Umm Al-Qura Univ. Medical J. Vol. 2, No.3, pp. 20-27 (2011)
01-06 © The University Press

UQU Medical Journal

Original Article

Testicular tumor at King Faisal Specialist Hospital and Research Centre - Jeddah, Kingdom of Saudi Arabia

Anmar M. Nassir; *Assistant Prof. and consultant of Urology,Umm Al-Qura University, Makkah and King Faisal Specialist Hospital & Research Center, Jeddah, Kingdom of Saudi Arabia.*

Correspondence:
Dr. Anmar M. Nassir; MD, FRCS(C),
Assistant Prof. and consultant of Urology Surgery Department, Faculty of Medicine,
Umm AlQura University, Al Abdyah, Makkah, P.O. Box.7607, Saudi Arabia.
e.mail: amnassir@uqu.edu.sa

Received: January 26, 2010 *Accepted: March 15.2010*

الاورام الخصوية في مستشفى الملك فيصل التخصصي ومركز الأبحاث، جدة، المملكة العربية السعودية

د. أنمار محمد ناصر
استاذ مساعد و استشاري جراحة المسالك البولية, قسم الجراحة * بكلية الطب – جامعة أم القرى – مكة المكرمة – المملكة العربية السعودية. ص. ب. : 7607

الملخص العربي

المقدمة: الاورام الخصوية من الاورام الشائعه بين الرجال ما بين سن (20-35) - 94% من هذه الاورام ناشئة من الخلايا الجنسية (المنتشيه) وهي تنقسم الى 30% اورام منويه ,وليست ذات عدوانية وطبيعة نموها بطيئة ولاتنتشر سريعا و 70% غير منويه دائما ما تحدث مبكرا وتشمل الاورام المسخية و اورام الكيس المحي والسرطانات المضغيه و الميشامية.

الاهداف: تهدف هذه الدراسة لتحديد انماط الاورام الخصوية مع معرفه حصيلة علاجها.

الطريقة:اجريت هذه الدراسة الاسترجاعية في مستشفى الملك فيصل التخصصي بجدة المملكة العربية السعودية وذلك خلال الفترة من العام 2000_2009 وقد شملت الدراسة 25 مريض تم جمع معلوماتهم السريرية بأستمارة معدة مسبقا شملت الاعراض والظواهر المرضية مع الطرق العلاجية ونتائجها وقد تم تحليل المعلومات بالطريقة الاحصائية spss.

النتائج : شملت الدراسة ما مجموعه (25) مريض ووصل متوسط العمر فيهم 29.7 +/- 10.2 منهم 13 في المرحلة الاولى للسرطان و6 بالمرحلة الثانية و6 بالمرحلة الثالثة – من مَن شملتهم الدراسة 14 منهم مصابين بالاورام الخصوية غير المنوية و10 بالاورام الخصوية المنوية وواحد باورام خلايا ليدج . كل المرضى تم علاجهم جراحياً منهم 14 خضعوا للعلاج الكيماوي بعد الجراحة و 4 احتاجوا علاج اشعاعي و3 منهم تم استئصال الغدد الليمفاوية خلف البريتون و4 لم نتمكن من متابعتهم وقد تراوحت فترة المتابعة لما بعد العلاج بين 5 -91 شهراً بمتوسط 35 شهراً ومن الذين تمت متابعتهم خلال هذه الفترة وصلت نسبة الحيا ه منهم 95 %.

الخلاصة : ان الاورام الخصوية من أخطر سرطانات الذكور الا انها جيدة الانذارية اذا ما تم علاجها صحيحاً . الدراسات متعددة المراكز ضرورية و مهمة لايجاد ومعرفة اطر وخصائص هذه الاورام كما يجب ان تكون هذه الدراسات موجه لتطوير استراتيجات تشخيص وعلاج الاورام الخصوية في هذا البلد.

