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Testicular seminoma metastasis to duodenum. Misdiagnosed as primary duodenal tumor



Amer Hashim Al Ani^{a,*}, Hashim Amer Al Ani^b

^a Sheikh Khalifa Hospital, Department of General Surgery, Ajman, United Arab Emirates

^b Jordanian University, Medical School, Amman, Jordan

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ABSTRACT

INTRODUCTION: Testicular cancer is the most common malignancy in Males aged 15–35 years. Its incidence comprises 0.8% of all Male cancers worldwide, with a mortality rate of 0.1%. Rarely it metastasizes to the retroperitoneum and invades upper gastrointestinal tract (GIT). Complications like intestinal obstruction, hemorrhage, and perforation are usually present.

PRESENTATION OF CASE: We report a 30 year-old male, presented to GIT unit with severe anemia due to upper GIT bleeding. Esophagogastroduodenoscopy (OGD) documented duodenal growth. Histopathology findings of biopsy taken from the growth revealed, moderately differentiated adenocarcinoma of duodenum. Abdominal computed tomogram (CT) scan showed retroperitoneal mass which could be primary duodenal tumor or para – aortic lymph node. The patient was referred to surgery unit for pancreatico – duodenectomy with the diagnosis of primary duodenal malignancy. In Surgery unit, a left testicular mass was discovered. Ultrasound revealed suspicious mass in left testis. Review of duodenal biopsy (by another pathologist) was asked for. Duodenal metastatic seminoma was the diagnosis which was confirmed by immunohistochemical Stains (that was not done before). Left testicular biopsy showed testicular seminoma. Patient was treated by high inguinal orchiectomy followed by chemotherapy. One year, later the patient had no GIT symptoms, was not anemic and started to put on weight. Follow up endoscopy showed no evidence of tumor in duodenum. There was no evidence of retroperitoneal growth by follow up CT scan.

DISCUSSION: Testis lymphatic drainage is through para aortic lymph nodes. These are in contact with GIT. When testicular malignancy metastasizes to retroperitoneum it may invade GIT causing confusion whether symptoms are primarily from GIT, or they are primarily extra intestinal.

CONCLUSION: High index of suspicion for testicular seminoma must be raised when treating young males with GIT complications like hemorrhage. Testicular seminoma is the most common solid tumor at this age. Sometimes it is the cause behind this complication.

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1. Introduction

Testicular cancer represents the most common malignancy in men from age 15–35 Years. [1,2]. Predominantly they are Germ cell tumors, with an incidence of 90–95%. Germ cell tumors can be seminomas or non-seminomas [3]. Seminomas metastasize to the GIT in less than 1% of cases. The most frequent mode of metastasis is direct extension from the retroperitoneal lymph nodes, which drain the testis. Duodenum is the most uncommon location in GIT for metastasis. Most common clinical presentation of GIT metastasis are intestinal obstruction and bleeding [4]. One must suspects' testicular malignancy when treating young male with upper GIT bleeding. Patients who develop carcinoma in one testis

have 500–1000 times increased risk of developing carcinoma in the contralateral testis [5]. Metachronous lesions are usually detected early by self-examination of the testis [5]. The literature suggests that majority (two-thirds) of Metachronous lesions occur within 5 years of the first diagnosis, although there are reports of second testicular tumors appearing as late as 23 and 25 years after the first diagnosis [5].

2. Case report

A 30-year-old male was referred to GIT unit complaining of hematemesis, upper abdominal pain radiating to the back and generalized weakness for the last week. Six months ago he had laparoscopic surgery for abdominal pain. This was converted to open cholecystectomy and appendectomy. All basic laboratory investigations were done for the patient. Anemia was the only positive findings. OGD was done. A fungating ulcerated mass invading

* Corresponding author.

E-mail address: ameralqadi2002@yahoo.com (A.H. Al Ani).

