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Metastatic tumors of the hand in three cases

Üç olguda metastatik el tümörü

Haluk OZCANLI, Hakan OZDEMIR, A. Merter OZENCI, Yetkin SOYUNCU, Ahmet Turan AYDIN

Akdeniz University School of Medicine Department of Orthopaedics

Elde metastatik tümörler çok nadir gözlenir. Bunlar genellikle akciğer, meme ve böbreklerden kaynaklanır. El kemiklerine metastazlar ağrı, şişlik, yumuşak doku ülserleri ve osteolitik destrüksiyonlar oluşturabilir. Bu yazıda metastatik el tümörü görülen üç olgu sunuldu. Yaşları 58 (erkek), 42 (kadın) ve 40 (erkek) olan olgularda primer tümörler (mesane, kolon, proksimal femur kökenli kondrosarkom) nedeniyle daha önce çeşitli tedaviler uygulanmıştı. Tutulan bölgeler sırasıyla el ve ayak başparmağı, metakarp ve tırnak yatağı idi. Mesane tümörlü hastanın sağ ayak ve sol el başparmaklarına amputasyon, ardından sistemik kemoterapi; kolon tümörlü hastaya Ray amputasyonu; kondrosarkom tanılı hastaya ise biyopsi uygulandı. Histopatolojik tanı tüm olgularda primer tümörle uyumlu bulundu.

Anahtar sözcükler: Adenokarsinom/ikincil; amputasyon; kemik neoplazileri/ikincil; kondrosarkom/ikincil; kolon neoplazileri; el; neoplazi metastazı; başparmak.

Metastatic malignancies of the hand are rare and they usually develop from lung, breast, and kidney tumors. Metastases to the bones of the hand can cause pain, swelling, soft tissue ulceration, and osteolytic destruction. We presented three patients with metastatic tumors of the hand, whose ages were 58 (male), 42 (female), and 40 (male) years. Metastases developed in the thumb and the big toe, metacarpal bone, and the nail bed following treatment for primary tumors of the bladder, colon, and chondrosarcoma of the proximal femur, respectively. One patient underwent amputation of the thumb and the big toe followed by systemic chemotherapy, one patient with metacarpal involvement was treated with Ray amputation, and the latter underwent a biopsy. Histopathological diagnoses were consistent with primary tumors.

Key words: Adenocarcinoma/secondary; amputation; bone neoplasms/secondary; chondrosarcoma/secondary; colonic neoplasms; hand; neoplasm metastasis; thumb.

Metastatic tumors of the hand are uncommon. Hand metastasis represent approximately 0.007-0.2 % of all metastatic lesions and are usually found as case reports in literature.[1,2,3,4] The lung is the most reported site of primary tumors that metastasize to the hand (%40-50).[2,9] Other potential sources are the breast and kidney. Rare sources are gastrointestinal system tumors and sarcomas.

Early diagnosis of metastatic lesions of the hand can be diffucult. The symptoms may be subclinical or mimic sympathetic dystrophy, tenosynovitis, monoarticular arthritis or low grade infection.

During a 20-year period, from 1980 to 2000, three patients with hand metastases (one transitional cell Ca., one chondrosarcoma and one colon Ca.) were treated in our clinic. The purpose of this study is to present our cases and discuss the incidence, differential diagnosis and treatment of metastatic lesions of the hand.

Case reports

The first patient was a 58-year old man with painful swelling in the left thumb and right great toe. On physical examination, he had painful swelling

Correspondence to: Dr. Haluk Özcanlı. Akdeniz University School of Medicine Department of Orthopaedics, 07070 Antalya.
Phone: +90 242 - 227 43 43 / 66280 Fax: +90 242 - 227 43 29 e-mail: ozcanli@akdeniz.edu.tr
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and ulceration of the left thumb. He was suffering from dyspnea, coughing and haemoptisis, and a right supraclavicular lymp node enlargement was detected. Cancer of the bladder had been detected eight years ago in this patient and total resection, as well as prostetectomy and ileal conduit, were applied. The same carcinoma had been detected in the right renal pelvis three years later. The patient refused systemic chemotherapy. Hydronephrosis of the left kidney, lung and hand metastasis occured 2 years later. Chest x-rays revealed widespread metastasis and x-rays of the extremities showed osteolytic destructions of the left thumb and right great toe (Fig. 1). The left thumb and right great toe were amputated. Histopathological evaluation of the amputation materials showed transitional cell Ca.. The patient was treated with systemic chemotherapy in conjunction with amputation.

