Pure testicular choriocarcinoma presenting as a friable hemorrhagic nodule on the lip

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INTRODUCTION

Here we present a case of metastatic cutaneous choriocarcinoma presenting as a lesion on the upper lip. This report briefly discusses choriocarcinoma, cutaneous manifestations, and prognosis.

CASE REPORT

An 18-year-old Hispanic man with a history of moderate-to-severe acne presented to the emergency department with a 3-day history of nausea and abdominal pain. The dermatology department was consulted for evaluation of a 3-week history of a gradually enlarging, painless, hemorrhagic mass on the right upper vermillion border, previously diagnosed as herpes labialis, and treated with acyclovir.

Physical examination found a nontender 4- × 3- × 2-cm exophytic, friable, violaceous hemorrhagic nodule on the right upper vermillion lip (Fig 1). Punch biopsy from the lesion on the lip was performed and sent for histopathologic examination and tissue culture (Fig 2, *A* through *C*).

Histopathologic examination of the biopsy specimen found extensive hemorrhage, epidermal necrosis, and replacement of the dermis with islands and cords of cytologically malignant neoplastic cells with a biphasic phenotype. Most of the neoplastic cells were polygonal cells with clear cytoplasm, large irregular nuclei, and prominent nucleoli arranged in sheets and nests, morphologically compatible with cytotrophoblasts. An admixture of large, multinucleated cells with pleomorphic nuclei and abundant eosinophilic cytoplasm were consistent with syncytiotrophoblasts (Fig 2, *A* and *B*). Immunohistochemical staining for human chorionic gonadotropin (hCG) showed strong staining of tumor cells (Fig 2, *C*). Tissue cultures for bacteria, acid-fast bacilli, and fungal elements were negative.

Abbreviations used:

BhCG:	beta human chorionic gonadotropin
GCT:	germ cell tumor
hCG:	human chorionic gonadotropin
LDH:	lactate dehydrogenase
NGCT:	non–germ cell tumor
NSGCT:	nonseminoma germ cell tumor
TGCT:	testicular germ cell tumor

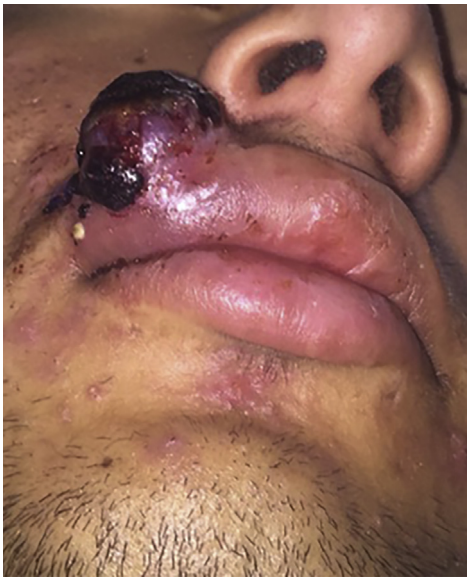

Fig 1. The hemorrhagic friable exophytic nodule with small hemorrhagic blebs and crust seen on physical examination. The lesion had been present for 3 weeks and was gradually increasing in size.

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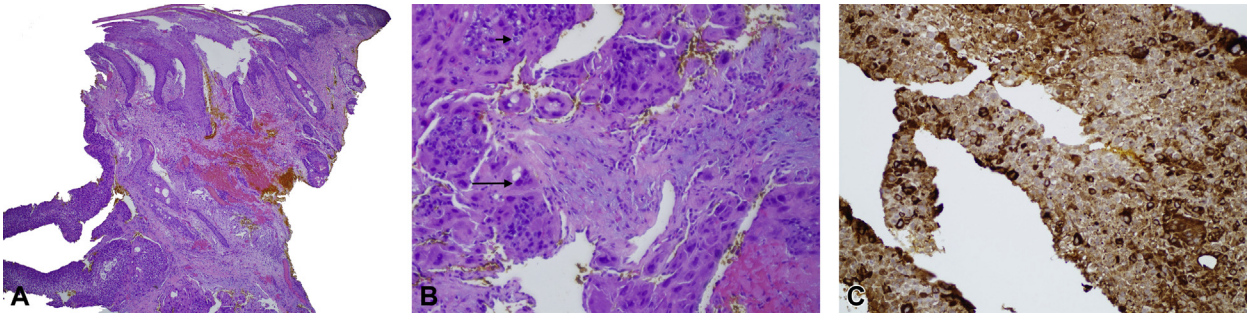

Fig 2. **A**, Punch biopsy specimen from the right upper vermillion lip. Extensive hemorrhage and replacement of the dermis with islands and cords of neoplastic cells. **B**, Dermal malignant-appearing cells. Sheets of smaller cells, some which possess cleared cytoplasm cytotrophoblasts (*short arrow*). Admixture with much larger, sometimes multinucleated cells with pleomorphic nuclei and abundant pink cytoplasm, Syncytiotrophoblast (*long arrow*). Both populations show nuclear pleomorphism. **C**, Immunohistochemical stain with hCG strongly labels both population of cells. (**A** and **B**, Hematoxylin-eosin stain; **C**, hCG stain; original magnifications: **A**, ×40; **B**, ×200; **C**, ×100.)

