Metastatic Cancer Detection during Evaluation of Flank Pain in Painclinic Patients

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INTRODUCTION

The flank refers to the area from the costa to the hip on the lateral side of trunk, and it contains diverse organs. If pain is developed in the vicinity of the vertebrae and the costa, it is very difficult to find its causatives. Tumors in the vertebra or the spinal cord are one of causatives of flank pain, they are metastatic lesions caused by hematogenous dissemination in most cases. The majority primary lesions of spinal metastasis are the breast, the lung and the prostate, and additional lesions are the kidney, the gastrointestinal system, and thyroid cancer.(1) Generally, spinal metastasis is detected during the treatment for primary cancer in most cases. Nonetheless, in some patients, symptoms by metastasis manifest first, and thus primary cancer is diagnosed.(2,3) If patients who visited pain clinic for pain caused by metastasis are diagnosed as benign pain and treated, the diagnosis of primary cancer is delayed or unanticipated results such as other complications during the treatment may be occurred.(4-6) Therefore, for patients who are suspected to malignant pain, it is important to elucidate the causes by reviewing the past history and performing various tests. Previously many patients who visited pain clinics for metastatic cancer pain have been reported. But studies on spinal metastasis of lung cancer and ovarian cancer have not been reported yet. Therefore, we reported our cases with a review of the literature.

CASE 1

A 54-year-old male patient (height of 170 cm, weight of 82 kg) visited our pain clinic for left flank pain that was developed from 2 months ago and didn’t improve oral medications and physical therapies at a private hospital. In the past history, he was a heavy smoker (a pack of cigarettes a day for 25 years) and he has lost 7~8 kg weight recent 3 months ago. The patient complained of a dull pain that was radiating from the deep area at the left rib of 11th~12th thoracic vertebra while sitting for a long time, and pain was felt in the
right hip area sometimes. The visual analog scale (VAS) score was approximately 6, and neurological examinations revealed no other abnormality. Prior to treatments, plain chest X-ray was requested and mass region was detected in right hilar area (Fig. 1). Chest computed tomography (CT) demonstrated a mass measuring 4.8 x 3.7 cm in the right lobe with metastasis at 11th thoracic vertebra (Fig. 2). He was diagnosed as squamous cell carcinoma by percutaneous needle biopsy. By spinal magnetic resonance imaging (MRI) performed additionally, metastasis in the 5th lumbar vertebra was suspected. Thus he was accepted as having grade 4 lung cancer and referred to oncology for chemotherapy and palliative radiation therapy for spinal metastasis.

CASE 2

A 82-year-old female patient (height of 152 cm, weight of 68 kg) visited our pain clinic for right flank pain that was developed from 1 year ago and didn’t improve oral medications and physical therapies at a private hospital. The patient has taken thyroid replacement therapy for hypothyroidism diagnosed 20 years ago. The VAS score was 5, and the pain was aggravated when the flank area was pressed heavily. In physical examination, a mass at right flank area was palpated. Basic lab test, plain chest X-ray, and thoracic
CT were performed. In chest CT, a mass 12.6 x 9.2 x
11.0 cm in size that invaded the right chest wall, rib,
and perihepatic area was detected (Fig. 3). After admi-
sion, to find primary lesions, CT was performed on
the abdomino-pelvic area, and in the left ovary, a
multicyctic mass 8.0 x 7.5 x 7.0 cm in size was
detected. By aspiration needle biopsy, she was diag-
nosed as mucinoid cystadenocarcinoma. The patient
was transferred to oncology for chemotherapy.