The second patient was a 42-year old woman with painful swelling on the dorsum of the right hand (Fig. 2a). She had had colonic resection and end-to-end anastomosis 5 months before; the histopathological examination was colonic adenocarcinoma. On physical examination she had swelling on the third metacarpal, and pain increased with motion. ESR was 35 mm./h.. X-ray of the right hand showed expansile osteolytic lesion of the third metacarpal bone. Increased activity on the metacarpal bones of the right hand was found on bone scanning. Two months later, ray amputation of the third ray was carried out (Fig.2 b,c). Histopathological examination of the amputation material was identified as adenocarcinoma metastatasis.

The third patient was a 40-year old man with multiple oral and skin lesions. On physical examination he had multiple skin lesions on the sacral region, oral mucosa and nail bed of the ring finger on the right hand(Fig. 3). The patient had previously been evaluated with pain in our outpatient clinic. At radiographic examination lytic destruction with spotty calcifications of the proximal femoral metaphysis was detected. Subtotal resection of the lesion was carried out in our clinic. Histopathological examination was defined as Grade II chondrosarcoma. Recurrence occured and hip disarticulation was carried out three years later. Multiple skin metastases occured one year later. Histopathological examinations of the lesions were defined as chondrosarcoma metastases.

Figure 1. Osteolytic lesion of the distal phalanx

Discussion

Metastases in the hand are rare disorder. Incidence of hand metastases is 0.007-0.1.[1-4] Kerin,[2] reported

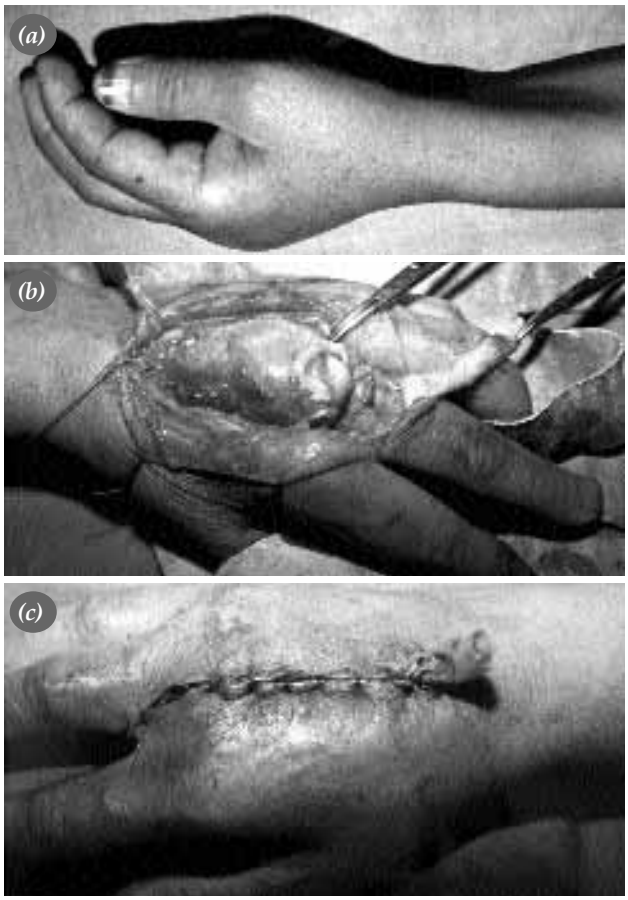

Figure2. (a) Swelling on the dorsum of the hand
(b) Intraoperative view of the tumor
(c) Postoperative view