Together these findings suggested a diagnosis of metastatic choriocarcinoma.

Staging computed tomography found large left testicular, mediastinal, retroperitoneal, and dural masses, compatible with metastatic disease. Beta human chorionic gonadotropin (BhCG) and lactate dehydrogenase (LDH) were 85,528 IU/L and 1142 IU/L, respectively (normal values BhCG, 0-3 IU/L and LDH, 105-230 U/L). Testicular biopsy confirmed the diagnosis of pure testicular choriocarcinoma, stage IIIC. Stage IIIC choriocarcinoma is the highest stage of testicular cancer and is defined by the American Joint Committee on Cancer as at least 1 serum marker that is extremely high with cancer spread to at least 1 lymph node or nonpulmonary solid organ, or spread to a distant organ with or without high tumor markers.[1]

He received 4 cycles of bleomycin, etoposide, and cisplatin, with a good clinical response and decline of tumor markers BhCG (51 IU/L) and LDH (224 U/L). He then underwent left orchiectomy, resection of remaining mediastinal and lung metastases, and excision of the labial nodule. Five months after initial treatment at the age 19 he relapsed, manifested by elevated hCG and LDH levels. The family decided to pursue salvage therapy including autologous stem cell transplant and chemotherapy, consisting of paclitaxel, ifosfamide, and cisplatin followed by autologous stem cell transplant. Because of the increase in BhCG, he received treatment with gemcitabine/oxaliplatin. Unfortunately, these treatments failed and he is currently receiving comfort care.

DISCUSSION

Testicular germ cell tumors (TGCTs), although an uncommon malignancy in the general population, are the most frequently occurring malignancies among young men. A recent report indicates that the incidence of TGCT is increasing most rapidly among Hispanic men living in the United States and is forecast to increase over the next decade.[2] The reasons for the rapid increase in Hispanic men is unknown[3]; however, Ghazarian et al[2] postulated that it is possible that rates of TGCT among Hispanics increase with migration to the United States. Previous studies in migrants found that changes in TGCT incidence do not occur among the first generation of migrant but rather among the second generation.[2]

Testicular cancers are divided into germ cell tumors (GCTs) and non−germ cell tumors (NGCTs). GCTs account for 94% of testicular tumors and comprise seminoma and nonseminoma GCTs (NSGCTs). There are 4 subtypes of NSGCTs, including embryonal carcinoma, yolk sac tumor, teratoma, and choriocarcinoma. Of the 4 types, pure choriocarcinoma is the rarest.

Testicular choriocarcinoma is a highly malignant tumor and considered one of the rarest types of the GCT. It is composed of 2 cell types, syncytiotrophoblast and cytotrophoblast, and is characterized by secretion of hCG.[4] These tumors often arise within other tumors. Pure choriocarcinoma is even rarer and only represents 1% to 3% of all testicular GCTs and 0.19% of testicular cancers overall.[5,6]

As highlighted in this case, testicular choriocarcinomas have the potential for early hematogenous metastases due to vascular invasion. The most frequent sites of metastases are lung, liver, brain, gastrointestinal tract, spleen, and adrenal glands. Cutaneous metastasis is rare.[7] Cutaneous metastasis of testicular choriocarcinomas have been reported as angiomas, pyogenic granulomalike tumors,

hemorrhagic nodules, or nontender subcutaneous nodules.[6-9] This case highlights the importance of prompt biopsy of these lesions, as this was the first presenting symptom of this tumor, and the diagnosis was only apparent after histologic examination.

In metastatic NSGCT, the degree of serum marker elevation before initiation of therapy correlates with prognosis. The International Germ Cell Cancer Collaborative Group's prognostic classification for patients with metastatic disease incorporates hCG, α-fetoprotein, and LDH and is stratified into high-, intermediate-, and low-risk disease.[10] The presence of non—pulmonary visceral metastases such as liver, bone, and brain, elevation of hCG greater than 50,000 IU/L, and 10-fold elevation of LDH above the upper limit of normal correlate with worst prognosis.[10] Given this prognostic classification, our patient's tumor was classified as a high-risk NSGCT (poor prognosis group) based on high levels of hCG, the primary testicular tumor, and the presence of non—pulmonary visceral metastases. His calculated 5-year progression-free survival rate is 41% and his 5-year survival is rate 48%.

CONCLUSION

Metastatic testicular choriocarcinoma is a rare, highly malignant tumor most commonly seen in young adult men that can present with cutaneous metastasis. Prompt biopsy and histologic examination is key for diagnosis, especially when cutaneous metastasis is the first presenting sign as seen in this case.

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