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Metastatic Testicular Cancer Presenting as a Solitary Cervical Mass - A Case Report-

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Abstract

A 30-year-old man was admitted due to left cervical mass. Clinical diganosis was metastatic nasopharyngeal carcinoma. After surgical removal of this mass, pathologic diagnosis was metastatic mixed yolk sac tumor and mature teratoma. Radical orchiectomy was performed for the right testicular mass and pathology confirmed mixed seminoma and mature teratoma. Pathologic findings, elevated serum alpha-fetoprotein, previous history of cryptochidism and physical examination for intratesticular mass lead to correct diagnosis especially in left cervical mass of young men.

Key words : Left Cervical Mass, Testicular Cancer

Introduction

We experienced a case of 30- year-old man with metastatic testicular cancer presenting as solitary cervical mass. Although cervical metastasis of testicular cancer without other clinical manifestation and previous clinical history is extremely rare, testicular cancer must be suspected especially left sided cervical metastasis of unknown primary site in young men.

Case report

A 30-year-old man presented with a left cervical mass for several days. On physical examination, a 6.0x6.0cm smooth and nontender mass was palpable. Neck CT revealed well enhancing solid lymph nodes along the left internal jugular chain (Figure 1). Fine needle aspiration (FNA) was performed. The smear were cellular with both dehesive and cohesive fragments of tumor cells. Most of tumor cells were large round cells with prominent nucleoli within dirty background. FNA diagnosis was metastatic carcinoma. Clinical diagnosis was either metastatic tonsilar or nasopharyngeal cancer. Further examination detected no definite lesions in nasopharynx and tonsil. Excisional biopsy was done and gross examination revealed large gray brown solid mass with marked necrosis and focal cystic areas. Histologically, the solid area was composed of large round tumor cells with schiller duval bodies (Figure 2). The cystic area revealed mature squamous and columnar epitheliuns and considered as mature teratoma. Pathologic diagnosis was metastatic yolk sac tumor and mature teratoma. Laboratory data showed elevated alpha-fetoprotein 596.4 ng/ml (normal:0.0-20.0) and normal beta-human chorionic gonadotrophin 0.01 mIU/ml(normal:0.0-5.0) and lactic dehydrogenase 367 IU/L (normal:50-450). Abdominal CT revealed no definite metastatic mass and lymph nodes. He had a history of right cryoptochidism and orchiopexy was performed when he was eight years old. Physical examination revealed a round soft mass on right testis and ultrasonogram showed a 3.5x2.8cm mixed echogenic mass (Figure 3). He underwent radical orchiectomy for a right testicular mass. A well demarcated gray white solid and cystic mass, measuring 2.2x1.8cm in diameter was identified on gross examination. Histologically, the tumor was composed of two components, solid and cystic areas. Solid

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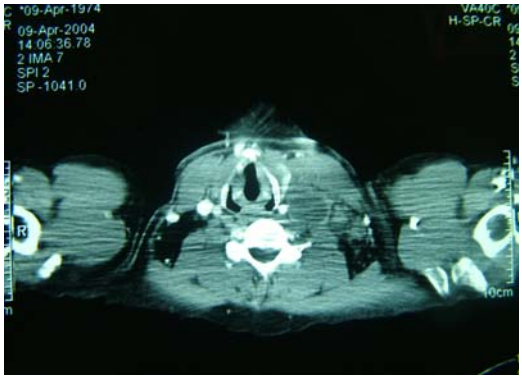

Fig. 1. Contrast enhanced neck CT shows cystic lymph node with enhancing wall and well enhancing solid lymph nodes along the left internal jugular chain.

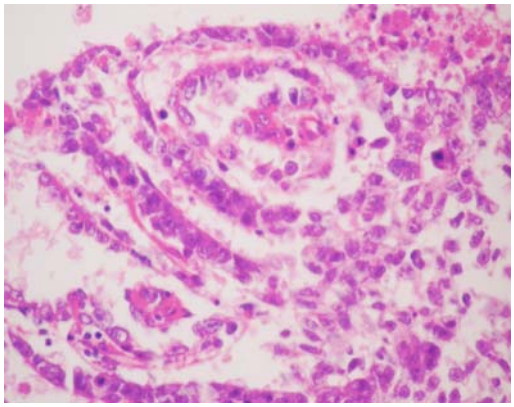

Fig. 2. Histologic finding of left neck mass: The tumor are characterized by Schiller Duval body (H&E, x400).