الكلمات الرئيسية: الاورام الخصوية - السريرية – العلاج- المملكة السعودية.

ABSTRACT

Testicular cancer is the most common cancer in males between 20 and 35 years of age. Worldwide, testicular cancer has the highest incidence in Europe. Germ cell tumors account for about 94% of testicular cancers. These cancers are separated into two groups, seminomas (30%) and nonseminomas (70%). Seminomas are less aggressive, tend to grow slowly, and usually do not metastasize. Nonseminomas include four types: yolk sac tumors, teratomas, embryonal carcinomas, and choriocarcinomas. They often occur earlier in life and grow and spread more quickly than seminomas. This article addresses the demographics, histology and treatment of testicular tumors in our institute, Jeddah, Saudi Arabia.

Objectives: To determine the pattern of testicular tumor and management out come.

Methods: This is a cross-sectional study was conducted at King faisal Specialist Hospital and Research Centre ,Jeddah,KSA. We reviewed, retrospectively, the files of all patients treated, at our institution, for testicular cancer from 2000 till 2009. The information regarding: clinical presentation, histopathological pattern, stage at presentation, modality of treatment, and complications of treatment were collected and statistically analyzed.

Results: A total of Twenty-five patients were reviewd. Average age was 29.7 (+/- 10.2 SD). Of the 25 patients, 13 patients presented with stage I, 6 patients with stage II and 6 patients with stage III disease. Fourteen patients had Nonseminoma (NS), 10 had Seminoma (S) and 1 had Leydig cell tumor. Post radical orchidectomy, 14 patients required chemotherapy, 4 patients received radiation therapy, 3 patients underwent RPLND and 3 patients were on surveillance. Of the last 3, one NS patient required RPLND 6 months later and one S patient required chemotherapy after one year. The average follow up was 35 months, ranges between 5 and 91 months. Four patients were lost during follow up. Among the rest the overall survival is 95%.

Conclusion: Testicular tumor is a serious disease of male with good prognosis if treated properly. Multicenter study is strongly required to better understand the behavior of this cancer. This should optimize our strategy of detecting and managing this disease in our country.

Key Words: *: Testicular tumor, clinical, management, Saudi Arabia.*

INTRODUCTION

Testicular cancer is the most common cancer in males between 20 and 35 years of age. Germ cell tumors account for about 94% of testicular cancers. The majority of testicular tumors originate from the germ cell, which is the principal cell type of the testis. An increasing incidence of testicular tumors, particularly in men of European origin, has been noted over the second half of the 20th century.[1] In Saudi Arabia, around 40 new cases of testicular cancer are reported annually. Although it is the most common malignancy in young male, it represents only about 1.3% of all male malignancies in the country. Such rarity has made a study of a large series difficult. Detailed epidemiological and clinical information is required to optimize the diagnostic and treatment modalities of this disease.

Worldwide testicular cancer is a rare cancer. Although in the western hemisphere it is accounting for only about 1% of all male cancers, it is the leading cause of cancer in men between the ages of 15 and 35 years, with an average age at diagnosis of 34. The annual incidence of 4 cases per 100,000 men is rising and has nearly doubled in the past 40 years.[2]

Although it accounts for 1.1-1.3% of all malignancy in the Kingdom of Saudi Arabia (KSA), testicular tumor is the most common solid tumor among young males. There are 38-44 new cases reported annually or about 0.4 case per 100,000. This is 10 times less than the west.[3,4] Testicular cancer is considered nowadays one of the most curable solid neoplasms. More than 90 percent of patients with newly diagnosed germ-cell tumors are cured, and delay in diagnosis correlates with a higher stage at presentation for treatment. The dramatic improvement in survival resulting from the combination of effective diagnostic, surgical technique, and multidrug chemotherapeutic regimens.[5]

In recent years, little is known or published about the demography, clinical characteristics, and prognosis of testicular tumors in KSA. Over the past few decades, there were many changes in the medical care facilities as well as patient awareness and education.[6,7,8]

OBJECTIVES

To determine the pattern of testicular tumor and management out come

MATERIAL AND METHODS

The study is a retrospective review of the medical records of patient with established diagnosis of testicular tumor who were treated at King Faisal Specialist Hospital and Research Centre, Jeddah (KFSHRC-Jed.), Saudi Arabia between 2000 and 2009. We collected the file numbers from the operative lists and the oncology data unit at KFSHRC-J. Our review includes the clinical feature, histological type, stage, modality of treatment used and follow up.

