wjpmr, 2019,5(11), 28-30

SJIF Impact Factor: 5.922

WORLD JOURNAL OF PHARMACEUTICAL AND MEDICAL RESEARCH

www.wjpmr.com

Case Report

ISSN 2455-3301

WJPMR

CASE OF INTRAMEDULLARY SPINAL CORD METASTASIS OF BREAST CARCINOMA

Dr. Imane Bourhafour*[1], Iliass EL Alami[2], Mohamed Amine Azami[3], Mohamed Ichou[2], Tayeb Kebdani[1] and Nourddine Benjaafar[1]

[1]Department of Radiotherapy, National Institute of Oncology, Rabat, Morocco.
[2]Departments of Medical Oncology, Military Hospital Med V, Rabat, Morocco.
[3]Department of Pathology, Military Hospital Mohamed V, Rabat, Morocco.

***Corresponding Author: Dr. Imane Bourhafour**

Department of Radiotherapy, National Institute of Oncology, Rabat, Morocco.

Article Received on 29/08/2019 **Article Revised on 19/09/2019** **Article Accepted on 09/10/2019**

ABSTRACT

The intramedullary spinal cord metastasis is extremely rare and represents 8,5% of central nervous system metastasis. We report a case of intramedullary spinal cord metastasis, in a 50 years-old patient with metastatic breast carcinoma, diagnosed by magnetic resonance imaging and treated with Systemic corticosteroid therapy and palliative radiation. Through this paper, we aim to bring to literature a new case of intramedullary spinal cord metastasis of breast cancer, while developing the clinical presentation, diagnostic modalities and the management of this rare lesion.

KEYWORDS: Intramedullary spinal cord metastasis, breast carcinoma.

INTRODUCTION

Breast cancer is the most common form of cancer in Moroccan females. Distant metastasis is common. But intramedullary spinal cord metastasis remains an unusual type. Incidence is reported as 8,5% of all central nervous system metastasis and 0.9%–5% of all spinal cord metastasis,[1,2] in the literature.

Most often discovered at an advanced stage with several metastases, symptoms of intramedullary spinal cord metastasis are rapid and aggressive, the diagnosis is based on magnetic resonance imaging. However, because of their rarity, no standard therapeutic regime has been developed and the prognosis remains poor.

Through an observation of intramedullary spinal cord metastasis in a patient with breast cancer, we present a recent systematic literature review regarding the clinical presentation, diagnostic modalities and the management of this rare metastasis.

CASE REPORT

We present a case of a 50 year-old female, who was under palliative chemotherapy for a history of a right breast carcinoma, with lung and bone metastasis approximately two years previously with stable disease.

After she completed three cycles of chemotherapy with Docetaxel (100 mg/m2 every three weeks), she was admitted with numbness and aching pain of both lower extremities associated with weakness and a intense headache that had been progressive over the previous two months and development of paraparesis one week before presentation, Physical examination revealed paraparesis (left lower extremity: 3/5, right lower extremity: 3/5) in a conscious patient with OMS 3 with no other physical symptoms.

On her cerebral and spinal Magnetic resonance imaging, we detected an intramedullary and highly gadolinium-enhancing lesion with regular borders (Figure1) associated with two cerebral metastatic lesions.

Systemic corticosteroid therapy in parallel to a palliative antalgic Radiotherapy (5 fractions of a total of 20 Gray) to both of the brain and intramedullary lesion was performed, with no relief from pain.

The patient died three months after the progression of her disease.

