

Germinal testicular tumour metastatic exclusively to the spleen

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Abstract

Non seminomatous germ cell testicular cancer (NSGTC) often metastasizes to lung and lymph nodes. Spleen metastases are rare. We present an original case of a 27 year-old man with bilateral testicular ectopia history in childhood, presenting intra abdominal mixed non seminomatous germ cell cancer (embryonal carcinoma and Yolk sac tumor) with only spleen nodules in the pre chemotherapy abdominal CT scan. Metastases to spleen were confirmed by splenectomy at the end of chemotherapy; they had the same histology than the primitive tumor.

Background

Non seminomatous germ cell testicular cancer (NSGTC) often metastasizes to lung and lymph nodes. Spleen metastases are rare. We report here an original case of NSGTC metastasizing exclusively to spleen.

Observation

It is about a 27-year-old man with bilateral testicular ectopia history in childhood, suffering from abdominal pain with constipation. Physical examination finds a pelvic mass measuring 15 cm with no inguinal lymph nodes and empty scrotum. Ultrasound and magnetic resonance imaging were performed showing a heterogeneous pelvic mass above bladder, measuring 15 cm, developed on an ectopic testis. Human chorionic gonadotropine (HCG) and alfa-fetoprotein (AFP) serum levels were screened showing normal HCG and increased AFP at 90 ng / ml. The patient had undergone surgical excision of the pelvic mass. Histopathological study revealed an incomplete resection of a mixed non seminomatous germ cell tumor (embryonal carcinoma and Yolk sac tumor) developed on an ectopic testis associated to a vestigial uterus. Post operative chest and pelvis CT scan showed multiple poorly defined hypo dense spleen nodules with retro bladder remnant uterine mass (Figures 1 and 2). The spleen nodules were considered metastatic. Post operative AFP serum level remained high (10 ng/ ml). According to the 2002 TNM classification of testicular cancer

and to the IGCCCG prognostic-based staging system for metastatic germ cell cancer (International Germ Cell Cancer Collaborative Group) [1], tumor was considered stage IIIC and belonged to the poor-prognosis group.

Consequently, four cycles of chemotherapy PEB (cisplatin, Etoposide and bleomycin) were administered to the patient. At the end of chemotherapy, AFP serum level was normalized. Abdominal CT scan showed partial regression in spleen nodules and persistence of the remnant uterine mass. A splenectomy with excision of the remnant uterus was performed. The spleen histopathological study revealed multiple nodules containing the same testicular mixed germ cell tumor excised firstly (Figures 3 and 4). Because of the persistent viable tumor, VeIP-based adjuvant chemotherapy (vinblastine, Ifosfamide and cisplatin) was proposed but denied by the patient. The patient is still alive with no evidence of disease after a follow-up of 6 years.

Discussion

Germ cells testicular cancer metastasize through lymphatic paths to reach para aortic lymph nodes than mediastinal and supra clavicle lymph nodes. Lymphatic spread of cancer cells precede usually blood dissemination, except for choriocarcinoma which is characterized by rapid cancer cells blood dissemination, responsible of lung, liver and cerebral metastases [2]. Germ cells cancer metastatic sites are represented, in decreasing order of frequency, by: retro peritoneal lymph nodes, lung, mediastinum, liver and rarely brain and bones. Other metastatic sites had been exceptionally described such as kidneys, gastro intestinal tract, spleen and pericardium.

Spleen metastases had been rarely reported in literature. In 1985, Husband et al had reported, in a retrospective series of 650 metastatic germ cells testicular cancers, 23 unusual metastatic sites. These sites included 2 cases of spleen metastases, which represent 0.3% of all patients and 8.6% of metastatic sites [3]. Later, three other cases were reported. In one of these cases, spleen metastases were diagnosed by PET scan while CT scan was negative [2, 4, 5].

In autopsy series, spleen metastases are not so rare like in clinical or radiological series. In an autopsy series of 1898 cases of solid cancers, Schön et al reported 57 spleen metastases which represent 3% of all cancers [6]. In this series, lung cancer, breast cancer and skin malignant melanoma represented the majority of autopsied cases and were the most spleen metastases associated cancers with rates of 24.6%, 15.8% and 12.3% respectively. Spleen was affected in 4 from the 9 cases of germ cells testicular cancers, representing 7% of all spleen metastases cases. All germ cells testicular cancers cases were partially or totally composed by choriocarcinoma; for spleen metastases, they were exclusively composed by choriocarcinoma cells [6].

Spleen metastases have usually lower density than the surrounding parenchyma in CT scan imaging; they can also take cystic density. A splenomegaly associated to poorly defined cystic lesions is suggestive of malignancy [7].

In our article, we present an original observation of a germ cells testicular cancer with only spleen metastases, whereas, in previous reported cases, metastases affected other organs in addition to the spleen [2,3,4]. In our case, spleen metastases were in low density and poorly defined, which was very suggestive of malignancy. Tumor was mixed, composed of embryonal carcinoma and Yolk sac tumor cells without choriocarcinoma; while literature spleen metastases cases were all composed, at least partially, by choriocarcinoma [6]. The presence of spleen metastases focuses on the importance of a complete staging before chemotherapy in order to assess all metastatic sites which would be surgically excised after chemotherapy completion.