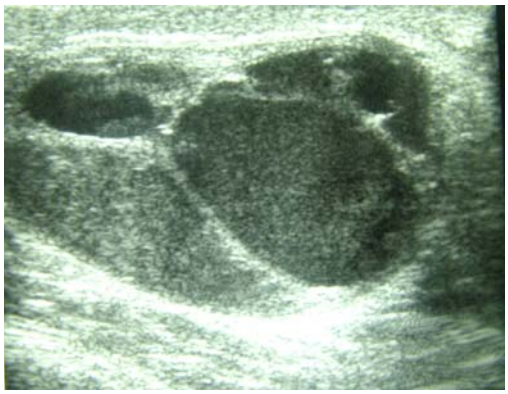

Fig. 3. Longitudinal scan of scrotal ultrasonography demonstrates a large multilocular cystic mass of the right testis. The irregular septa and echogenic debris within the tumor are seen.

area showed round large tumor cells arranged in nests. The tumor cells were characterized by round hyperchromatic nuclei and clear abundunt cytoplasm (Figure 4). The nests were surrounded by small lymphocytes. Cystic areas

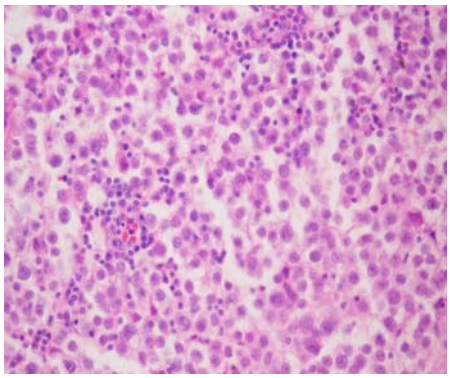

Fig. 4. Histologic finding of right testis mass: The tumor is composed of diffuse sheets of large round cells with prominent nucleoli and abundunt cytoplasm (H&E, X400).

showed mature squamous cells and columnar cells. Any evidence of yolk sac tumor area was not identified. In PAS and D-PAS stain, tumor cells had glycogen and showed negativity for AFP in immunohistochemistry. Pathologic diagnosis confirmed mixed seminoma and mature teratoma. Because cervical lymph nodes were involved, the tumor was classified as stage 3. He received three courses of chemotherapy and serum alpha fetoprotein level was normal (0.01) after orchiectomy. He remains free of disease with normal AFP level at 24 months follow-up.

Discussion

Metastasis of testicular cancer follows usually lymphatic pathway[1]. First, it involves in retroperitoneal node and then contiguously spread from abdomen to chest and neck[2]. Based on the thoracic anatomy, the thoracic duct enters the internal jugular vein in the left lower side of the neck and therefore cervical metastasis occurs almost exclusively in left sided cervical area[2]. Contiguous spread of seminoma from abdomen to chest and neck is typical. But, Bhalla et al reported an unusual supraclavicular metastasis of seminoma with no other lymphadenopathy in abdomen[3]. Cryptochidism, incomplete descent of the testis, is one of most important predisposing factors of testicular cancer[4]. It is associated with 4 to 12 percent of testicular neoplasm and seminoma is the most commonly observed histologic type[4]. In this case, patient was healthy and his

only complaint was enlarged left cervical mass. Abdominal ultrasonogram revealed no demonstrable enlarged lymph nodes. Clinical diagnosis was very difficult to find testicular cancer as primary. Additional careful physical examination for testicular mass and history taking such as cryptochidism, and laboratory evaluation for tumor marker is necessary to clarify the primary testicular tumor.