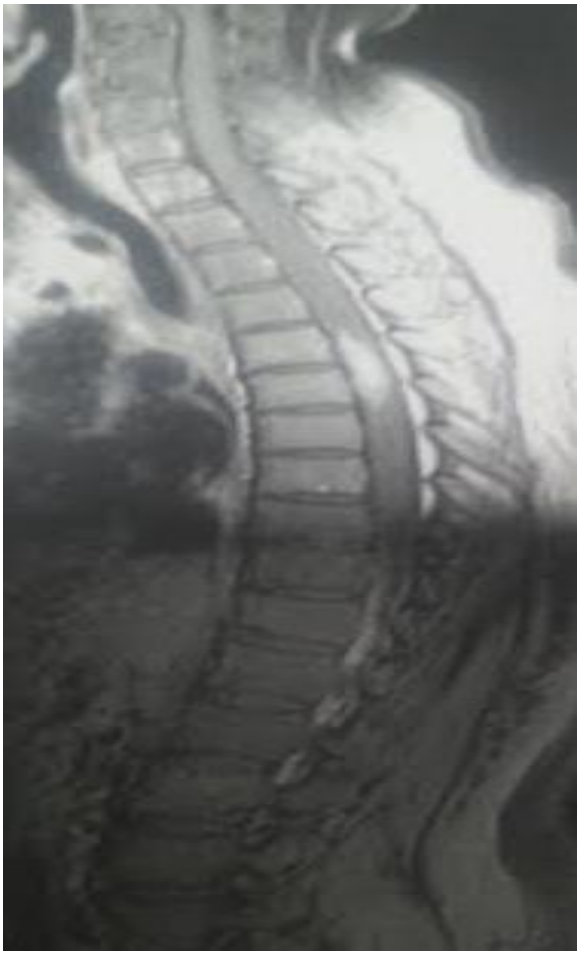

Figure 1: Spine magnetic resonance imaging showing solitary intramedullary nodular lesion.

DISCUSSION

Intramedullary spinal cord metastasis is a rare complication of cancer, affecting 0.1%–0.4% of all cancer patients. It accounts only 8,5% of all central nervous system metastasis and 0.9%–5% of all spinal cord metastasis.[1,2] Most commonly, this rare complication is secondary to lung cancer 48%, but it can also be seen in breast cancer 16%, kidney cancer, and lymphoma.[3]

First described by Buchholz and al. in 1897; Intramedullary spinal cord metastasis is most often discovered at an advanced stage with several metastases like in our patient with pulmonary, bone and cerebral localizations.[5]

Many pathogenetic mechanisms are suggested, haematogenous spread is believed to account for most cases; it is developed through systemic route (arterial or venous) or through the vertebral venous plexus; Although the spread of tumors to the spinal cord can be related to lepto-meningeal dissemination by the cerebrospinal fluid or by direct invasion from contiguous structures.[5]

In our case as in the literature, it is commonly seen on thoracic area (42%) and then on cervical area (31%).[6] In 2013, Rostami et al. reported in a review article that so far there are 85 cases that have breast malignancy as the primary cancer. The localization is detectable in 52 cases (62%). 45 patients have solitary lesions and 17 of them have cervical (38%), 17 have thoracic (38%), and 11 have lumbar (24%) lesions.[7,8]

Clinically, Rostami et al reported that symptoms are rapid onset in less than a month, the most common are sensory loss (22.1%), pain (21%), weakness (21%) as well as sphincter disorders (12%).[7]

Cerebrospinal fluid examinations are frequently abnormal, with an elevated protein value, but they have much less value in the diagnosis of intramedullary spinal cord metastasis and it infrequently contains malignant cells.[7,10]

Nowadays, Magnetic resonance imaging is the gold standard method and the most sensitive and specific test for detection of intramedullary spinal cord metastasis,[11] it gives information on the nature of the lesion and its relation with adjacent tissues. The use of gadolinium-enhanced Magnetic resonance images has further improved sensitivity; Magnetic resonance imaging also helps for the planning of the surgery.

Treatment options for intramedullary spinal cord metastasis include radiation with or without steroid therapy, surgery, chemotherapy, immunotherapy, and targeted therapy. Because of the blood–brain barrier, chemotherapy is regarded as inappropriate for intramedullary spinal cord metastasis.[2,12] Immunotherapy lacks efficacy and produces serious adverse reactions; further clinical trials are needed.[12]

Moreover, the choice of the treatment had to take into account the general state of the patient, stage of the disease as well as the location and extent of the metastases.

Surgical resection is indicated in case of localized intramedullary spinal cord metastasis with a controlled primitive, with the aim at decompression of functional neural tissue, improvement of the neurological symptomatology and histological confirmation of tumor.[13]

Regarding radiation therapy, there are some reports of long-lasting remission after irradiation, but these are limited to patients in whom a very early diagnosis was made and/or who had highly radiosensitive tumors such as small-cell carcinoma or lymphoma.[14,15,16]

The place of chemotherapy remains unknown but depends on the primary tumor,[3] Weissman and Grossman,[17] have recommended treatment combining intrathecal chemotherapy and radiotherapy in patients

with intramedullary spinal cord metastasis from small cell carcinoma.

