SAGE Open Medical Case Reports

Case Report

Metastatic tumor of the hand of unknown primary origin

SAGE Open Medical Case Reports
Volume 7: 1–4

DOI: 10.1177/2050313X19836894
journals.sagepub.com/home/sco
SAGE

Vincenzo Giordano[1], Marcos Giordano[2], Carolina Giordano[3], José Giordano[4], Hilton Augusto Koch[5] and Irocy Guedes Knackfuss*[6]

Abstract

Acral metastases in the hand are exceedingly rare. We present the unusual case of a metastatic tumor of the hand of unknown primary site in a 77-year-old man with no known cancer history. The patient presented with pain and swelling in the tip of the left ring finger, which had previously been diagnosed as gout at another clinic. Laboratory tests, including white blood cell count, erythrocyte sedimentation rate/C-reactive protein, and uric acid were all within normal limits. Excisional biopsy was taken by amputation of the distal phalanx of the left ring finger through the distal third of the middle phalanx. Pathology confirmed the presence of a moderately differentiated adenocarcinoma of unknown primary site. Roentgenographic examination of the chest revealed no pathologic findings. The patient refused further investigation and adequate treatment. He died 4 months later. The current description confirms the rarity of metastatic malignancy of the hand and its poor prognosis.

Keywords

Metastatic cancer, bone metastases, unknown origin, carcinoma

Date received: 15 December 2018; accepted: 19 February 2019

Introduction

Hand metastases account for 0.1% of all osseous metastases.[1,2] Lungs are the most frequent primary source of such tumors, accounting for about 40% of cases.[3] Abrupt onset of pain, accompanied by redness and swelling in the hand, especially in the fingers, can be a feature of an inflammatory, infectious, or primary tumor disease.[4] In addition, metastatic tumors of the hand can be the first sign of an occult malignant disease.[5,6] Therefore, accurate diagnosis and initiation of proper therapy is often delayed. We report the case of a 77-year-old male patient who presented a metastatic tumor of the hand of unknown primary site, which was misinterpreted and treated as gout.

Case report

A 77-year-old White man with past medical history of angina pectoris and tobacco dependence was first seen in another clinic because of pain and swelling in the tip of the left ring finger. The onset of the symptoms had been 6 weeks before. The clinical diagnosis of gout was given and the patient was treated for this illness. No roentgenograms and laboratory tests were performed. Two months following his initial diagnosis of gout, he was referred to our institution because the swelling had increased in size and become more painful. The tip of the left ring finger was two to three times bigger in comparison to the right one, resembling a drumstick. There was extreme pain on palpation and the patient could not move the distal interphalangeal joint of this finger. No lymphadenopathy was appreciated on his exam. In addition, the patient denied constitutional symptoms such as fever, weight loss, or night sweats. He quit cigarettes 5 years before.

Laboratory tests, including serum uric acid dosage (4.3 mg/dL—normal levels between 3.4 and 7.0 mg/dL for male), white blood cells (WBC) count (8.5×10^9/L—normal levels between 4.5 and 11.0×10^9/L), erythrocyte

[1]Serviço de Ortopedia e Traumatologia Prof. Nova Monteiro, Hospital Municipal Miguel Couto, Rio de Janeiro, Brazil
[2]Serviço de Traumato-Ortopedia, Hospital de Força Aérea do Galeão, Rio de Janeiro, Brazil
[3]Universidade Unigranrio, Rio de Janeiro, Brazil
[4]COFIG, Rio de Janeiro, Brazil
[5]Departamento de Radiologia, Universidade Federal do Rio de Janeiro, Rio de Janeiro, Brazil
[6]Departamento de Ortopedia, Universidade Federal do Rio de Janeiro, Rio de Janeiro, Brazil

*In memoriam.