The incidence of neck metastasis in testicular cancer has been estimated to occur in about 4.5-15 % of all cases, with a neck mass being the initial sign in approximately 5%. However, only six cases of testicular cancer as initially manifestated neck metastasis revealed on English literature review (Table 1) [1,5-7]. All but one were young adult and had left or bilateral neck masses. Testicular mass was identified after histologic confirmation of neck mass. Four patients had other organ involvement such as mediatinum, lung and retroperitoneum during the evaluation of neck mass or treatment. All had embryonal carcinoma component in metastatic focus and died of their disease at 4, 7, 12, and 23 months after treatment. Overall, the reported survival for these patients is poor. Remaining three patients including present case shows localized neck metastasis and relatively better prognosis. But, experience with these patients is limited and further studies with more cases are needed.

Table 1. Cases of metastatic testicular cancer presenting as initial neck mass

case	age	neck	testis	other organ	follow-up
1	34	left, S	right, S	(-)	A(24 months)
2	17	left, TC	left, *	M, R	D(23 months)
3	17	bilateral TC	left, TC	M, R	D(4 months)
4	24	left, EC	left, S, EC	lung, abdomen	D(7 months)
5	19	left, EC	left, *	lung	D(12 months)
6	71	left, S	right, S	R	D(MI at 6 months)
7†	30	left, YST, MT	right, S	(-)	A(24 months)

*: not described, †: present case
A: alive, D: death, S: seminoma, TC: teratocarcinoma, EC: embryonal carcinoma, YST: Yolk sac tumor, MT: mature teratoma M: Mediastinum, R: Retroperitoneum, MI: Myocardiac infarct

The pathogenesis of testicular germ cell tumors has long been an area of controversy. One view of histogenesis hypothesizes that primitive malignant germ cells initially differentiate into either seminoma or embryonal carcinoma[8]. Teratoma, yolk sac tumor, and choriocarcinoma are thought to differentiate from embryonal carcinoma, whereas seminoma is incapable of further differentiation[8]. Another aspect is that seminoma may act as a precursor to all other testicular germ cell tumor[9]. The basis for considering seminoma as the common precursor includes ultrastructural study of seminoma and apparent morphologic transformation of seminoma to yolk sac tumor[9]. Also, the patients who had pure testicular seminoma revealed elevated serum AFP levels[10]. In this present case, the patient had elevated AFP level and pure seminoma in thorough-sampled orchiectomy specimen and yolk sac tumor component in metastatic focus. We think that this case represent transformation of seminoma to yolk sac tumor and seminoma can play a precursor role for the subsequent development of nonseminomatous elements. Also, the mature teratoma component in metastatic focus was explained by transformation from seminoma. But the possibility of metastasis from primary testis tumor could be considered. Because mature teratoma occuring in the postpupertal testis can be accompanied by metastases no matter how well differentiated the primary tumor is [11].

Typical FNA findings of yolk sac tumor show clusters of large round cells with prominent nucleoli and vacuolated cytoplasm, Schiller-Duval body and viscous metchromatic extracellular hyaline material[12]. Also, the background reveal necrosis and foamy macrophages. But, Schiller-Duval body, diagnostic for YST in histology are generally not appreciated in cytologic samples and cytologic features were more suggestive of a poorly differentiated carcinoma than YST, potentially leading to misdiagnosis. Moreover, without previous clinical history, cytologic diagnosis was very diffucult. Therefore knowledge of FNA finding and appropriate clinical information sholud improve the diagnostic accuracy.

국문초록

30세 남자가 좌측 경부 종괴를 주소로 내원하였다. 경부 림프절로 전이된 비인두암종이 의심되었으나, 종괴 적출술후 병리학적 진단은 전이성 혼합 생식세포종양으

로 종양 성분은 난황낭 종양과 성숙 기형종이였다. 이학적 검사에서 우측 고환에 종괴가 발견되어 근치적 고환절제술이 시행되었으며, 정상피종과 성숙 기형종의 혼합생식세포종양으로 진단되었다. 젊은 성인 남자에서 발생한 좌측 경부 종괴의 정확한 진단을 위해서는 병리학적 소견, 혈청 태아단백의 상승, 잠복고환의 과거력및 고환내 종괴에 대한 이학적 검사가 필수적이다.

중심단어: 좌측 경부 종괴, 고환암

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