

# What can we do for Metastatic Spinal Tumors after Accepting the Percutaneous Vertebroplasty Combined with Interstitial Implantation of 125I Seeds: Palliative and Hospice Care

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## Abstract

Patients with metastatic spinal tumor need effective nursing strategies in palliative medicine. And the evidences on how to manage this specific patient accepted 125I seeds implanation plus percutaneous vertebroplasty in perioperative period. Actually, effective pain control towards the end of life is difficult to manage. Besides, ideal nursing strategies may help patient to acquire high quality of life in end stage of life.

**Keywords:** Metastatic spinal tumor; Nursing strategies; 125I seeds; Palliative care

## Introduction

Metastatic spinal tumors are most usual types of bone metastasis in spine vertebrae. And a novel therapeutic method has been used as a strategy of reliving pain and maintaining stability of spine [1]. However, there are many differences for these special patients who received percutaneous vertebroplasty combined with interstitial implantation of 125I seeds comparing with the patient accepting routine surgery. Especially, the nursing strategies for those patients who are accepting interstitial implantation of 125I seeds. Indeed, the palliative and hospice care is used to help patient adjust to the circumstance of survival with tumor [2,3]. Thus, this case report aims to share the nursing experiences of avoiding injury caused by radioactive particles for the nurse

## Case History

We presented a 49-year old man who was diagnosed with fourth thoracic vertebral body fracture caused by metastases of hepatocellular

carcinoma. The percutaneous vertebroplasty plus interstitial implantation of 125I seeds was used to relieve back pain and rebuild stability of spine. After accomplished minimally invasive surgery, back pain relieved in postoperative 3 days. However, the recurrence of back pain, progressive lower extremity weakness, and loss of bladder control became the chief complaints after postoperative 3 day. The majority of symptoms encompassed back pain and hypoesthesia below the *processus xiphoideus*. The abdominal reflex, the crissum and cremacteric reflex, and knee and ankle reflex could not be induced. No pathological reflection of Babinski's sign was induced. The major muscle force of both lower limbs were 3 grades and occurred progressively decreased in postoperative period. This patient died 5 months after surgery because of multiple organ failure.

## The nursing strategies

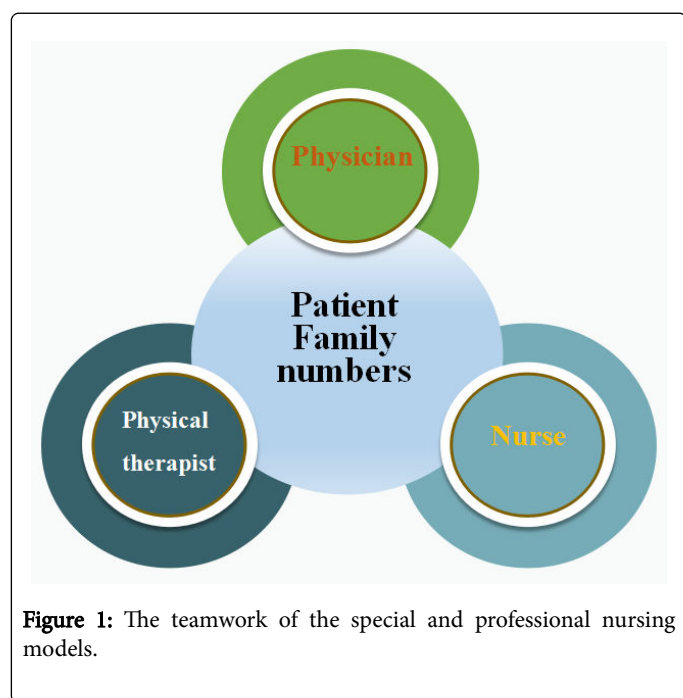
The nursing strategy includes routine professional care, palliative or hospice care, rehabilitation nursing, and radiation protection (Table 1).

Nursing Items	Details
Routine Professional Care	Health education and Dietary nursing.
	Drugs management and complication prevention.
	To formulate comprehensive strategies with physician and patient.
Palliative or Hospice Care	Pain management and pain evaluation basing on professional rating scales.
	Minimally invasive operation and rational therapeutic measurements.
	Spiritual care and end of life care pathway.

