

Metastatic Carcinoma Presenting as Soft Tissue Infection in the Hand

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Introduction

Metastatic tumors in the hand are rare, accounting for approximately 0.1% of all metastatic tumors. Of these tumors, the majority present as bony lesions rather than as cutaneous or soft tissue lesions. When the soft tissue is affected, it is usually misdiagnosed as benign condition such as infection or inflammatory conditions. When recognized, it signifies an advanced stage. Occasionally, it may be the first presentation of a previously undiagnosed primary malignancy elsewhere. We present two patients who had metastatic tumors present as soft tissue infections in the hand

Both nasopharyngeal and hepatocellular carcinomas usually metastasize to the lungs, bones, and regional lymph nodes. The mechanism of soft tissue metastases to the hand is still unclear; possible theory includes the "Seed and Soil" hypothesis and "Immune escape" theory. Hand dominance and intravenous insertion of chemotherapy may play a role. Since metastasis represents a progression of tumor staging, early awareness of unusual metastatic presentations may lead to a change in intervention options for the primary tumor and may affect patient survival.

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Methods

- We present two patients who had metastatic tumors present as soft tissue infections in the hand. In addition to reviewing the literature
- Google (www.google.com, pubmed (www.ncbi.nlm.nih.gov/pubmed/),
- Articles from To 2017
- Excluded "bone metastasis" and "sarcomas"
- Key words soft tissues metastasis, metastasis to the hand, cutaneous metastasis to the hand, hepatocellular metastasis to the hand, nasopharyngeal metastasis to the hand ,

Case reports

Case 1, A 66 years-old man was diagnosed with stage III (T3N1M0) moderate to poorly differentiated nasopharyngeal carcinoma (NPC). He received cisplatin and radiotherapy in October 2012 and additional chemotherapy (cisplatin and 5- fluorouracil) in April 2013, in which he didn't complete due to intolerance. He was referred to us by his oncologist, in June 2013 to further investigate a right-hand mass with discharge for three months before presentation.

On examination, a prominent mass at the first web space, expressing pussy discharge on compression (figure 1), not tender or erythematous with a normal range of motion, strength, and sensation. X-Ray and magnetic resonance imaging (MRI) of the hand revealed no osseous abnormality, foreign body or fracture, large heterogeneous solid multilobulated lesion measuring 6.3 cm in length by 4.0 cm transverse dimension by 2.8 cm anterior-posterior. There is intermediate signal on T1, similar to muscle, and moderately increased on the T2 signal, with the apparent incorporation of fascial and tendinous elements is seen as linear black signal foci on axial images. The apparent mass does not involve the bones of the first and second digits.

On the bases of the finding, we decided to manage the patients with antibiotics in addition to incision and drainage was performed. The histopathological evaluation concluded with well-differentiated invasive squamous cell cancer, deep to the dermis and sparing the epidermis, compatible with the histopathology of the primary NPC consistent with metastasis. A few days later, a computed tomography (CT) scan of the neck, chest, and abdomen was done and showed enlargement of the primary tumor in addition to distant metastases to the lung and liver. MRI of the brain was consistent with metastatic carcinoma to the frontal lobe

Case 2, A 48 Years-old male with a known history of metastatic hepatocellular carcinoma to the bone, lung and brain presents with a swollen left thumb that is erythematous with central mass skin necrosis but no bony destruction of the distal phalanx. X-ray of the left thumb was performed and concluded with soft tissues swelling at the tip of the left thumb with mild bony resorption at the dorsal aspect of the shaft of distal phalanx . Histopathological evaluation of the surgical biopsy was positive for HCC metastasis



Figure 1. right 1st web space with soft tissue mass, central wound with serosanguinous discharge.

The mechanism of soft tissue metastases to the hand, is still unclear; possible theory includes the "Seed and Soil" hypothesis and "Immune escape" theory. Tumor seeding of previously healthy tissues has been described for other sites specially during percutaneous endoscopic gastrostomy site [9-11] and percutaneous needle biopsy of HCC [7-9] ,

DISCUSSION

To our knowledge there are two cases in the literature describes direct implantation of tumor cells to the soft tissues of the hand, the first report was a laryngeal cancer metastasis to the soft tissues of the thumb in patient that underwent laryngectomy and known to have lung metastasis, used his thumb for occlusion during tracheoesophageal [Jan]. A similar accident occurred in a laboratory at the National Institutes of Health (USA), when a healthy young woman accidentally pricked her hand with a needle 'that had been previously used to draw up a suspension of a human colonic adenocarcinoma cell line' [Gugel] The wound was superficial, but 2 weeks later it produced a nodule formed by the adenocarcinoma cell line. Remarkably, the nodule showed no signs of inflammation [Gugel], highlighting the ability of cancer cells to avoid immune surveillance [Lazebnik]. The expression of tumor-associated antigens enhances the immunogenicity of a tumor, and if it is able to reduce the presentation of such markers, then the tumor remains relatively invisible to the immune system and escapes detection. If the tumor does not manage to escape detection, then it can evolve to prevent the activation of the immune response [Yi]

CONCLUSIONS

Clinical manifestation of soft tissue metastasis to the hand can mimic benign conditions such as pulp space infection, osteomyelitis, septic arthritis, gout, rheumatoid arthritis and tenosynovitis and metastasis carcinoma might not be one of the differential diagnosis. Since metastasis represents a progression of tumor staging, and can be the first presenting finding of an occult malignancy. In Afshar's paper, 30% of hand metastases were the first manifestation of the disease. Therefore, early awareness of unusual metastatic presentations may lead to a change in intervention options for the primary tumor and may affect patient survival.

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