

Penile Carcinoma with Umbilical Metastasis: A Rare Case Report

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ABSTRACT

Penile carcinoma with metastasis to umbilicus is a rare entity. We report a case of penile carcinoma with umbilical metastasis in a 46-year-old male. On initial presentation with penile growth over glans and shaft of the penis he was treated by total penectomy with perineal urethrostomy. Three months later, he developed a painful ulcerative mass over umbilicus. Biopsy from the ulcer confirmed metastasis from squamous cell carcinoma penis. Chemotherapy was given, but the patient succumbed to the disease after the first cycle.

INTRODUCTION

Carcinoma of penis is a slowly progressive disease. It has a predictable pattern of spread in a stepwise fashion. Initially regional, inguinal lymph node metastasis occurs, followed by pelvic nodal metastasis, and then distant spread. Umbilical tumors may be the first sign of underlying cancer or recurrence of a previous cancer [1]. Metastatic cancer of the umbilicus is known as Sister Mary Joseph's nodule. Umbilical metastasis of visceral malignancy is rare and is encountered in 1 to 3% of all intra-abdominal and/or pelvic malignancies [2]. Metastasis to umbilicus from penile carcinoma is very, very rare. Here we present a case of penile carcinoma with umbilical metastasis.

CASE REPORT

A 46-year-old male presented to us with a large ulcerative growth over the penis for 6 months. On examination, the lesion was found to involve the glans and mid shaft of the penis with palpable inguinal lymph nodes on the right side. An initial incisional biopsy was done and it revealed well-differentiated

squamous cell carcinoma, and fine needle aspiration cytology (FNAC) from the nodes was negative. The computed tomography (CT) scan of the pelvis revealed no positive pelvic lymph nodes. The patient underwent total penectomy with perineal urethrostomy with postoperative antibiotics for the palpable nodes. The histopathological examination (HPE) revealed well-differentiated squamous cell carcinoma with negative surgical margins. The patient developed a painless ulcer (4 cm x 3 cm) over the umbilicus and palpable inguinal nodes on both sides at the 3-month follow-up. The ulcer gradually increased in size with bloody discharge and became painful (Figure 1). An incisional biopsy taken from the umbilical mass revealed metastasis from squamous cell carcinoma of the penis (Figure 2). High-resolution computed tomography (HRCT) of the thorax and the contrast-enhanced CT of the abdomen was done and was negative for metastases to other sites. The first cycle of chemotherapy (cisplatin based) was given to the patient but there was no improvement. Ultimately, the patient succumbed to his illness shortly after the first cycle of chemotherapy.

KEYWORDS: Carcinoma penis, penectomy, umbilical metastasis

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DISCUSSION

Neoplastic nodules in the umbilical region are uncommon and generally represent metastases from distant tumors. The differential diagnosis of umbilical lesions is extensive and can be divided into benign and malignant (primary or metastatic) causes. Benign causes include cysts, umbilical hernias, skin tags, teratomas, angiomas, abscess, pyogenic granulomas, formation of an omphalith (due to concretions of the umbilicus), or endometriosis. Primary umbilical malignancies include basal cell carcinomas, melanomas, and mesenchymal tumors. The term "Sister Mary Joseph nodule" is used to describe a malignant umbilical tumor usually associated with advanced metastasizing intra-abdominal cancer and generally indicates a poor prognosis. This sign was first identified by Sister Mary Joseph (1856-1939) who, as a surgical assistant to Dr. William James Mayo, drew attention to the presence of a hard umbilical nodule in a patient being prepared for surgery in 1928. In various series, the most common sites of primary tumors were the stomach and colon in males and ovaries in females [3]. In addition, about 3 to 6% of cases are due to hematological malignancies, lung cancer, or breast cancer. Other uncommon primary tumors reported include those from the gallbladder, the liver, the small bowel, the appendix, the fallopian tube, the penis, the kidney, and the prostate.

Metastasis to the umbilicus can occur in several ways: 1) contiguous spread of peritoneal cancer to the anterior surface of the abdominal cavity, probably the most frequent method; 2) hematogenous spread through the arterial and venous systems (connections of the umbilical veins with the portal system and with the caval vein system; 3) lymphatic spread via the 4 sets of lymphatics that pass from the umbilical region where there are connections with axillary, inguinal, and periaortic lymph nodes; and 4) direct extension along the ligaments of embryonic origin (round ligament of the liver, the urachus, the vitellointestinal duct remnant, and the obliterated vitelline artery) that connect with the umbilicus and contain remnants of the obliterated fetal structures [4]. All the connections with multiple embryonic remnants and the extensive vascular and lymphatic communications, and the proximity of the umbilical scar to the anterior peritoneal surface, help to understand the source of metastasis to the umbilicus, mostly from the abdomen and pelvis but also from the thorax.

Primary malignant penile cancer is a rare disease. Incidence of the disease varies among different populations and is rare in developed nations. Higher incidence rates are seen in underdeveloped countries such as Uganda (2.8/100 000) and Brazil (1.5 to 3.7/100 000); the lowest incidence worldwide is

Figure 1. Ulcerated umbilical mass in a follow-up case of total penectomy for carcinoma of the penis.

