Metastatic cervical carcinoma masquerading as iliopsoas abscess in an HIV negative woman-diagnosed on fine-needle aspiration cytology: A case report

ABSTRACT
The most common pathology in iliopsoas region in the Indian subcontinent is tuberculosis. The iliopsoas compartment can also be affected by other conditions such as hemorrhage and tumors. However, isolated metastasis in the area is usually rare, especially in cases where the primary malignancy is undiagnosed previously. Such cases may be misinterpreted on radiological examination as psoas abscess of infectious origin. Here we present a case of metastasis in psoas muscle from a previously undiagnosed case of carcinoma cervix.

Key words: Cervix; fine needle aspiration; iliopsoas, psoas abscess (PA); squamous cell carcinoma

Introduction
Psoas abscess (PA) is rarely encountered these days. It may be primary or secondary. Primary PA is thought to occur due to hematogenous spread from an occult infectious source in the body. Secondary PA usually occurs due to contiguous spread from the site of spinal infections such as spinal osteomyelitis or from other sources of other infections such as periappendicular abscess, Crohn’s colitis, and carcinoma of cecum.[1,2] Cervical carcinoma is one of the most common types of malignant tumors in females. It spreads locally and metastasizes late.[2] In human immunodeficiency virus (HIV) positive females cervical carcinoma has a more aggressive behavior with unusual outcomes such as PA formation.[3] PA-like metastasis in HIV negative females with cervical carcinoma is extremely rare.[1,2]

Case Report
A 59-year-old postmenopausal female presented with a history of progressively worsening back pain since four months. The pain was associated with malaise, weight loss, and mild fever.

A computed tomography (CT) scan was performed that showed a large collection of pus along with bone destruction in the right iliopsoas region [Figure 1]. A diagnosis of PA was suspected and a clinical examination revealed a hard mass in the right iliopsoas region. Fine needle aspiration cytology of the mass was performed which showed many large atypical cells resembling a squamous cell carcinoma.

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was made and a CT-guided fine-needle aspiration (FNA) was performed with a 22-gauge spinal needle. The aspiration yielded pus-like material. Smears were air-dried and heat fixed as well as fixed in 100% methanol for Gram staining and Ziehl-Neelsen (ZN) staining. Both Gram stain and ZN stain were negative.

A repeat FNA was done and smears were fixed in 100% methanol and were stained by hematoxylin and eosin and Papanicolaou stains. The smears showed moderate-to-increased cellularity comprising malignant squamous cells arranged in discohesive clusters and singles against a background of necrosis. Individual cells showed nuclear pleomorphism, with coarse-clumped chromatin, prominent nucleoli, and irregular nuclear membrane along with moderate amount of cytoplasm. Individual cell keratinization was seen. Few bizarre and tadpole-like cells were also identified [Figure 2]. A provisional diagnosis of keratinizing squamous cell carcinoma was made and further workup was advised.

The patient was found to be seronegative for HIV and hepatitis B surface antigen (HBsAg). On further ultrasound examination, a growth was identified at the external orifice (or, external os) of cervix. A biopsy was taken from cervix and was subjected for histopathological examination (HPE). HPE revealed features of well-differentiated keratinizing squamous cell carcinoma [Figure 3]. Hence, a final diagnosis of well-differentiated keratinizing squamous cell carcinoma of the cervix with skeletal metastasis was made.

Discussion

PA was first described by Mynter in 1881 who referred to it as “psoitis.” Depending on the presence or absence of infection, PA can be of two types, i.e., primary PA and secondary PA. Primary PA is probably a result of hematogenous spread of infection from an occult source in the body. The most common pathogen for primary PA is *Staphylococcus aureus*. Secondary PA usually occurs due to contiguous spread from neighboring structures.[4] Various causes for secondary PA have been identified, these include vertebral osteomyelitis, tuberculous spondylitis, diseases of the gastrointestinal tract (Crohn’s disease, diverticulitis, and infection) and genitourinary tract (malignancies, infection, and interventions), and septic arthritis. The most common cause of secondary PA in India is tuberculous involvement of the dorsolumbar spine.[5] Though skeletal muscles represent around 50% of the total body mass, metastasis into iliopsoas muscle is a rare phenomenon.[6]

Cervical cancer, as the second most common type of cancer in females worldwide, is characterized by a range of minor to severe neoplastic changes in the epithelium. Cervical carcinoma metastasizes predominantly via direct extension and the lymph nodes, while the hematogenous route is relatively rare.[7] Invasive cervical carcinoma is considered as an acquired immune deficiency syndrome (AIDS) defining condition. This is because immunosuppression caused by the HIV leads to increased severity and incidence of neoplasia. Hence, cervical carcinoma in HIV positive females usually have an aggressive and rather unusual course. There are many reports of PA-like metastasis from cervical carcinoma in HIV positive females.[11] However, PA-like skeletal metastasis from cervical cancer in HIV negative females is a rare condition with few reported cases so far.[1,2,5,8] In the case described by Devendra and Tay,[2] there was only involvement of skeletal
muscle without any damage to bones, while the case reported by Bar-Dayan et al. showed an associated bone involvement as well. However, in both the cases, the primary malignancy was diagnosed simultaneously as was seen in our case. In cases reported by Kalra et al. and Kamal et al., the cervical tumor had been treated previously by radiotherapy and the metastases had presented years after the treatment of the primary tumor.

**Conclusion**

PA-like metastasis has been considered as an AIDS defining condition in females with cervical carcinoma. A similar finding in an HIV negative female is a rare phenomenon with very a few reported cases so far. Our case highlights the fact that a multidisciplinary approach is required for the diagnosis of squamous cell carcinoma of cervix masquerading as PA, and a malignant cause should always be borne in mind by clinicians and radiologists while finalizing the diagnosis.

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**Conflicts of interest**

There are no conflicts of interest.

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