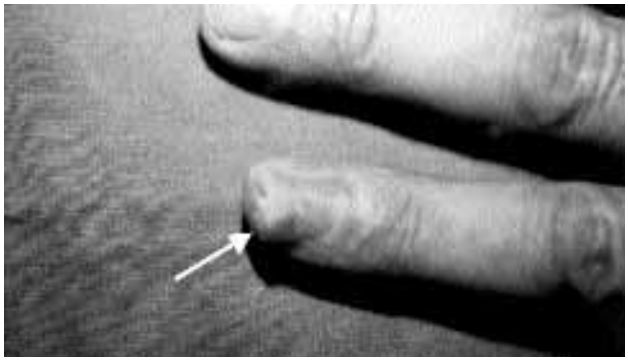

Figure3. Metastatic involvement of the subungal region

a total 156 cases in his extensive review. The distribution of metastases occur during the stage of diffuse hematogenous dissemination. Metastasis in the skeleton corresponds to the presence of active bone marrow and metastases to the bones distal to the knee and elbow are rare.[1,6,7,9-12] The lung can spread metastases into the systemic circulation and origin of hand metastases is usually the lung.[2-9] Other potential sources are the breast and kidney. Rare sources are gastrointestinal system tumors and sarcomas.[2,5-7,9-11] Gastrointestinal system metastasis are usually found as case reports in literature (Table1).[5,10,11,13-15]

In the reported cases terminal phalanges were the most common localization.[1,6] All fingers are affected, but mostly the thumb is involved.[5]

Chondrosarcomas are the second most common primary malign tumor of the bone and occur between the ages 30-60. Undifferentiated chondrosarcomas are usually metastase to the lung and the regional lymph nodes.[16-20] Single or multiple cutaneous metastases are usually seen head and neck region and metastases to the hands are very rare(20-24). Hand metastases according to chondrosarcomas are given at (Table 1)

Because these metastasis usually appear at the late stage of the metastatic dissemination, survival is short in the reported cases.[1,5,6,9,14,15] Although the tumor can be seen and palpable because of superficial localization, diagnosis of hand metastases is usually diffucult; symptoms and clinical findings include local signs of inflamation like swelling,

Table 1. Distribution of GIS Tumors and Chondrosarcomas reported in the literature

Author	Age	Sex	Primary tumor	Metastase	Survive
GIS Tumors					
Chang 2001	–	–	Gastric	4. Metacarp	–
Lopez 1997	–	–	Colon	1. Metacarp	1 months
Craigen 1988	37	Male	Gastric	Hamate	–
Amadio 1987	61	Male	Colon	Lunate	3 months
Buckley 1987	78	Female	Colon	Trapezium	6 months
	61	Female	Colon	Proximal phalanx	2 months
Healey 1986	–	–	Colon	5th Metacarp, calcaneus	–
Kerin 1983	61	Male	Colon	Lunate	–
	84	Female	caecum	Right thumb	–
	72	Female	Colon	All Fingers	–
	52	Female	Rectum	Left hand long finger	–
	83	Female	Colon	Right dorsum of the hand	–
	49	Female	Colon	Left 3. Metacarp	–
Chondrosarcomas					
Lambert 1992	36	Male	Right Femur	Lung, Biateral ring finger parmak pulpası	Less than 6 months
Amadio 1987	32	Male	Humerus	Left Thumb	5 months
	59	Male	Femur	Left Thumb	26 months
Kerin 1983	20	Male	Site not specified	Left ring finger	unknown
King 1978	33	Female	Scapula	Vulva, right thumb, right middle toe, scalp, gingiva	2 months
Froimson 1967	30	Male	Fibular head	Lung, right thumb, left ring finger	3 months

erythema and pain which is the most frequent symptom.[3,7] These type of lesions simulate infection or osteomyelitis.[9-12,24,25] Radiographies often show osteolytic destruction although breast and prostatic carcinoma are usually blastic.[1,11] Bone scan shows increased uptake in the affected part and ESR normal or increased. Microbiological and histopathological examinations must be done for diagnosis.

Metastatic hand tumors appear at a late stage, so the treatment is usually palliativ.[1,5,6,8,9] Treatment options of these lesions are dependent upon the status of the patient, primary origin of the metastases and localization. Chemotherapy may be sufficient for reducing tumor mass, also radiotherapy may reduce tumor mass and relieve pain especially in patients with multiple or inoperable lesions. Surgical treatment of metastases depends on the localization of the lesion. Excision of the lesions, amputation, ray resection or curretage and filling the cavity with methylmetacrilate may be alternative methods for small lesions.[3,25] Survival of the metastatic hand tumors are usually less than 6 months.[5,11,15,21,23,24]

Thus metastasis of the hand must have a multidisciplinary evaluation with a hand surgeon, radiologist, oncologist and pathologist; awareness of such lesions may lead to earlier diagnosis.

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