<b>Rehabilitation Nursing</b>	To guide the functional training and emotion management for patient.
	To complete the professional tasks with rehabilitation therapist.
	To build cooperation both medical personnel and patients with their family numbers.
<b>Radiation Protection</b>	To keep the safe distance between patient and nurse.
	To perform professional therapy with wearing protective clothing.
	To complete health education for family numbers of patient.

**Table 1:** The nursing strategies for patient with local radioactive therapy.

Indeed, the strategies emphasize the teamwork and cooperation without any separation (Figure 1).



**Figure 1:** The teamwork of the special and professional nursing models.

Routine professional care needs nurse to complete the professional therapeutic tasks such as nutrition support therapy, drug distribution, pain management, and vital sign monitoring. Besides, regularly change the site of body and perineum swabbing are the importance of similarity in order to preventing to appear the pressure sore, deep venous thrombosis, and urinary infection. Emphasizing pain management, especially, to acquire the satisfying effectiveness of analgesia or ease pain are the part of clinical work, which are used to performing enhancement of the quality of life of end-stage patient. Notably, these comprehensive methods decrease the complication of end-stage patient in term of careful observation and effective teamwork. In fact, the effective co-operations between the medical personnel and the family number of patient or patient can improve the effectiveness of treatment.

Palliative or hospice care as an important part of nursing work to which are paid the enough attention. Palliative care can acquire the better effectiveness of spinal metastasis in term of the minimally invasive surgery and other treatments, which are deemed as reasonable therapeutic methods for end-stage patient. However, hospice care do indicated that how to perform the emotion management and how to

guide end-life patient to relieve anxiety, and to accept death at ease. Actually, the spiritual nursing is a core component of hospice care to patient with no possibility of recovering health through end-stage therapy owing to promoting well-being, relieving pain and spiritual dimension.

Rehabilitation nursing strategies are also used to relieve pain and rebuild function of residual limb, which can reduce the incidence of deep venous thrombosis in lower extremities. Additionally, the rehabilitation nursing is viewed as a part of psychological nursing. Surely, this teamwork consists of physical therapist, psychologist, nurse, and clinician.

It is very important to avoiding radioactive injury for medical personnel and family numbers. Radiation protection includes the isolation for other patients and the usage of lead-rubber suit for medical personnel, especially, to keep safe distance among the patient and population.

## Discussion

Spinal metastases usually cause pathological fracture of vertebrae body resulting in severe pain or even limb sensory and motor disorders [4]. Factually, these end-stage patients need the palliative, hospice and the spiritual care [5]. And some published literature revealed that the effective palliative and hospice care and nursing strategies can prolong the life time, relieve pain and acquire satisfying quality of life [5,6]. In our report case, the team work consisting of routine professional care, palliative or hospice care, and rehabilitation nursing, along with the effective radiation protection that leads to improving patient and his family numbers satisfaction.

Palliative care as an effective therapeutic method can improve the quality of life in end-stage patient. For patients with metastatic spinal tumors, palliative care combined with 125I can relieve the back pain and rebuild the stability of spine [7]. Besides, this method can help patient regain the Activities of Daily Living (ADL) [8]. This reported patient occurred the radiation induced myelopathy, and developed fears and depressive emotion. Our nursing team performed the strategies of hospice care and spiritual care. The results showed that co-operative team includes patient and his family numbers, nurse, rehabilitation therapist, and physician can acquire more therapeutic efficacy, which has been proved by previous researchers [9]. Besides, rehabilitation nursing strategies did also show its' significance. What is noteworthy is that we emphasize the radiation protection of medical personnel and family of numbers [10]. The method of this prevention should keep safe distance at least more than 1cm or to wear protective clothing for operative person.

## Conclusion

Palliative and hospice care maybe the comprehensive nursing strategies for patient with the metastatic spinal tumors. These special nursing methods can relieve the pain resulting from tumor tissue or vertebrae body fracture even if they are in end-stage life. Besides, amount of work need to be done by researchers in the future like the systematic palliative and hospice work team and the comprehensive and scientific nursing strategies, especially, the consciousness and concept of palliative and hospice care should be installed in the future. Our report has some limitation such as the lack of experience of these nursing and lower evidence of level.

## Conflict of Interest and Ethical Approval

No potential conflict of interest relevant to this article was report. The informed consent was provided by patient and ethical approval was warranted by the First People's Hospital of Huaihua.

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