Corresponding Author:
Vincenzo Giordano, Serviço de Ortopedia e Traumatologia Prof. Nova Monteiro, Hospital Municipal Miguel Couto, Rio de Janeiro, RJ 22430-160, Brazil.
Email: v_giordano@me.com

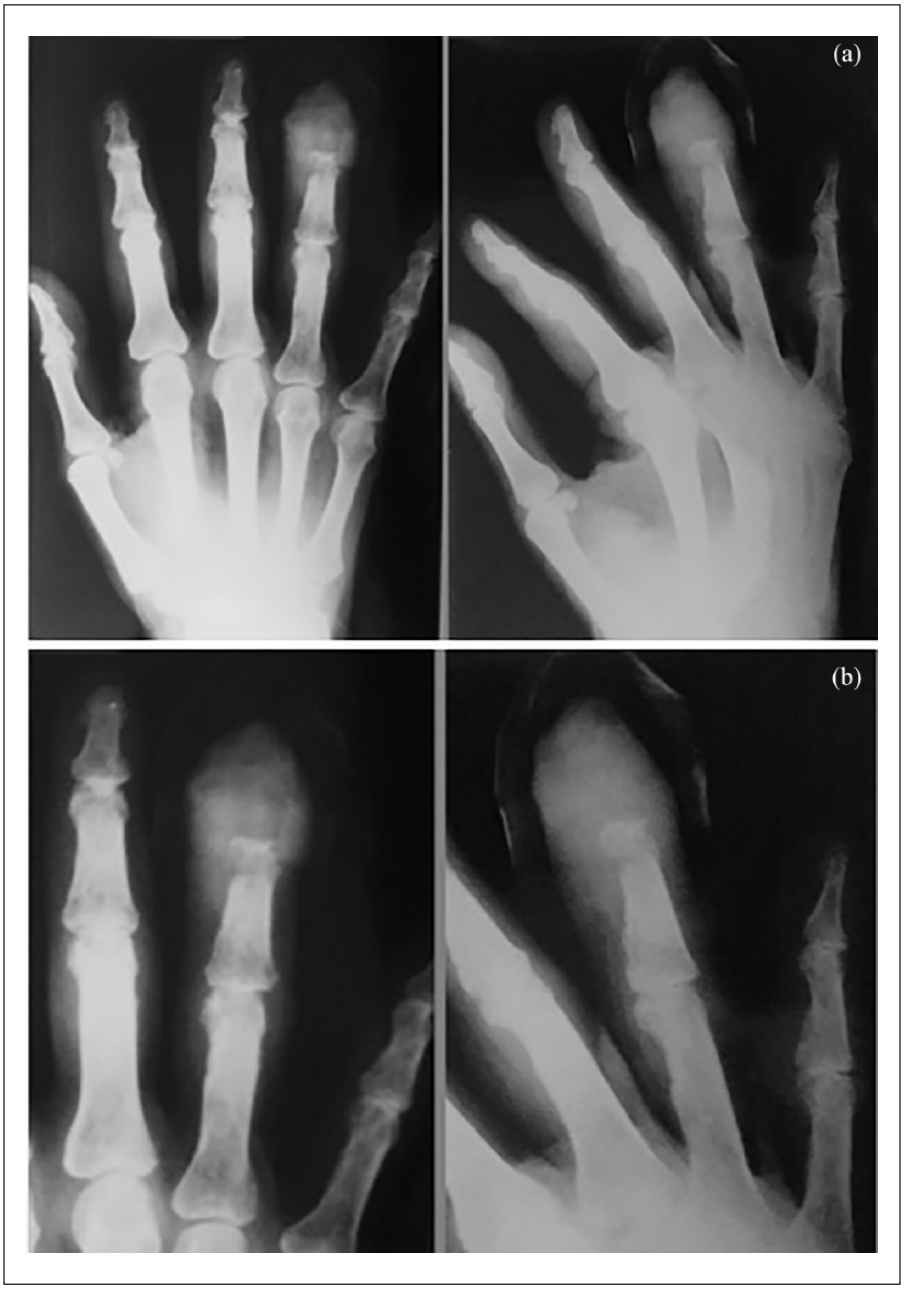

Figure 1. (a) AP and oblique views of the left hand. (b) Spot AP and oblique views of the ring finger. Observe the distal phalanx of the ring finger was completely destroyed by the lesion. Note that the articular cartilage remained intact.
AP: anteroposterior.

