Yeditepe Medical Journal 2014;8(29): 743-746

AN UNUSUAL CAUSE OF ARTHRITIS: CARCINOMA METASTASES

Case Report

ARTRİTİN ALIŞILMADIK NEDENİ : KARSİNOM METASTAZI

Turhan Ozler

Yeditepe University Hospital, Department of Orthopedics and Traumatology

Ozlem Uysal Sonmez

Yeditepe University Hospital, Department of Oncology

Orhan Onder Eren

Yeditepe University Hospital, Department of Oncology.

Isın Dogan Ekici

Yeditepe University Hospital, Department of Patology.

Melih Guven

Yeditepe University Hospital, Department of Orthopedics and Traumatology.

Cagatay Ulucay

Yeditepe University Hospital, Department of Orthopedics and Traumatology

Başak Oyan Uluc

Yeditepe University Hospital, , Department of Oncology

Corresponding Author

Turhan Ozler

Yeditepe University Hospital, Department of Orthopedics and Traumatology
Kozyatagi / Istanbul / Turkey
E-mail: turhan.ozler@yeditepe.edu.tr
Tel:0532-257-75-11

ABSTRACT

Synovium is a rare site of metastasis for solid tumors. Only 50 cases of synovial metastasis from solid tumors have been previously reported in literature. While the knee is the most common target, most common histological type of the primary is adenocarcinoma and the lung is the most common site of the primary (12 cases). In this article we present two cases of synovial metastasis from non-lung primaries as one patient with bladder cancer and the other patient with colon cancer.

CASE REPORT

Case 1. An 81 years old male patient was admitted with pain and the swelling complaints at left knee after a minor trauma. During physical examination, swelling, pain and local fever on his knee joint were detected. Serum CRP levels were elevated. High leukocyte count observed in the aspiration fluid of the knee joint but malignant cells could not be identified. In his medical history, prostate adenocarcinoma and bladder carcinoma were detected. The patient was operated with preliminary diagnosis of septic arthritis. Pathologic examination of the synovial specimen revealed high grade poorly differentiated carcinoma immunostaining weakly positive for CK-7 and CK 20 and strongly positive for panCK and p63. These findings were compatible with metastasis of bladder carcinoma.

CASE 2

A 85 year old woman was admitted with pain in the left knee for two years. The pain was unresponsive to NSAIDs during the last two months. Her medical history revealed metastatic sigmoid colon adenocarcinoma. During physical examination pain and tenderness in the left knee was observed. The patient was operated with diagnosis of painful osteoarthritis. During total knee arthroplasy operation villonoduler lesions were observed on synovium. Biopsy of the synovial lesions was reported as metastasis of colon adenocarcinoma.

Conclusion : Synovial metastasis may be encountered during the course of solid tumors. Patients may present with acute or subacute joint tenderness, swelling and pain. Differential diagnosis includes osteorathritis, bony metastasis, septic arthritis and other inflammatory diseases. Pathologic examination of synovium or synovial fluid is required for diagnosis.

Key words: *Cancer ; synovium; metastasis; adenocarcinoma.*

ÖZET

Amaç: Sinovyum solid tümörlerin nadiren metastaz yaptığı bir bölgedir. Literatürde bildirilmiş olan yaklaşık 50 sinovyal metastaz olgusu mevcuttur.En sık primer tümör akciğer olup en sık tutulan eklem diz eklemidir. Bu makalede primeri akciğer dışı olan 2 olgu sunulmuştur. ilki mesane kanserli bir hasta olup, ikincisinin primeri ise kolon kanseridir.

OLGULAR

Olgu 1:81 yaşında erkek hasta sol dizde ağrı ve şişlikle başvurdu. Hastanın tıbbi hikayesinde prostat ve mesane kanseri olduğu öğrenildi. Hasta başvurusunda ateşinin olması ve CRP yüksekliği olması nedeniyle septik artrit ön tanısı ile opere edildi. Sinovyal dokunun patolojik incelemesinde CK 7 ve CK 20 ile zayıf, panCK ve p63 ile kuvvetli olarak boyanan, az differansiye karsinom tespit edildi. Bulgular mesane karsinomu metastazı ile uyumlu bulundu.

Olgu 2: 85 yaşında kadın hasta 2 yıldır devam eden sol diz ağrısı nedeniyle başvurdu. Ağrı non steroid anti inflamatuar tedaviye yanıtsız idi. Fizik muayenede mobilizasyon sırasında hassasiyet mevcuttu. Tıbbi öyküde metastatik sigmoid kolon karsinomu olduğu saptandı. Hasta ağrılı osteoartit nedeniyle opere edildi. Operasyon sırasında sinovyumda villonodoler lezyonlar izlendi. Bu lezyonların patolojisi metastatik kolon adenokarsinomu olarak rapor edildi.