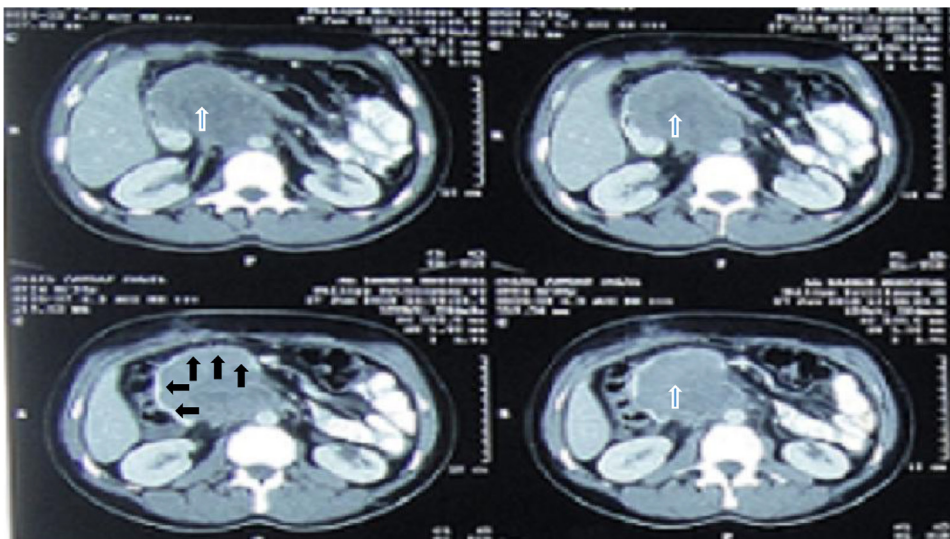


Fig. 1. Abdominal CT scan, revealed irregular mass with central necrosis (White arrow) in mid posterior aspect of abdomen, displacing and compressing the adjacent structures (Black arrows).



Fig. 2. Testicular examination revealed firm mass in the left testis (black arrow).

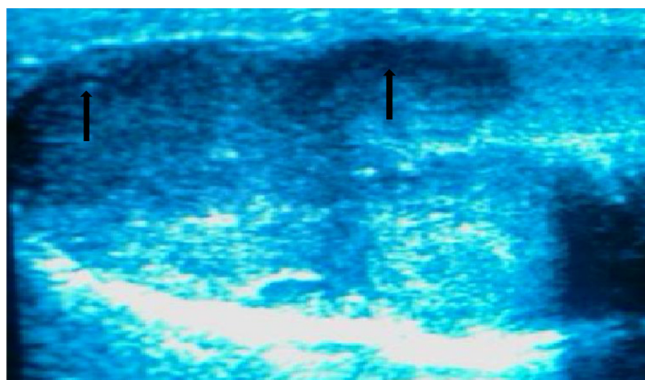


Fig. 3. Testicular ultrasound showed two heterogeneous masses (black arrows). At the lower pole of left testis.

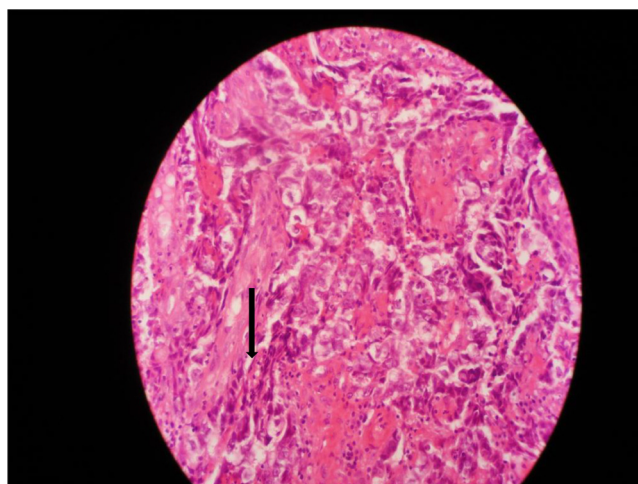


Fig. 4. A duodenal biopsy (high power) showed intestinal mucosa, with attached malignant tumor composed of sheets and cords of atypical cells with large pleomorphic nuclei (black arrow).

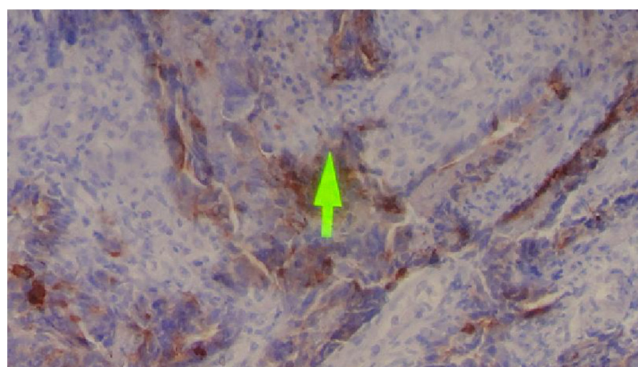


Fig. 5. Immune stains of the duodenal biopsy showed PLAP (placental Alkaline Phosphatase) positive (yellow arrow).

the second part of duodenum was discovered. It bleeds easily on touch. A biopsy was taken and the histopathology finding revealed invasive adenocarcinoma of the duodenum with moderate degree of differentiation (The pathologist did not use immunohistochemical staining to confirm his diagnosis.). Abdominal CT scan showed; soft tissue mass lesion lobulated and irregular with central necro-

sis in the mid posterior aspect of the abdomen, displacing and compressing adjacent structures measuring about 8 × 7 cm, (Fig. 1). It may represent enlarged lymph node or primary mass. The patient was referred to surgery unit for pancreatico – duodenec-