Prognosis of intramedullary spinal cord metastasis remains poor. The majority of patients have a poor life expectancy due to synchronous brain metastases and a poor performance status secondary to neurological deficits.

Like in our case, Germ et al.[14] found that more than 80% of patients died within 3 months.

CONCLUSION

Because of their rarity, intramedullary spinal cord metastasis is generally associated with unduly delayed diagnosis and poor survival, Treatment options include radiation therapy, surgery, chemotherapy, immunotherapy, and targeted therapy; however, there is no consensus on optimal treatment. More reports are needed to enable exploration of the mechanisms of this metastasis and the optimal forms of therapy. Waiting that, the primary objectives still is maintaining quality of life of these patients by using adequate supportive care.

REFERENCES

1. Phong Dam-Hieu et al, "Retrospective study of 19 patients with intramedullary spinal cord metastasis", Clinical Neurology and Neurosurgery, 2009; 111: 10–17.
2. Simas A., Sales K., Fragoso M., "Drop metastasis:" a rare diagnosis. A case report and review of literature", 2017; 78 (1): 23-25.
3. Ding D., Fullard M., Jarrell HS., Jones DE., "Intramedullary spinal cord metastasis from salivary ductal carcinoma of the parotid gland mimicking transverse myelitis in a patient with radiologically isolated syndrome", J Neurol Sci., 2014 Jan 15; 336(1-2): 265-8.
4. Buchholz F. Monatsschrijt fur Psychiatrie und Neurologie, 1897; 4: 183–90.
5. Mastaglia FL., Kakulas BA., "Intramedullary spinal cord metastasis from mammary carcinoma". Paraplegia, 1970; 8: 14–8.
6. Potti A., Abdel-Raheem M., Levitt R., Schell DA, Mehdi SA., "Intramedullary spinal cord metastases (ISCM) and non-small cell lung carcinoma (NSCLC)", clinical patterns, diagnosis and therapeutic considerations. Lung Cancer, 2001 Feb-Mar; 31(2- 3): 319-23. PubMed | Google Scholar.
7. Rostami R., et al., "Journal of the Neurological Sciences", 2013; 332: 16–20.
8. Basaran M., Tiryaki D., Yavuzer M., Efendioglu B., Aydin Sav, "Spinal Intramedullary Metastasis of Breast Cancer", Case Reports in Medicine, 2014.
9. Winkelmann MD., Adelstein DJ? Karlins NL., "Intramedullary spinal cord metastasis: Diagnostic and therapeutic considerations", Arch Neurol, 1987; 44: 526-531.
10. Hrabalek L., "Intramedullary Spinal Cord Metastases: Review Of The Literature", Biomed Pap Med Fac Univ Palacky Olomouc Czech Repub, 2010.
11. Do-Dai DD., Brooks MK., Goldkamp A., Erbay S., Bhadelia RA., "Magnetic resonance imaging of intramedullary spinal, cord lesions: a pictorial review", Curr Probl Diagn Radiol, 2010; 39: 160—85.
12. Yuxiang W., Renya Z., Jian S., Jianwei P., Hao J., Kaiyuan H., Kangli X., Hongguang H., "Intramedullary Spinal Cord Metastasis from Renal Cell Carcinoma: A Systematic Review of the Literature", BioMed Research International, 2018.
13. Findlay JM., Bernstein M., Vanderlinden RG., Resch L., "Microsurgical resection of solitary intramedullary spinal cord metastases", Neurosurgery, Dec 1987; 21(6): 911-5. PubMed | Google Scholar.
14. Grem J.L, al, "Clinical features and natural history of intramedullary spinal cord metastasis", Cancer, 1985; 56: 2305-2314.
15. Holoye P., Libnoch J., Cox J., et al, "Spinal cord metastasis in small cell carcinoma of the lung", Radiat Oncol Biol Phys, 1984; 10: 349-356.
16. Tognetti F., Lanzino G., Calbucci F., "Metastases of the spinal cord from remote neoplasms, Study of five cases", Surg Neurol, 1988; 30: 220-227.
17. Weissman DE., Grossman SA., "Simultaneous leptomeningeal and intramedullary spinal metastases in small cell lung carcinoma", Med Pediatr Oncol, 1986; 14: 54-56.