December 2002

Post-chemotherapy residual mass in stage IIC seminomatous testicular tumor

N A. Ahmad
Aga Khan University

S R. Biyabani
Aga Khan University

Farhat Abbas
Aga Khan University

Post-Chemotherapy Residual Mass in Stage IIC Seminomatous Testicular Tumor

N. A. Ahmad,S. R. Biyabani,F. Abbas (Department of Surgery, Section of Urology, The Aga Khan University Hospital, Karachi.)

Introduction

The management of patients with residual masses following chemotherapy for advanced seminoma remains a difficult problem with no clear guidelines. While most patients with advanced seminoma achieve a complete or partial response with cisplatin based chemotherapy[1], a significant number will reveal a residual mass on follow up CT scan or MR imaging[2,3]. Management options for post chemotherapy residual mass in a case of seminoma include close observation, radiation therapy and excisional surgery. While 80 to 85% of residual masses represent either fibrosis or necrotic tissue needing no further therapy, 10 to 15% may contain viable tumor which, if not recognized and effectively treated, may be lethal. A case of a stage II seminoma with post chemotherapy residual mass is presented and contemporary literature on this topic is reviewed.

Case Report

A 36-year-old male presented in 1998 with an 8-month history of a left sided painless scrotal swelling. There was no prior history of trauma, urinary tract infection or urethral discharge. He was married with two daughters.

Examination revealed a 14x10 cm, non-tender, left testicular mass. Rest of general physical, systemic and genital examination was normal. Urinanalysis, blood counts and routine chemistry were normal. Serum n-human chorionic gonadotrophin (B-3-HCG) was <2mIU/ml (normal:
0-5), alpha fetoprotein (AFP) was 1.5 IU/mL (normal: 0.5-5.0) and lactic dehydrogenase (LDH) was 539 lU/L (normal: 253-548). Scrotal ultrasound confirmed a left sided solid testicular tumor. A left inguinal orchidectomy was performed. Histopathology revealed well-differentiated testicular seminoma with vascular invasion. Subsequent workup with chest X-ray and CT scan of abdomen and pelvis showed no metastasis. The patient was referred for adjuvant low-dose radiation therapy to the para-aortic and left-sided pelvic lymph nodes. As he had horseshoe kidneys and wished for a son from future pregnancy, he opted not to receive radiation therapy due risk of post radiation infertility and was lost to follow-up.

One year later, he presented with upper abdominal pain and weight loss. Examination revealed large upper abdominal mass. Tumor markers were 13-HCG 109.5 mIU/ml (0-5), AFP 6.9 lU/mi (0.5-5.0), and LDH 11,566 lU/L (253-548). A CT scan showed 20x18 cm para-aortic lymph nodal mass (Figure 1).