**DISCUSSION**

The cause of flank pain is very various, and among
them, the cause of spinal tumors is metastasis in many
cases rather than primary cancer. Spinal metastasis of
cancer patients develops 5~10%, and in case of cancer
terminal stage develop over 70%.(7) Most metastatic
spinal cancer lesions are found thoracic region (70%)
related to the greater number of vertebrae, compared to
the lumbar (20%) and cervical vertebrae (10%).(8)
Metastasis to the spine are occurred frequently in
breast, lung, and prostate cancer, which take 60%.(1)

Most frequently spreading to spine is related to
osteotropism of cancer cells, or highly vascular supply
of bone marrow.(9) Batson(10) reported that the
vertebral venous plexus (plexus of Batson) which has
no valves, draining the thoracic, abdominal, and pelvic
viscera is a major route of metastasis to the spine.
Spread by nutrient artery also occurs to vertebral body
(80%) which is affected most frequently due to
abundant red bone marrow and high vascularity.

The most frequent first symptoms of spinal meta-
stasis may manifest as the features of general pains
such as backache, and muscle spasm, thus its diagnosis
may be delayed until definite signs of the invasion to
the spinal cord and the nerve root are occurred. If
patients frequently described the dull and constant pain
and awoke from the sleep due to pain, cancer pain was
suspected.(11) In addition, for cases associated with the
general symptoms of cancer such as recent weight loss
and general weakness, evaluation for other pathological
conditions should be proceeded.

If malignant pain was suspected, diagnostic work up
was carried out. Plain radiographs can show gross area
of bone involvement by the tumor. In case of meta-
static lung cancer, osteolytic and destroyed lesions
were showed.(12) MRI has advantage of excellent
visualization of soft tissue, bone marrow, and spinal
cord involvement as well as bony structure. So it is the
method of choice to metastatic workup.

In treatment, radiotherapy and chemotherapy should
be recommended to spinal metastatic cancer and is
more effective in pain control than surgery.(8)

It has been reported that the incidence of bone
metastasis in lung cancer patients is 30~40 %, and it
is metastasized readily to the vertebrae, and ribs.
Metastasis to vertebrae from lung cancer is occurred
through arterial dissemination, so mainly vertebral body
was affected.(13) In our case, smoking and weight loss
history and mass lesion in chest radiography enable to
further evaluation and made a diagnosis.

In regard to the case 2, despite of flank pain
persistent for almost one year, primary cancer was not
diagnosed. It appears that the pain was not associated
with neurologic symptom, thus it was considered to be
general pain, and the diagnosis was delayed. When the
patient visited our hospital, a mass was palpated in
physical examination, so cancer pain could be
suspected readily. In both cases, metastatic cancers
were diagnosed during pain evaluation prior to
treatments, thus although the diseases advanced far, the
primary cancer could be treated immediately.

With aging, the incidence of cancer is on the rise.
Therefore, it should be kept in mind that pain
presented by patients who visited pain clinics prior to
the diagnosis of primary cancer may be secondary symp-
toms. To prevent overlooking such primary diseases, according to clinical sign and symptoms, comprehensive history taking and evaluation should be performed.

ABSTRACT

옆구리 통증을 주소로 내원한 환자에서 검사 도중 발견된 전이암

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54세 남자 환자와 82세 여자 환자가 대증적 치료에도 호전되지 않는 옆구리 통증을 주소로 본원 통증 클리닉을 방문하였다. 과거력과 이학적 검사, 혈액 검사와 흉부 X선 검사상 척추 주위의 전이암이 의심되어 정밀 검사가 진행되었고 조직 검사와 컴퓨터 단층 촬영, 자기 공명 영상 검사에서 각각 폐암과 난소암이 진단되었다. 옆구리 통증을 유발하는 원인중 하나인 척추 주위 또는 척추 주위 종양은 혈액성 전이에 의한 전이암이 대부분이다. 원발암을 진단 받기 전에 통증 클리닉을 방문한 환자에서 옆구리 통증을 단순한 양성 통증으로 오인하는 경우 원발암의 진단과 치료가 늦어지게 되어 예후에 영향을 미치게 된다. 저자들은 원발암을 진단 받기 전에 옆구리 통증을 주소로 본원 통증 클리닉을 방문한 환자에서 검사 도중 척추 주위 전이암을 발견한 경험을 하였기에 문헌과 함께 보고하고자 한다.

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