RESULTS

Twenty-five patients were found in our records. Mean age was 29.7 (+/- 10.2 SD), ranging between 19 and 60. The tumors were two times more in the right side than the left. About half of the patients presented with painful swelling (Table1). Thirteen patients presented with stage I, 6 patients with stage II and 6 patients with stage III disease. Of the 25 patients, 14 (56%) had Nonseminoma (NS), 10 (40%) had Seminoma (S) and 1 (4%) had Leydig cell tumor. In regards to germ cell tumor (GCT) the NS group presented at younger age than S group (Table 1 & 2).

Table 1: Clinical Features at presentation

	All testicular tumors	S	NS
Mean Age (SD)	29.7 (+/- 10.2)	36.7 (+/- 12.5)	25 (+/- 4.6)
History of UDT	1 (4%)	1 (10%)	-
Site			
Right	17 (68%)	5 (50%)	11 (79%)
Left	8 (32%)	5 (50%)	3 (21%)
Scrotal Swelling	23 (92%)	8 (80%)	14 (100%)
Pain	12 (48%)	5 (50%)	6 (43%)
Mets. at presentation			
Lung	5 (20%)	-	3 (21%)
Inguinal L.N		1 (10%)	-
Brain		-	1 (7%)

(S=Seminoma, NS=Nonseminoma, Mets= metastasis, LN= lymph node, SD= standard deviation)

Table 2: Age - group distribution according to histological type.

Age group	All testicular tumors	S	NS
< 21	3	0	3
21 – 30	16	5	10
31 – 40	4	3	1
41 – 50	1	1	0
51 - 60	3	3	0
> 60	0	0	0

(S=Seminoma, NS=Nonseminoma)

Post radical orchidectomy, 14 patients required chemotherapy, 4 received radiation therapy (RT), 3 patients underwent retroperitoneal lymph node dissection (RPLND) and 3 patients were on surveillance. Around two third responded to the chemotherapy. Nevertheless, about

one third of them developed both neutropenia and pulmonary toxicity. All of complications were in the NS group. Of both S and NS patients, a small number received RT with 50% response rate and no reported complications (Table 3).

Table 3: The patient's follow up, treatment and prognosis.

	S	NS
No. of pt. Total	10	14
Lost F/U	3	1
F/U		
Range (month)	9 -57	5 – 91
Mean (SD)	30.4(16.4)	24.3(22.2)
Mets.		
Lung		2
Liver	1	1
Nonregional L.N		2
Death	0	1
Treatment		
Surveillance	2/10 (20%)	1/14 (7%)
Chemotherapy	3/10 (30%)	11/14 (78%)
Respond	2/3 (67%)	7/11 (64%)
Relapse	0/2 (0%)	1/7 (14%)
Complications Neutropenia, Pulmonary	0	5/11 (45%)
Radiotherapy	3 (30%)	1/14 (7%)
Respond	1/3(33%)	1/1(100%)
Complication .	0	0
RPLND	0	3/14 (21%)

(S=Seminoma, NS=Nonseminoma, F/U= follow up, Mets= metastasis, RPLND= retro peritoneal lymph node dissection, SD= standard deviation)

Of the 3 patients who were on surveillance,[2] were of the S group. One S patient required chemotherapy after one year. The other NS patient required RPLND after 6 months. The average follow up of all patients was 35 months, ranges between 5 and 91 months. Six patients developed distant metastasis, mostly among NS group. Four patients were lost during follow up. Among the rest the overall survival was 95% (Table 3).