sedimentation rate (ESR; 10 mm/h—normal values < 15 mm/h Westergren method), and C-reactive protein (CRP; 0.3 mg/dL—normal values < 0.5 mg/dL), were no longer positively characteristic. Roentgenographic study of both hands revealed a radiolucent area in the distal end of the left ring finger. Anteroposterior (AP) and oblique views of the left hand showed an osteolytic lesion that destroyed almost the entire distal phalanx of the ring finger (Figure 1). There was no sclerosis or periosteal reaction. Roentgenographic examination of the chest revealed no pathologic findings. Patient refused CT scans and MR imaging for further diagnostic investigation but agreed to perform an excisional biopsy of the lesion.

The patient returned approximately 3 weeks later for surgery. Examination of his left hand was unchanged. An open biopsy of the tip of the left ring finger was performed and the left ring finger was amputated through the distal third of the middle phalanx (Figure 2). On gross examination the distal phalanx was found to have been completely replaced by a tan, resilient tumor. Pathology confirmed the presence of a moderately differentiated adenocarcinoma (Figure 3).

Following the procedure, the patient's symptoms resolved. Despite our recommendations the patient refused further investigation and treatment. He died 4 months later and the family refused autopsy.

Discussion

Metastatic tumors of the hand are the first sign of an occult malignancy in 10% of the reported cases. The most frequent primary source of such tumors are the lungs.[1–6] However, despite the improved methods currently available some cases are diagnosed as a metastatic cancer of unknown primary origin, defined as biopsy-proven metastasis from a malignancy in the absence of an identifiable primary site after a complete clinical work-up or when the primary site is strongly suspected but not proved.[7–9] Its incidence generally ranges between 3% and 5%.[8,9] The median age at diagnosis is around 65–70 years.[8] Adenocarcinoma is histologically diagnosed in 50%–70% of cases and is the most frequent pathological group.[8] In the majority of those cases, complete remissions are rare and survival is extremely poor, with a median survival of 4–12 months.[8–10]

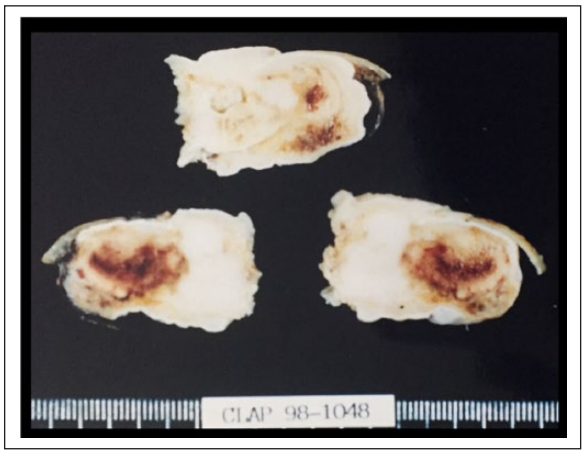

Figure 2. Macroscopic observation of the amputated phalanx. On gross examination the distal phalanx was found to have been completely replaced by a tan, resilient tumor.

In the current case the patient had a biopsy of the finger lesion that showed a moderately differentiated adenocarcinoma of unknown primary origin. Despite our recommendations the patient refused to be treated or further investigated for another cancer diagnosis. Nowadays, immunohistochemistry (IHC) and positron emission tomography with fluorodesoxyglucose (FDG-PET) are used as standard tests for detection of the primary origin of the lesion in patients with adenocarcinoma of unknown primary site.[8,9] Early diagnosis is critical as specific treatments can improve outcome, and increase survival rate. Altman and Cadman[7] found that survival for treated patients with microscopically diagnosed cancer of unknown primary site was statistically longer than for untreated ones. Nevertheless, it must be highlighted that both IHC and FDG-PET lack specificity and sensibility for some primary tumors of the gastrointestinal tract.[8,9]