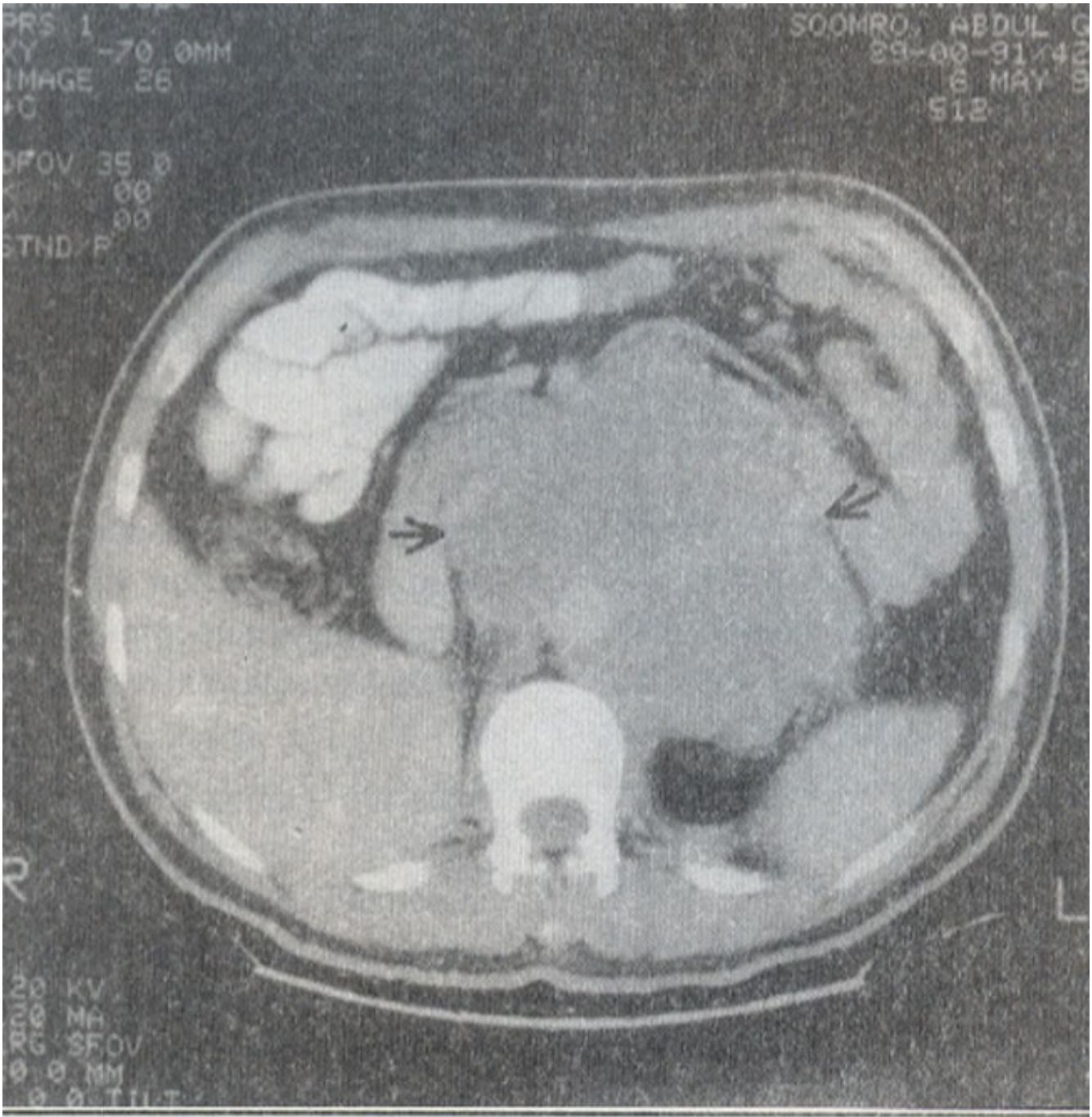

Figure 1. CT scan abdomen showing 20x18 cm para-aortic lymph nodal mass (arrows)

Chest X-ray was negative for metastasis. He received four cycles of combination chemotherapy with cisplatin, etoposide, bleomycin and prednisolone, which relieved his symptoms, and the abdominal mass resolved. Post chemotherapy, all tumor markers normalized. CT scan following chemotherapy showed a 4.2x2.5 cm residual mass in para-aortic region (Figure 2).