More than quarter of the causes of presenting abdominal pain of the patients in this study were intestinal obstruction 66 (26.6%) more than half of them were Africans 38 (54.3%), which included complicated hernias and adhesions. Acute appendicitis 52 (20.8%) of the total patients, most of them were perforated. The other causes were cholecystitis 28(11.2%),

perforated peptic ulcer 24(9.6%), pancreatitis 16 (6.4%), ischemic bowel 8 (3.2%). Non-surgical cause was seen in 56 patient (23.2%). 34 (14.4%) 0f the them were labeled as non specific abdominal pain and 22 (8.8%) as renal cause. All non surgical patients were made by clinical resolution of the symptoms or diagnostic laboratory results Tables II & III, In this study no acute abdominal gynaecological.pain were reported.

DISCUSSION

Acute In comparison to old data seen in KSA,[9] patients in our study had different demography, presented at younger ages, had less history of undescended testis, complained more of discomfort and diagnosed at earlier stages (Table 1,3). The difference in documenting painful mass is probably owing to more detailed history or data collection. International data revealed that scrotal pain with or without a mass occurs in up to 50% of testicular cancer presentations.[10] We encountered higher NS:S ratio in comparison to the old data in KSA as well as to international studies.[11,14] No obvious explanation to this variation. Availability of chemotherapy in our referral centre is a possible reason.

As in most tertiary care centers worldwide, our treatment decision after orchiectomy depends on staging (table 3). Lower stage seminomas are treated with surveillance or RT post orchiectomy.[15] Nonseminomas may require RPLND and chemotherapy. Higher categories are typically treated with chemotherapy, with or without further surgery.

Because of the young age at diagnosis, long survival, and potential carcinogenicity of RT, postorchiectomy surveillance of Stage I seminoma is an attractive alternative. In a series of 93 patients who underwent surveillance for a similar stage, the 5-year actuarial relapse-free survival rate was 78%. Relapse was more common in those with known adverse prognostic factors (rete invasion or size greater than 4 cm). The actuarial 5-year relapse free rate was 86%, 71%, and 50% for patients with no risk factor, one risk factor, or both risk factors, respectively. The disease-specific survival rate at 5 years was 96% [14] among our S patients 2 patients underwent surveillance while 3 received RT, and 1 responded to RT.

With appropriate treatment, survival rates from GCT are excellent,[15] In the current era of effective chemotherapy, most (but not all) patients can be salvaged despite delays in diagnosis and, consequently, more advanced disease.[9,16] GCT have been considered a curable malignancy since the introduction of cisplati. More than half (56%) of our patients received chemotherapy with good response (66%) (table3), but more than a third (36%) reported significant complication. It is known that patients with markedly elevated tumor marker levels or extrapulmonary metastasis are classified into the poor-prognosis group, for whom 5-year overall survival is 48–61%. A total of 16% of our patients, mainly in the NS, presented with metastasis (table 1), which is within the international range (11-30%).[17] Even though, the overall survival of our study population was 95%, which is in concurrence with international figures. According to the National Cancer Institute, the overall 5-year survival rate from testicular cancer was 95.3% between 1999 and 2006. If the cancer was confined to the testis at the time of diagnosis, the survival rate was 99.2% and dropped only slightly to 96% with regional extension. For patients with distant metastases, the survival rate was 71.5 %.
All efforts should be spent to detect testicular cancer at an earlier stage. This can minimize morbidity of treatment. Akin to case finding is the concept of testicular self-examination (TSE) and increasing awareness of this disease among young men. Numerous recent studies

have demonstrated that young men generally are ignorant regarding testicular cancer and TSE.[9]

The most relevant patient-dependent prognostic factor in testicular cancer is early presentation. Symptomatic delay has a proven negative impact on disease stage, treatment outcome, and mortality. Poor public awareness of the disease and a lack of TSE are presumed reasons for symptomatic delay and late presentation. There has been considerable effort to examine possible reasons for delayed presentations and to heighten public awareness of testicular cancer and encourage TSE.[18]

Testicular tumor is a serious disease of male with good prognosis if treated properly. Multicenter study is strongly required to better understand the behavior of this cancer. This should optimize our strategy of detecting and managing this disease in our country.