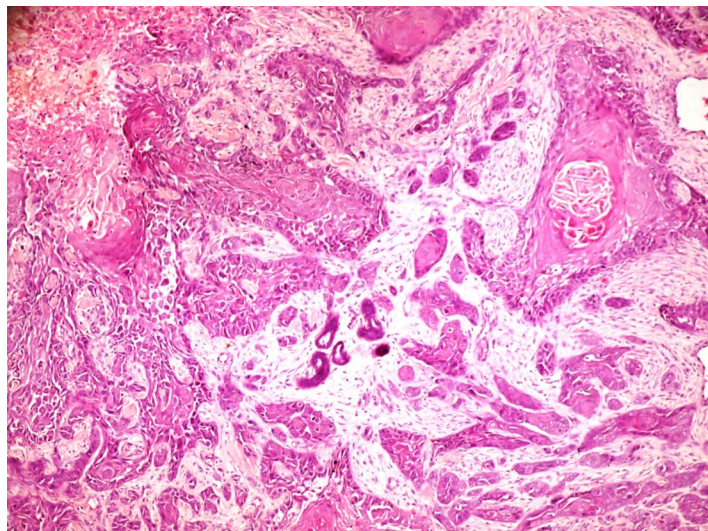
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reported in Israel (0.1/100 000) [5]. At presentation, squamous cell carcinoma is found on the glans in 48% of cases, the prepuce in 21%, the glans and prepuce in 9%, the coronal sulcus in 6% and the shaft in < 2% [6]. Squamous cell carcinoma of the usual type accounts for about 50 to 60% of all penile carcinomas. Other variants, such as verrucous carcinoma (7%), condylomatous carcinoma (7%), basaloid carcinoma (4 to 7%), and sarcomatoid carcinoma (1 to 4%) [7]. Lymphatics of the penis form richly anastomosing channels that cross the midline

Figure 2. Histology showing metastasis from squamous cell carcinoma of the penis.

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along the shaft and at the penile base. Therefore, cross-inguinal metastasis may occur. Patients with penile squamous cell carcinoma usually die within 2 years after diagnosis of the primary lesion due to uncontrollable loco-regional growth or from distant metastasis [8]. Metastatic spread to distant sites (lung, liver, bone, and brain) is uncommon and occurs in about 1 to 10% cases. Such metastases usually occur late in the course of the disease after the local lesion has been treated [9].

Histopathologic examination of the biopsies taken from the umbilical tumor should be done, which can also be used to detect the primary origin of the tumor. The hematoxylin and eosin stain may differentiate the primary and metastatic tumors. Moreover, immunohistochemical analysis may define the cellular origin in 72% of cases of unknown primary tumors.

In our patient, CT scans of the thorax and abdomen were done to rule out metastasis to other sites. Incisional biopsy from the umbilical metastasis of our patient revealed metastasis from squamous cell carcinoma of the penis. Since Sister Mary Joseph's nodule is usually a reflection of metastatic disease, the majority of patients have a poor prognosis and die within 10 months following discovery of the nodule. Depending on the type of tumor and the primary origin site, some patients can have better survival when treated aggressively with both surgery and adjunctive therapy [10]. Nevertheless, the appropriateness

of such therapy is determined by the clinical state of the patient. Due to the rarity of the tumor and a lack of definitive recommendations, treatment is individualized. Advanced stages of the disease in our patient and a good performance index were favorable in trying to improve palliation and perhaps obtain a longer survival time with chemotherapy. Unfortunately, the disease was unresponsive to the chemotherapeutic regimen used and the patient's condition rapidly deteriorated, not allowing further treatments.

REFERENCES

1. Dubreuil, A., A. Domp Martin, et al. (1998). "Umbilical metastasis or Sister Mary Joseph's nodule." *Int J Dermatol* 37(1): 7-13. [PubMed](#) ; [CrossRef](#)
2. Piura, B., M. Meirovitz, et al. (2006). "Sister Mary Joseph's nodule originating from endometrial carcinoma incidentally detected during surgery for an umbilical hernia: a case report." *Arch Gynecol Obstet* 274(6): 385-388. [PubMed](#) ; [CrossRef](#)
3. Giner Galvan, V. (1999). "[Sister Mary Joseph's nodule. Its clinical significance and management]." *An Med Interna* 16(7): 365-370. [PubMed](#)
4. Powell, F. C., A. J. Cooper, et al. (1984). "Sister Mary Joseph's nodule: a clinical and histologic study." *J Am Acad Dermatol* 10(4): 610-615. [PubMed](#) ; [CrossRef](#)
5. Curado, M. P., B. Edward, et al. (2007). In: *Cancer Incidence in Five Continents*, Vol 9. IARC Scientific Publications; Lyon, France.
6. Gillenwater, J. Y., J. T. Grayhack, et al. (1991). In: *Adult and Pediatric Urology*, 2nd ed. Mosby Year Book; St. Louis, Missouri: 1643-1681.
7. Guimaraes, G., I. Werneck da Cunha, et al. (2007). "WHO histological classification, regional metastasis and outcome in 375 surgically treated patients with penile SCC." *Mod Pthol* 676:150A.
8. Kroon, B. K., S. Horenblas, et al. (2005). "Contemporary management of penile squamous cell carcinoma." *J Surg Oncol* 89(1): 43-50. [PubMed](#) ; [CrossRef](#)
9. "Tumours of the penis." (2012). A. J. Wein, L. R. Kavoussi, A. W. Partin, C. A. Peters (eds). In: *Campbell-Walsh Urology*, 10th ed. Elsevier-Saunders; Philadelphia, Pennsylvania: 904-905.

10. Gabriele, R., M. Borghese, et al. (2004). "Sister Mary Joseph's nodule as a first sign of cancer of the cecum: report of a case." *Dis Colon Rectum* 47(1): 115-117. [PubMed](#) ; [CrossRef](#)