Not surprisingly, when clinicians are unable to identify the primary tumor it becomes extremely difficult to devise an appropriate therapy regimen. Therefore, only 10%–15% of the cases of metastatic disease of unknown origin will have effective systemic chemotherapy available.[7] As mentioned before, our patient refused any pharmacological treatment and died

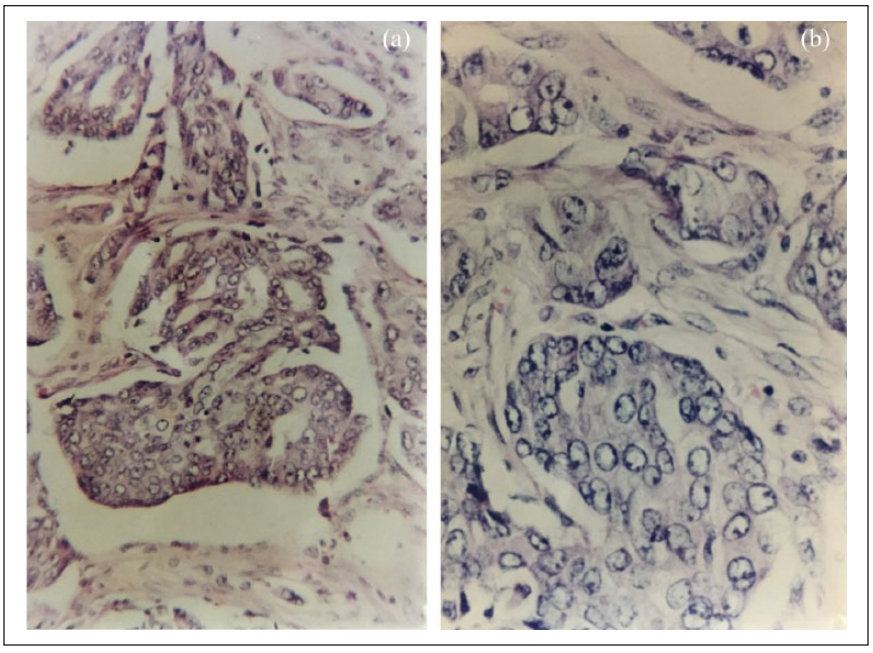

Figure 3. Microscopic findings of metastatic moderately differentiated adenocarcinoma with a strong desmoplastic reaction. Note the cells with atypical and hyperchromatic nuclei and abundant and clear cytoplasm. (a) HE, 20×. (b) HE, 40×.

4 months later. No autopsy was done. Postmortem examination should be taken on a regular basis assuming no contraindication exists, as primary tumors are diagnosed in approximately 85% of the patients that die from metastatic tumors of unknown origin.[8] Autopsy is still useful in this patient population as many authors documented major discrepancies between the clinical and postmortem diagnoses.[11,12]

Finally, the clinical diagnosis of hand metastasis is challenging, as its presentation may mimic a wide range of pathology, including crystal deposition disease, inflammatory arthopathies, osteomyelitis, both benign and malignant primary tumors, and delay effective therapy.[13–17] However, although rare, metastasis should always be included in the differential diagnosis in older patients with an increasing painful swelling on the hand, even when no malignancy is known.[18] In our patient, radiographs revealed a radiolucent area in the distal end of the left ring finger, with no sclerosis or periosteal reaction that destroyed almost the entire distal phalanx of the ring finger. There were no typical findings for inflammatory arthropathy or crystal deposition disease. Given the refusal of the patient to perform other imaging and the rapid growth of the lesion, an excisional biopsy was done, confirming the presence of a moderately differentiated adenocarcinoma. Therefore, we suggest that biopsy should always be considered in differentiating tumors from other conditions whenever there is nonspecific skeletal involvement in the hand.

Conclusion

Despite the rarity of metastatic tumors of the hand and its association with a short survival time, it is important to differentiate a cancer lesion from inflammatory and infectious diseases. High suspicion index should be aroused when an older patient presents a large painful swelling on the hand, with an increasing size over a period of weeks. Biopsy should be done in all suspicious cases.