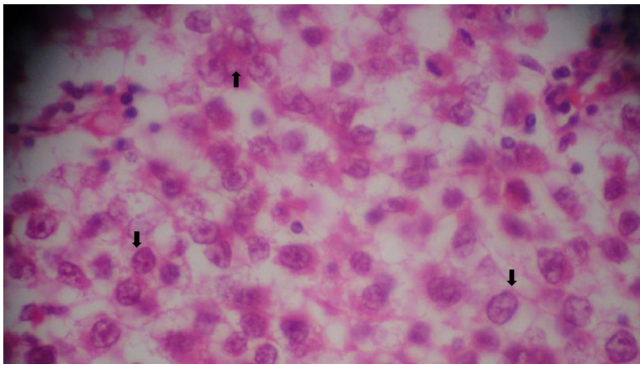


Fig. 6. Left testis histopathology result was seminoma with nests & cords of pleomorphic hyperchromatic malignant cells (black arrows).

tomy with the diagnosis of primary malignant duodenal tumor. In surgery unit the diagnosis was reviewed when a firm left testis mass was discovered (Fig. 2). Testicular ultrasound was ordered. This showed two heterogeneous masses at the lower pole of left testis each is about 2×2 cm in size (Fig. 3). A slide review for patient duodenal biopsy was requested. It showed malignant tumor composed of sheets and cords of atypical cells with large pleomorphic nuclei. Focally the tumor was forming tubules and clefts like spaces (Fig. 4). The tumor cells are focally positive for PAS (Periodic acid–Schiff Immunohistochemical Stains (which was not done before) were applied. It showed pan keratin focally positive, PLAP (Placental Alkaline Phosphatase) positive (Fig. 5). AFP (alpha-Fetoprotein), Melan A (melanocyte differentiation antigen), LCA (Leukocyte common antigen), CD117 (c-kit proto-oncogene), all are negative. These findings were consistent with metastatic testicular seminoma. Tumor markers including HCG (human chorionic gonadotropin), AFP (Alpha fetoprotein) and lactate dehydrogenase (LDH) were negative. Arrangements for left testis mass biopsy was done. Patient did not agree to preserve semen sample in semen bank. Open surgery Frozen sections was conducted and the result showed seminoma. Open left high inguinal orchiectomy was done to avoid tumor dissemination. The testis Histopathology finding was seminoma (Fig. 6): with no lymphatic or perinural invasion, with free surgical margins. Immunohistochemical Stains showed Nests & Cords of Pleomorphic hyperchromatic malignant cells, with Focal positivity of tumor cells for PAS, tumor cells were positive for PLAP The more detailed histopathological examination confirmed the result of frozen section, and formed the basis for adjuvant chemotherapy. The patient was given 4 cycles of cisplatin, bleomycin and etoposide. No radiotherapy was given. Patient was advised to examine his testis himself or by family physician periodically to detect early recurrence. Follow up one year after surgery, patient claims no hematemesis, no abdominal pain or weakness. His abdominal CT scan showed no tumor residue in the retroperitoneum (Fig. 7). His OGD showed no ulcers or masses in the duodenum.

3. Discussion

Testicular tumors are the most frequent tumors in men at their 20–30 years of age. As in the patient in this case. With an incidence of 3–5 cases in every 100,000 individuals [1,2]. Testicular tumors incidence has been increased during last decades especially in the industrialized countries [6]. The predominant tumors of testis are Germ cell tumors [3]. In this case, patient was discovered to have testicular seminoma. Statistically, more than half of the patients with testicular cancers are seminomas [7]. Less than 5% of seminomas manifest themselves with symptomatology derived from metastatic disease [4]. In this study, the patient had seminoma

