Priapism in a patient with advanced hepatocellular carcinoma

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Accepted 2 November 2020

DESCRIPTION

A 72-year-old man with advanced hepatocellular carcinoma (HCC) presented with priapism ([figure 1](#)) and urinary dysfunction. Three years ago, he had developed HCC in the left lobe that was 152 mm in diameter and undergone surgical resection. The resected specimen had shown poorly differentiated HCC with im (–), for example, FC (+), fc-inf (–), sf (+), Vp2, Vv0, Va0, b0 and sm (–). Five months later, metastasis to the left lung had been observed, and he had been treated with lenvatinib for 18 months followed by ramucirumab and sorafenib. However, after 2 months of sorafenib treatment, intrahepatic tumour progression with multiple lung and bone metastases had been observed ([figure 2A](#)). Contrast-enhanced CT of the pelvis revealed metastasis to the left pubic bone and penis with increased arterial blood flow ([figure 2B,C](#)). Angiography of the left internal pudendal artery showed tumour staining around the penis and embolisation of the left internal pudendal artery was subsequently performed; however, it was unsuccessful due to the unsuccessful embolisation of the right internal pudendal artery. Subsequently, he presented with paraparesis due to intramedullary metastasis to the thoracic spinal cord. His condition rapidly deteriorated thereafter, and he ultimately died under best supportive care, approximately 3 years after the initial diagnosis of HCC ([figure 3](#)).

Priapism is a rare urological condition, with an estimated incidence of 0.5–0.9 cases per 100 000 in the general population, and it is classified into three subtypes: ischaemic (veno-occlusive, low flow),

Figure 2 (A) Contrast-enhanced CT of the abdomen showed intrahepatic tumour progression with bone metastasis. (B and C) Contrast-enhanced CT of the pelvis showed metastasis to the left pubic bone and penis (arrow) with increased arterial blood flow (arrow).

Figure 3 Timeline of the patient.

non-ischaemic (arterial, high flow) and stuttering (recurrent).^{1 2} Priapism associated with malignancy is caused by penile metastasis from other solid tumours, such as bladder, prostate, kidney, recto-sigmoid, testis and lung cancer, or haematological malignancies such as chronic myeloid leukaemia, and it generally presents as ischaemic priapism. Direct neoplastic cell invasion into the penile cavernous sinuses and venous system, resulting in the complete obstruction of venous outflow is the proposed mechanism.² Although malignancy-related non-ischaemic priapism is rare, as was observed in our case, a case of non-ischaemic priapism secondary to unregulated arterial inflow without compromised venous drainage was reported in patient with metastatic bladder cancer.³ Penile metastasis from HCC with an increased arterial blood flow was considered to be the most likely cause of priapism in this

Figure 1 The finding of the patient's priapism.

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To cite: Kinoshita A, Koike K, Saruta M. *BMJ Case Rep* 2020;**13**:e239534. doi:10.1136/bcr-2020-239534

case. If conservative management is not successful in patients with high-flow non-ischaemic priapism, then selective embolisation of the cavernosal artery can be attempted since it has a resolution rate of 75%.^{4,5} However, penile metastasis usually occurs in the context of more widespread disseminated cancer. Therefore, the prognosis in patients with penile metastasis is extremely poor. Furthermore, the prognosis in patients with penile metastasis from non-urolological cancers and those presenting with priapism was reported to be worse than that in patients with metastasis from urological cancers and those presenting without priapism, as was consistent with our case.⁶

To the best of our knowledge, this is the first case of a patient with priapism accompanied by HCC. Clinicians should consider the possibility of priapism in cancer patients with pelvic organ invasion.

Contributors AK is the attending physician for this patient and drafted the manuscript. KK and MS edited the manuscript. The final version of the manuscript was approved by all authors.

Funding The authors have not declared a specific grant for this research from any funding agency in the public, commercial or not-for-profit sectors.

Competing interests None declared.

Patient consent for publication Obtained.

Provenance and peer review Not commissioned; externally peer reviewed.

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