Sonuç : Solid tümörlerin seyri sırasında sinovyum metastazı ile karşılaşılabilir. Hasta akut ya da subakut ağrı ile başvurabilir. Ayırıcı tanıda osteoartrit, kemik metastazı, septik artrit ve enflamatuar artritler yer alır. Sinovyal sıvının ve sinovyumun patolojik incelemesi tanı için gerekmektedir.

Anahtar kelimeler: *kanser ; sinovyum ; metastaz; adenokarsinom.*

INTRODUCTION

Synovial metastasis is rarely encountered during the course of solid tumors although bone is a frequent site of metastasis (1,2). There are about 50 synovial metastasis cases documented in literature (1). The most common primary was reported as lung and the most common histologic type was reported as adenocarcinoma in these cases (3). In this paper, we report two cases of synovial metastasis in patients with advanced solid tumors. The primary was colon adenocarcinoma in one patient and bladder carcinoma in the other.

CASE 1

A 81 years old male patient with pain and the swelling complaints at left knee

after a minor trauma. During physical examination, swelling, pain and local fever on his knee joint were detected. Serum CRP levels were elevated. High leukocyte count observed in the aspiration fluid of the knee joint but malignant cells could not be identified. His past medical history revealed prostate adenocarcinoma and bladder carcinoma. He had been diagnosed with prostate carcinoma in 2006. Moderately differentiated adenocarcinoma with Gleason score of 6 had been reported. He had received anti androgen deprivation treatment for two years. In 2012, high-grade bladder carcinoma with muscle invasion was detected. The patient was treated with definitive radiation therapy after transurethral resection of the tumor. Diffuse bony metastases were detected on whole body pet scan a few weeks before the beginning of knee pain. On physical examination, the knee was swollen and tender during mobilization. The body temperature of the patient was 39°C and serum CRP level was 80(0-5mg/L). The patient was operated with probable diagnosis of septic arthritis. During operation, pathologic fracture of the proximal tibia and nodular structures resembling metastatic deposits on synovium were observed. Debridement for septic arthritis and excision of nodules were performed. Pathologic examination of the specimen demonstrated high grade, poorly differentiated carcinoma immunostaining weakly positive for CK-7 and CK 20 and strongly positive for panCK and p63(**figure1**).

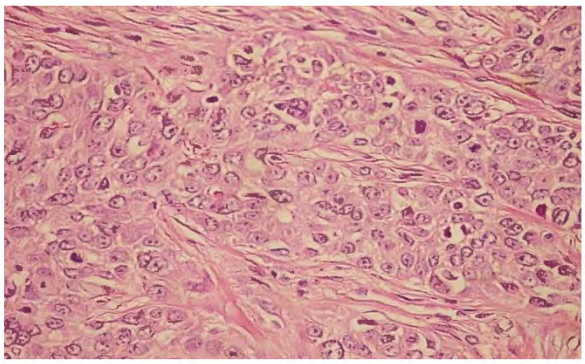

Figure-1: *High grade urothelial carcinoma characterized with sheets of neoplastic cells with increased nucleus/cytoplasmic ratio and few apoptotic cells, metastatic to synovial tissue could be seen. (H&E, x200).*

The origin of the tumor was presumed to be bladder in light of immunohistochemical findings. Synovial fluid analysis showed predominance of polimorphonuclear leukocytes but culture results were negative for bacteria.

CASE 2

A 85 year old woman was admitted with pain in the left knee for two years. The pain was unresponsive to NSAIDs during the last two months. Her medical history revealed metastatic sigmoid colon adenocarcinoma. Operation for colon carcinoma was conducted in 2011. The final diagnosis was stage III colon adenocarcinoma but she did not receive adjuvant chemotherapy due to advanced age. In 2013, liver metastasis and peritoneal carcinomatosis was detected. Radiofrequency ablation for the single liver lesion was performed.

On physical examination, the left knee was tender during mobilization. The patient was operated with diagnosis of disabling osteoarthritis. Total knee replacement with prosthesis was performed. During operation, villonoduler lesions were observed on synovium. Biopsy of the synovial lesions revealed metastatic adenocarcinoma (**figure2**).

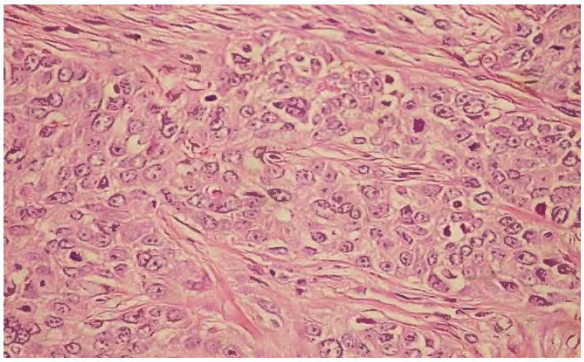

Figure-2: *Colorectal adenocarcinoma metastatic to the synovium characterized with tumor nodule*

composed of neoplastic glands could be seen. (H&E, x100.