Standard treatment of intermediate or poor prognosis metastatic non seminomatous germ cells tumors consists in 4 chemotherapy PEB cycles (cisplatinum, etoposide and bleomycine) followed by clinical, biological (AFP, HCG and LDH serum levels) and radiological evaluation by CT scan. After AFP and HCG normalization, all residual masses must be removed [1]. Residual masses concern generally lung and lymph nodes. After residual mass excision, additional chemotherapy should be performed if there are more than 10% of viable tumor cells [8].

To our knowledge, this is the second reported case, after Nguyen et al, where spleen metastases from germ cell tumor were histologically confirmed after splenectomy [2].

Conclusion

The ascertainment of spleen lesions, even solitary, during germ cells testicular cancer staging, should be considered seriously. The rarity of spleen metastases in germ cells tumors may mislead physicians to the diagnosis of benign spleen lesions (spleen cysts). Surgical removal of all residual masses must be always performed, even in sites deemed unusual.

Conflicts of interest: no conflicts of interest

Figures



Fig 1 and 2: Axial section after intravenous contrast material injection in portal time showing many different measures low dense spleen nodules

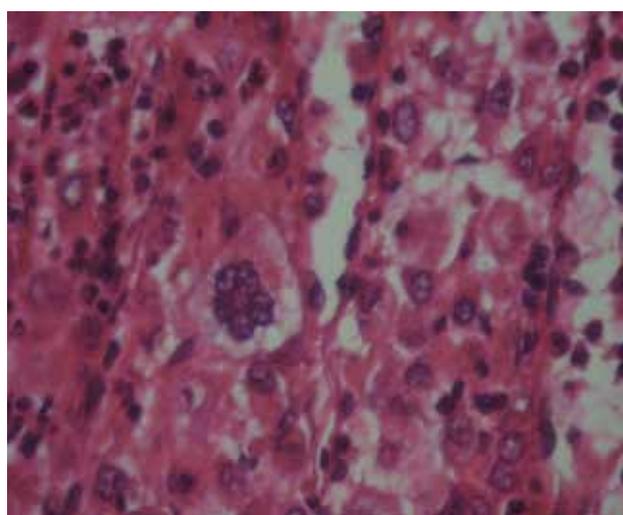


Fig 3: Massive proliferation of atypical giant cells in the spleen parenchyma

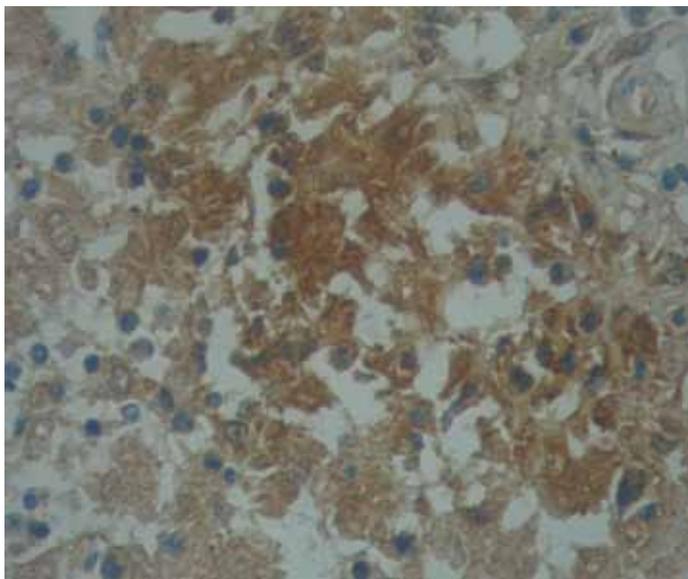


Fig 4: AFP positive immunostaining

References

1. Krege S, Beyer J, Souchon R, et al: European consensus conference on diagnosis and treatment of germ cell cancer: a report of the second meeting of the European Germ Cell Cancer Consensus group (EGCCCG): part I. *Eur Urol* 53:478-496, 2008
2. Nguyen MM, Corr AS, Evans CP: Testicular cancer metastatic exclusively to the brain and spleen. *Urology* 63:176-178, 2004
3. Husband JE, Bellamy EA : Unusual thoracoabdominal sites of metastases in testicular tumors. *AJR Am J Roentgenol* 145:1165 – 1171, 1985
4. Geetha N, Hussain BM, Ajitkumar TV, et al : Splenic metastasis in germ cell tumour. *Australas Radiol* 42 : 252 - 253, 1998
5. Lenzo NP, Moschilla G, Patrikeos A: Diffuse splenic metastases from seminoma visualized on FDG PET. *AJR Am J Roentgenol* 183: 525-52, 2004
6. Schön CA, Görg C, Ramaswamy A, et al: Splenic metastases in a large unselected autopsy series. *Pathol Res Pract* 202: 351-356, 2006
7. Piekarski J, Federle MP, Moss AA, et al: Computed tomography of the spleen. *Radiology* ; 135: 683-689, 1980
8. Krege S, Beyer J, Souchon R, et al: European consensus conference on diagnosis and treatment of germ cell cancer: a report of the second meeting of the European Germ Cell Cancer Consensus Group (EGCCCG): part II. *Eur Urol* 53 : 497-513, 2008