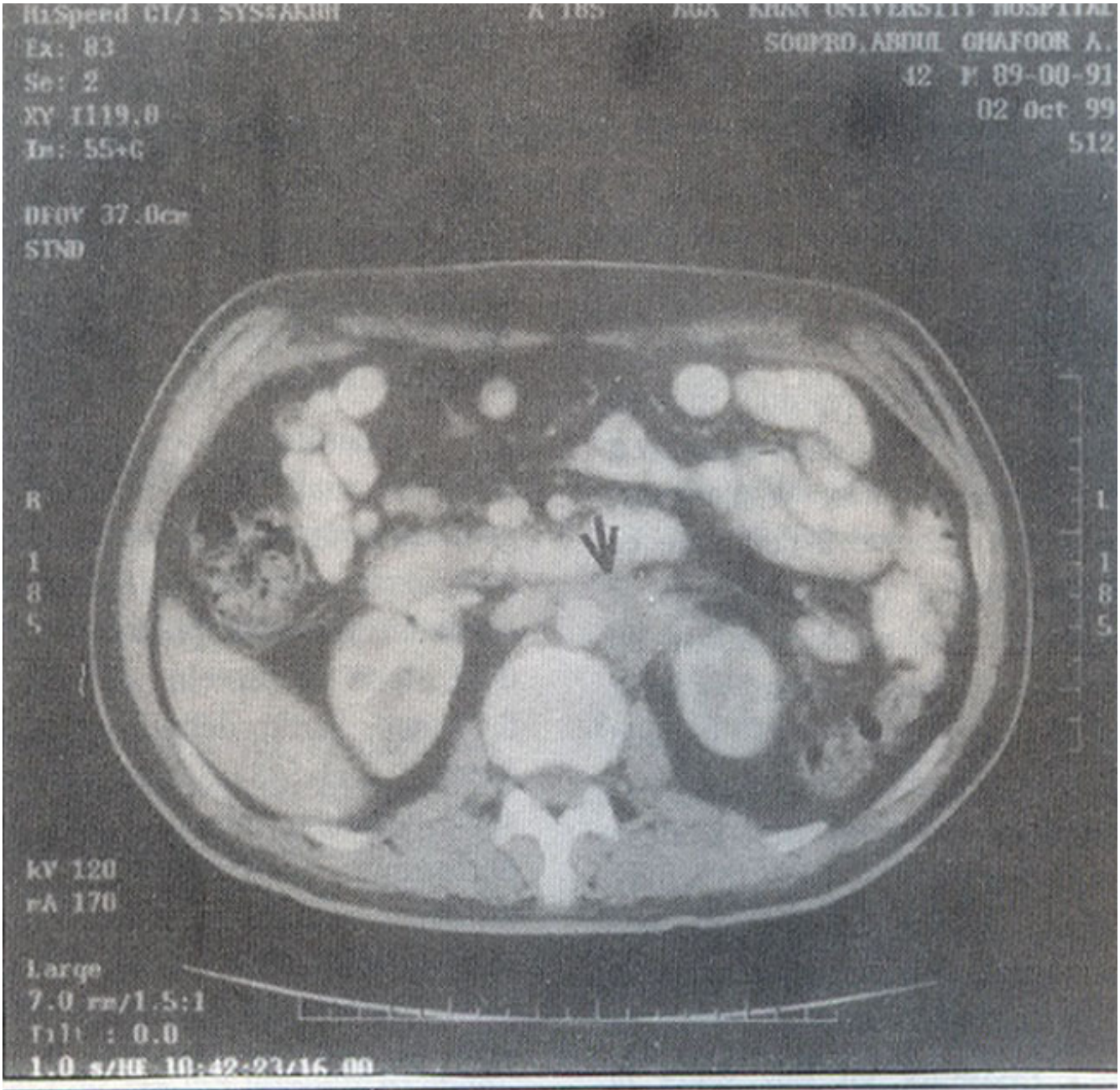

Figure 2. Post chemotherapy CT scan abdomen showing a 4.2x2.5 cm residual mass in para-aortic region (arrows).

He received 3000 cGy of radiation therapy and he is now free of disease 20 months post radiation therapy.

Discussion

The key question in post-chemotherapy residual masses in patients with advanced seminoma is whether such masses contain viable tumor or not? This information is obviously helpful to dictate further therapy and for prognosis.

Testicular tumor markers are usually of little help as only a small number of patients with seminorna have pretreatment elevation in these markers. Hence, post chemotherapy tumor markers survaillance is not reliable for residual or recurrent disease in such patients.

Some of the contemporary studies addressing this issue are summarized in the Table[4-7].

Table. Contemporary series describing the presence of viable tumor in residual masses (post chemotherapy) in patients with advanced seminoma.

Series	Total No. of pts.	Post-chemotherapy residual mass			
		Size (cm)	No.	Viable tumor	
				No.	%
Stephen et al[4]	21	>3cm	9	0	0
		<3 cm	12	0	0
Heidi et al[5]	104	>3 cm	30	8	28
		<3 cm	74	2	3
Herr et al[6]	55	>3 cm	27	8	31
		<3 cm	28	0	0
Ravi et al[7]	43	>3 cm WD	11	6	55
		>3 cm PD	14	1	7
		<3 cm	17	0	0

WD= well defined
PD= poorly defined

The size and the radiologic appearance of the residual mass seem to be important. Studies have, shown that well-defined masses, which are more than 3 cm in size, may harbor residual tumor in 28 to 55% of cases[5-9]. Such masses usually tend to be distinct from the surrounding structures. In contrast, poorly defined masses, especially those less than 3 cm in size, frequently represent fibrosis. These masses usually have obliterated radiologic planes and merge with great vessels, the psoas muscles and other retroperitoneal structures. Attempts at surgical excision of such masses representing fibrosis are usually unsuccessful.