CONCLUSION

Testicular tumor is a serious disease of male with good prognosis if treated properly. Multicenter study is strongly required to better understand the behavior of this cancer. Our result matching with other centre world-wide. This should optimize our strategy of detecting and managing this disease in our country.

REFERENCES

1. Coleman MP, Esteve J, Damiecki p, etal., Trend in cancer incidence and mortality.: IARC Sci Publ.1993: 121;1 806

2. Wampler SM, Llanes M. Common scrotal and testicular problems. Prim Care. 2010; 37:613-26.

3. Al-Eid HS, Manalo MS, Bazarbashi S, Al-Zahrani A. Cancer Incidence Report. 2004 Saudi Cancer Registry. KSA Ministry of Health.. Available at: http://www.scr.org.sa Accessed Dec, 2010.

4. Al-Eid HS, Manalo MS, Bazarbashi S, Al-Zahrani A. Cancer Incidence Report. 2006 Saudi Cancer Registry. KSA Ministry of Health.. Available at: http://www.scr.org.sa Accessed Dec, 2010.

5. Bosl GJ, Motzer RJ. Testicular germ-cell cancer. N Engl J Med. 1997; 337:242-53.

6. Health Statistics Book for the year of 2008. Available at: http://www.moh.gov.sa/statistics/s2008/2008.html. Accessed Dec, 2010.

7. El-Bushra ES. Health care pattern and planning in Saudi Arabia. GeoJournal. 1989; 18: 361-8.

8. Al-Awami SM. Surgery in Saudi Arabia. Arch Surg. 2000; 135:354-7.

9. El-Senoussi MA, Bissada NK, El-Akkad S, etal. Epidemiology and Clinical Characteristics of testicular Tumors in Saudi Arabia: King Faisal Specialist Hospital and Research Centre Experience:; Journal of Surgical Oncology 1987; 35: 39-41.

10. Moul JW. Timely diagnosis of testicular cancer. Urol Clin North Am. 2007; 34:109-17.

11. Montgomery JS, Bloom DA. The diagnosis and management of scrotal masses. Med Clin North Am. 2011; 95:235-44.

12. Andayani YD, Safei S. Pattern of Germ Cell Testicular Carcinoma in Dharmais Cancer Hospital between January 2000-December 2004., Acta Med Indones. 2008; 40:11-3.

13. Nguyen MM, Ellison LM.Testicular pattern in Asian-American: An opportunity for public health education to impact outcome.urol J. 2005;66: 606-9.

14. Gajendran VK, Nguyen M, Ellison LM. Testicular cancer pattern in African-American men. Urol.J.;2005 ;66 602-6.

15. Tyldesley S, Voduc D, McKenzie M, etal. Surveillance of stage I testicular seminoma: British Columbia Cancer Agency Experience 1992 to 2002. Urology. 2006; 67:594-8.

16. Tanaka T, Kitamura H, Takahashi A, etal. Long-term outcome of chemotherapy for advanced testicular and extragonadal germ cell tumors: a single-center 27-year experience. Jpn J Clin Oncol. 2010; 40:73-8.

17. Gospodarowicz M. Testicular cancer patients: considerations in long-term follow-up. Hematol Oncol Clin North Am. 2008; 22:245-55.

18. Casey RG, Grainger R, Butler MR, etal. Public awareness of testis cancer and the prevalence of testicular self-examination-changing patterns over 20 years. Urology. 2010; 76:915-8.