Tumor cells were immunostaining positively for CEA CK 20 and mucine but negatively for CK7. Results of immunohistochemistry were compatible with metastasis of colon adenocarcinoma.

DISCUSSION

Although bone is a frequent site of metastasis of solid tumors, synovium still remains as a rare site of metastasis for solid tumors(1,2,4). There are about 50 cases documented and reported in literature. The primary in these cases is mostly lung cancer followed by gastrointestinal tract cancers and the most common histology of metastatic tumor is adenocarcinoma[3]. None of our patients had lung cancer as primary focus. The first patient had bladder cancer and the second patient had colon cancer as primary.

The most common joint affected by metastasis is knee, which was involved in both patients (3). The exact mechanism of occurrence of metastatic deposits in synovia is unknown but two mechanisms are proposed. First, hematogenous spread and the second, which seems more likely is contagious spread from juxta articular bone (3,5,6). Juxtaarticular route seems more likely for the first patient because he already had established bony metastasis. Hematogenous spread seems more plausible for second patients as bony metastasis was not present on imaging studies.

The patients with synovial metastasis may present with acute arthritis or subtle pain of a few months duration. The pain may be resistant to NSAİDs as in case 2. High index of suspicion may be required when symptoms are subtle. Complaints and physical examination findings can be interpreted as bony metastasis in patients with established metastatic cancer. Plain radiographs, magnetic resonance imaging, bone scintigraphy and even PET scanning may aid in diagnosis(1,3). Precise diagnosis of malignant synovitis requires cytological analysis of synovial fluid or synovial biopsy(7,8) Absence of malignant cells in the synovial biopsy does not rule out the diagnosis completely. Arthroscopic synovial biopsy with meticulous immunohistochemical analysis may be required in some cases(8,9). Differential diagnosis of joint pain in patients with cancer is broad (1,3,8,10). Septic arthritis, tuberculosis arthritis, rheumatoid arthritis , pain due to juxtaarticular bone metastasis, osteonecrosis , pain due to concomitant medications (e.g. aromatase inhibitors) degenerative osteoarthritis , gout or pseudogout, reactive synovitis, synovial sarcoma and pigmented villonoduler synovitis should all be considered. As mentioned above, appropriate serologic tests may add up to radiologic imaging for precise diagnosis.

In conclusion, synovial metastasis may rarely be encountered during the course of solid tumors. Malignant synovitis has a wide spectrum of differential diagnosis. Careful physical examination, appropriate imaging and pathologic examination of synovium or synovial fluid are required for precise diagnosis. Surgery may be performed for palliation of symptoms.

REFERENCES

1)Levine HR, Tingle E, Carter B, Dockery D. Synovial metastasis from lung cancer.Proc (Bayl Univ Med Cent) 2013;26:25-7.

2)Currall VA, Dixon JH. Synovial metastasis: an unusual cause of pain after total knee arthroplasty. J Arthroplasty 2008;23:631-6.

3)Thompson KS, Reyes CV, Jensen J, Gattuso P, Sacks R. Synovial metastasis: diagnosis by fine-needle aspiration cytologic investigation. Diagn Cytopathol 1996;15:334-7.

4)Younes M, Hayem G, Brissaud P, Grossin M, Kahn MF , Meyer 0. Monoarthritis secondary to joint metastasis. Two case reports and literature review. Joint Bone Spine 2002;69:495-8.

5)Goldenberg DL, Kelley W, Gibbons RB. Metastatic adenocarcinoma of synovium presenting as an acute

arthritis. Diagnosis by closed synovial biopsy. Arthritis Rheum 1975;18:107-10.

6)Delrieu F, Marty C, Benhamou CL, Forest M, Menkes CJ, Amor B. Monoarthritis symptomatic of adjacent bone tumors. Study of 5 cases. Rev Rhum Mal Osteoartic. 1984;51:137-44.

7)Murray GC, Persellin RH. Metastatic carcinoma presenting as monarticular arthritis: a case report and review of the literature. Arthritis Rheum 1980;23:95-100.

8)Tandogan RN, Aydogan U, Demirhan B, Arican A, Yücetürk A. Intra-articular metastatic melanoma of the right knee. Arthroscopy 1999;15:98-102.

9)Morbidi M, Magnani M, Della Rocca C. Synovial metastasis of the shoulder detected by arthroscopy as the presenting manifestation of lung adenocarcinoma. Arthroscopy 1998;14:508-11.

10)Sheldon PJ, Forrester DM, Learch TJ. Imaging of intraarticular masses. Radiographics 2005;25:105-19.