Acknowledgements

V.G. and M.G. managed the patient. V.G., M.G., and I.G.K. wrote the first draft of the manuscript. C.G., J.G., and H.A.K. contributed to the writing of the manuscript and made critical revisions. All authors reviewed and approved of the final manuscript.

Declaration of conflicting interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Ethical approval

The study was approved by an institutional review board.

Funding

The author(s) received no financial support for the research, authorship, and/or publication of this article.

Informed consent

Informed consent was obtained from a relative after the authors explained that the patient would not be identified and all information presented in the manuscript would keep patient's privacy.

ORCID iD

Vincenzo Giordano https://orcid.org/0000-0002-4429-312X

References

1. Puhaindran ME and Athanasian EA. Malignant and metastatic tumors of the hand. *J Hand Surg Am* 2010; 35(11): 1895–1900; quiz 1900.
2. Morris G, Evans S, Stevenson J, et al. Bone metastases of the hand. *Ann R Coll Surg Engl* 2017; 99: 563–567.
3. Kerin R. The hand in metastatic disease. *J Hand Surg Am* 1987; 12: 77–83.
4. Flynn CJ, Danjoux C, Wong J, et al. Two cases of acrometastasis to the hands and review of the literature. *Curr Oncol* 2008; 15(5): 51–58.
5. Amadio PC and Lombardi RM. Metastatic tumors of the hand. *J Hand Surg Am* 1987; 12: 311–316.
6. Stomeo D, Tulli A, Ziranu A, et al. Acrometastasis: a literature review. *Eur Rev Med Pharmacol Sci* 2015; 19: 2906–2915.
7. Altman E and Cadman E. An analysis of 1539 patients with cancer of unknown primary site. *Cancer* 1986; 57(1): 120–124.
8. Kramer A, Hubner G, Schneeweiss A, et al. Carcinoma of unknown primary—an orphan disease. *Breast Care (Basel)* 2008; 3(3): 164–170.
9. Stella GM, Senetta R, Cassenti A, et al. Cancers of unknown primary origin: current perspectives and future therapeutic strategies. *J Transl Med* 2012; 10: 12.
10. Hainsworth JD and Gereco FA. Treatment of patients with cancer of unknown primary site. *N Engl J Med* 1993; 329: 257–263.
11. Khawaja O, Khalil M, Zmeili O, et al. Major discrepancies between clinical and postmortem diagnoses in critically ill cancer patients: is autopsy still useful. *Avicenna J Med* 2013; 3(3): 63–67.
12. Sens MA, Zhou XD, Weiland T, et al. Unexpected neoplasia in autopsies. *Arch Pathol Lab Med* 2009; 133(12): 1923–1931.
13. Chen WA, Emory CL and Graves BR. Disseminated cryptococcal osteomyelitis to the hand in an immunosuppressed lymphoma patient. *J Hand Surg Am* 2018; 43(3): 291.e1–291e6.
14. Gomes EA, Saliba JJ, Saliba GAM, et al. Intraosseous epidermoid cyst: case report. *Rev Bras Ortop* 2005; 40: 678–680.
15. Savant D, Kenan S, Kenan S, et al. Osteogenic melanoma: report of a case mimicking osteosarcoma and review of the literature. *Skeletal Radiol* 2018; 47(5): 711–716.
16. Suresh SS, Etemadi J and Bhatnagar G. "Soap bubble" lesion of the middle phalanx: enchondroma or epithelioid hemangioma. *J Orthop Case Rep* 2014; 4: 47–50.
17. Wee E, Wolfe R, McLean C, et al. Clinically amelanotic or hypomelanotic melanoma: anatomic distribution, risk factors, and survival. *J Am Acad Dermatol* 2018; 79: 645–651.e4.
18. Smith Z, Girard N and Hansford BG. Multifocal metastatic chordoma to the soft tissues of the fingertips: a case report including sonographic features and a review of the literature. *Skeletal Radiol* 2018; 47(3): 401–406.