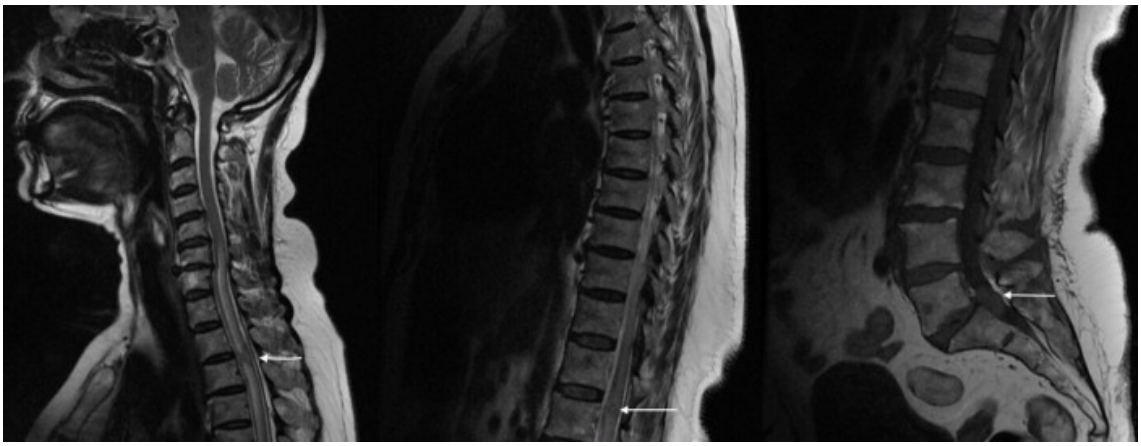

Figure 1: MRI Spine showing intramedullary enhancing lesions, one at D2-D3 level and another at D12-L1 level and an intradural mass at L5-S1 level

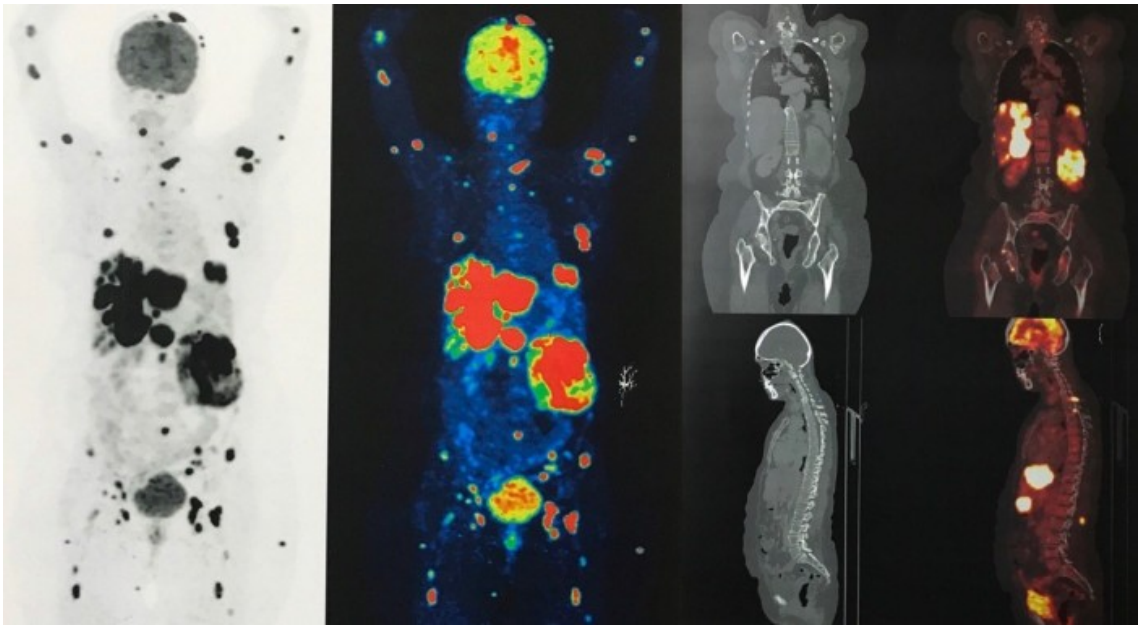

Figure 2: PET Scan showing multiple metastasis involving brain, spinal cord, lymph node, axilla, mediastinum, lung, pelvis and scalp

Discussion

Almost 70% of patients with systemic neoplasia also have spinal metastasis. Only 0.5% of such spinal axis metastasis are intramedullary lesions [10]. Patients with concomitant brain metastasis are the ones who have such lesions [11]. It is rare for a disseminated carcinoma to have intramedullary spinal cord metastasis as the presenting feature [12]. ISCMs most commonly arise from lung and breast cancer and only 4%-9% arise from RCC [13, 14]. There are three pathways through which RCC metastasis to the spinal cord parenchyma occurs [13]. Most commonly, it occurs via hematogenous spread through the artery or vertebral venous plexus (Batson's venous plexus). In the second method, the Virchow-Robin spaces of the vessels are infiltrated by tumor cells originating from carcinomatous meningitis, which then penetrate the pial membrane and invade the spinal cord parenchyma. The third mechanism is direct invasion from contiguous structures. In our case, hematogenous spread can be a reasonable mechanism. ISCM usually presents with pain, weakness, sensory deficits and bowel/bladder dysfunction. Pain and weakness are the most common complaints as reported by Germ et al. Bowel and bladder dysfunctions are rare in the early period, which was seen in our patient [15]. Presence of ISCM is a poor prognostic indicator. Germ et al found that more than 80% of patients with ISCM died within 3 months [15]. Treatment is mostly undertaken to relieve pain and to preserve or stabilize neurologic function. Several therapeutic modalities are available including medical, radiotherapy and surgical interventions ranging from

radical, open excision through minimally invasive surgery such as endoscopy to ultraminimal/noninvasive spinal radiosurgery [10]. Focal radiotherapy has been effective in arresting tumor growth and preventing further neurological deficit [16] and is used as the first line treatment modality, despite the radio-resistance of RCC itself, mainly due to the absence of effective systemic therapy for metastatic RCC and short life expectancy which is estimated at 3 to 9 months [17,18]. However, surgical management is an effective procedure in cases with solitary lesion and rapidly progressing but incomplete neurological deficits [19]. Strategic planning with multidisciplinary approach is required for successful palliation and better quality of life.

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