metastasis to duodenum. Metastasis to the upper GIT is uncommon (<5%). The most uncommonly invaded site in the gastrointestinal tract is duodenum [8]. The most frequent mode of metastasis to GIT by seminoma is direct extension from the retroperitoneal lymph nodes, which drain the testis [8]. This was the mode of metastasis in our patient. The Most common manifestations of GIT metastasis are; intestinal obstructions and/or gastrointestinal bleeding [4]. Our patient presented with upper GIT bleeding. His primary physician did not examine him thoroughly. This is why the testicular mass was not discovered. Majority of testicular tumors present as non-painful masses [9,10]. Metastatic germ cell testicular tumor should be included in the differential diagnosis of GIT tumors in young men [11]. The presence of fungating ulcerated mass in the duodenum, is one of the presentations of testicular tumors metastasizing the GIT [8]. This must raise suspicion of testicular tumor metastasizing duodenum. Mucosal erosion, fungating and bleeding caused by lymph node metastasis are late presentations. Logically these must be preceded by obstruction and fistulation. Further investigations are needed to prove whether it is blood borne metastasis or not local invasion. Pathologist must always be informed about history and examination findings. He must confirm his diagnosis by Immunohistochemical stain even for endoscopic specimens. Stage, site of origin, histological type and high tumor burden are the most important prognostic factors [12]. Abdomen CT scan findings which raise possibility of Para aortic enlarged lymph nodes did not induce any suspicion of testicular tumor in this patient by primary physician. Ultrasound of the testis should be performed in young men with retroperitoneal or visceral masses or in any doubtful case [13]. This was not done primarily in this case. Tumor markers are important in the diagnosis and treatment of germ cell tumors, including HCG, AFP and LDH [4]. In this patient the result was negative. Only up to 30% of seminomas can present or develop an elevated HCG level during the course of the disease [12]. Normal tumor markers readings must not exclude seminoma diagnosis. High inguinal orchiectomy with ligation of the spermatic cord at the level of the internal inguinal ring is considered the standard treatment of seminoma [7]. Seminoma is a highly chemo sensitive tumor. Cisplatin based regimen have shown high success rates in seminoma treatment [11]. Long-term complications of chemo-radiotherapy include infertility [12]. Physicians must always suggest semen samples preservation in semen bank to be used if needed in future. Our patient refused this offer. Generally, primary germ cell tumors have well prognosis, whereas Extra-gonadal GCTs have a poor prognosis [10]. In our case, one year follow up did not show any tumor recurrence in the duodenum (by OGD) and in the Para aortic lymph nodes as shown by the CT scan of the abdomen.

4. Conclusion

Testicular malignancies are most common in young males and the clinicians should have a high index of suspicion when upper gastrointestinal bleeding occurs in a young male with testicular masses as this could be metastases. Failure to recognize this often affects the management adversely.

Conflict of interest

The researchers have nothing to declare (no conflict of interest).

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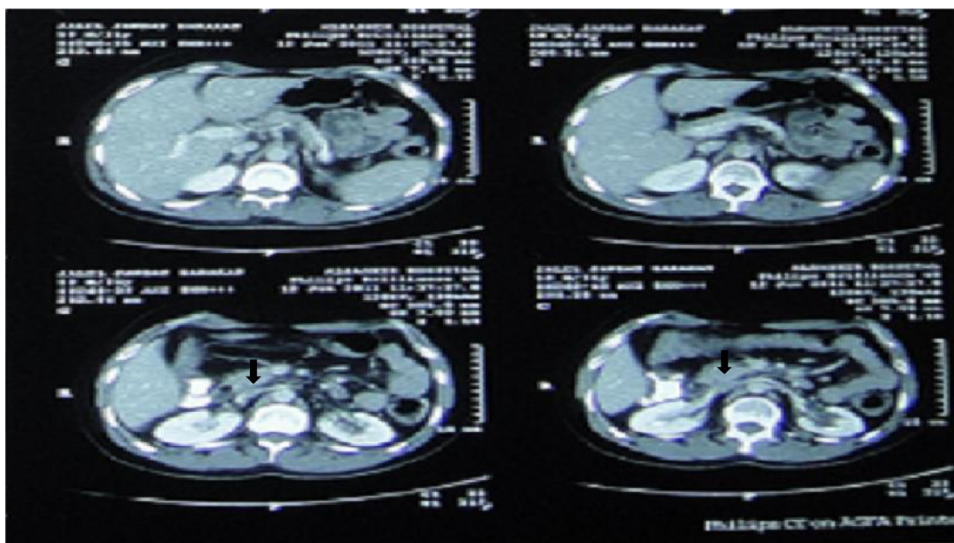


Fig. 7. A year following surgery Abdominal CT scan, showed no tumor residue in the retroperitoneum. (Black arrow).

Ethical approval

There is no concern for the Research committee on publishing this case.

Consent

Written informed consent was obtained from the patient for publication of this case report and accompanying images.

Author contribution

Study design: Author Amer Hashim Al Ani, Author Hashim Amer Al Ani .

Acquisition of data: Author Amer Hashim Al Ani, Author Hashim Amer Al Ani .

Analysis and interpretation: Author Amer Hashim Al Ani.

Manuscript drafted by: Author Amer Hashim Al Ani, Author Hashim Amer Al Ani .

Revision: Author Amer Hashim Al Ani.

Guarantor

Dr. Amer Hashim Al-Ani.

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