Additional therapy for advanced seminoma may be of limited value in patients not showing complete response to adequate chemotherapy[10-13]. The options include observation, excisional surgery, radiation therapy, and high dose intensive salvage chemotherapy[14]. The overall disease free survival may not be significantly different between those patients who are observed versus those who receive adjuvant treatment[4,10-13]. Herr et al[6] reviewed the contemporary literature on outcome of additional treatment strategies in patients with post chemotherapy residual masses. They found treatment failure rates of 12% with additional surgery, 16% with adjuvant radiation therapy, and 14% in those who were only

observed. They however, mention the possible bias of more advanced disease in patients needing to undergo surgery.

Patients with residual, well defmed masses of less than 3 cm in size or poorly defined masses of more than 3 cm in size, may best be served by surveillance, as most such masses would represent fibrosis. Adjuvant treatment in such cases is reserved for progressive disease. Surgical excision is usually unsuccessful and disease recurrence is best managed by either high dose intensive salvage chemotherapy[14] or radiation therapy. Conversely, well-defined masses, more than 3 cm in size are best managed by excisional surgery. Alternatively, radiation therapy may be employed.

Our case exemplifies the importance of adjuvant low-dose radiation therapy to para aortic and ipsilateral pelvic group of lymph nodes in clinical stage I seminoma
because of the risk of occult metastasis. In addition, radiation therapy is useful in managing post chemotherapy residual mass in patients with testicular seminoma.

References

1.Mencel P3, Motzer RJ, Mazumdar M, et al. Advanced seminoma: treatment results, survival and prognostic factors in 142 patients. 3. Clin. Oncol., 1994; 12: 120-26.

2.Lochrer P3, Birch R, Williams SD, et al. Chemotherapy for metastatic seminoma; Southern cancer study group expericncc. J, Clin. Oncol., 1987; 5: 1212-20.

3.Motzcr R, Bosei 0, Heclan R. et al, Residual mass: an indication for further therapy in patients with advanced seminoma following systemic chemotherapy. J. Clin. Oncol., 1987; 5: 1064-70.

4.Stephen MS. Lawrence HE, Dewey JC, et al. Management of post chemotherapy residual mass in patients with advanced serninoma: Indiana University Experience. J. Clin. Oncol,, 1989; 7: 1497-1 503.

5.Heidi SP, Robert H, Motzer JR, et al. Management of residual mass in advanced seminoma: results and recommendations from Memorial Sloan Kettering Cancer Center. 3. Clin. Oncol., 1996; 14: 454-60,

6.Herr HW, Sheinfleid J, Puc HS, et al. Surgery for a post chemotherapy residual mass in seminoma, J. Urol., 1997; 157: 860-62.

7,Ravi R, Ong J, Oliver RID, et al. Ihe management of residual masses after chemotherapy in metastatic seminoina. BJU. Int., 1999; 83: 649-53,

8.Herr HW, Bosi G. Residual mass after chemotherapy for serninoma treated with radiotherapy: changing concepts of management. J. Urol., 1987; 137:1234-35.

9.Stomper PC, Jocheison MS. Friedman EL, et al. CT evaluation of advanced seminoma treated with chemotherapy. AJR., 1986; 146: 745-48.

10.Peckham MJ, Honch A, Hendry WF. Advanced scminoma: treatment with cisplatin based chemotherapy. Br. J. Cancer, 1985; 52: 7-13.

11.Schmoll Hi, Harstrick A, Bokermayer C, et a!. Single agent carboplatin for advanced seminoma. A phase It study. Cancer, 1993; 72:237-39.

12.Horwich A, Dearnaley DP, Duchesne GM, et al, Simple non toxic treatment of advanced metastatic seminoma with carboplatin. J. Clin. Oncol., 1989; 7: 1150-56.

13.Friedman E, Garnick MB, Stomper P, et al: Therapeutic guidelines and results in advanced seminoma. 3. Clin. Oncol., 1985; 3: 1325-32.

14.Motzcr RJ, Mazumdar M, Bosi, Gi, et al. High dose carboplatin, etoposide and cyclophosphamide for patients with refractory germ ccli tumor: treatment results and prognostic factors for survival and toxicity. J. Clin. Oncol., 1996; 14: 1098-105.