

Acta Medica Okayama

Volume 34, Issue 5

1980

Article 3

NOVEMBER 1980

Primary testicular plasmacytoma: a case report.

Tetsuzo Kaneshige*

Toshihiko Asahi†

Yosuke Matsumura‡

Hiroyuki Ohmori**

Tsukasa Okamoto††

Toshio Tanaka‡‡

*Okayama University,

†Okayama University,

‡Okayama University,

**Okayama University,

††Fukuyama Hospital,

‡‡Okayama University,

Primary testicular plasmacytoma: a case report.*

Tetsuzo Kaneshige, Toshihiko Asahi, Yosuke Matsumura, Hiroyuki Ohmori,
Tsukasa Okamoto, and Toshio Tanaka

Abstract

A 73-year-old man with a left testicular tumor is presented. Orchiectomy was performed and the tumor was diagnosed as a plasmacytoma. There has been no bone lesion or immunoglobulin abnormality during a follow-up period more than one year. For several reasons, the tumor was regarded as a primary plasmacytoma of the testicle. The literature concerning testicular plasmacytoma is reviewed briefly.

KEYWORDS: plasmacytoma, testis.

Acta Med. Okayama 34, (5), 315—322 (1980)

PRIMARY TESTICULAR PLASMACYTOMA : A CASE REPORT

Tetsuzo KANESHIGE, Toshihiko ASAHI, Yosuke MATSUMURA,
Hiroyuki OHMORI, Tsukasa OKAMOTO*
and Toshio TANAKA**

Department of Urology, Okayama University Medical School Okayama 700, Japan;

**Department of Pathology National Fukuyama Hospital, Fukuyama 721, Japan;*

***Pathology Section, Central Laboratories, Okayama University Hospital,
Okayama 700, Japan*

Received June 23, 1980

Abstract. A 73-year-old man with a left testicular tumor is presented. Orchiectomy was performed and the tumor was diagnosed as a plasmacytoma. There has been no bone lesion or immunoglobulin abnormality during a follow-up period more than one year. For several reasons, the tumor was regarded as a primary plasmacytoma of the testicle. The literature concerning testicular plasmacytoma is reviewed briefly.

Key words: plasmacytoma, testis.

Plasmacytoma of the testicle is extremely rare and only 37 cases have been reported. We have observed a patient with a testicular plasmacytoma who had neither bone lesions nor immunoglobulin abnormalities.

CASE PRESENTATION

A 73-year-old farmer was admitted to the Department of Urology, Okayama University Hospital, in November 1978 because of a painless swelling of the left scrotal contents which had been present for one month. On examination, the left scrotal contents were enlarged to the size of a goose egg with mild tenderness. Other urogenital areas including the right scrotum, prostate, penis, kidneys, ureters and urinary bladder were normal. No lymphadenopathy was present.

In addition to the Table 1, laboratory data including liver and kidney functions and serum electrolytes were all within normal limits. Radiologically, an intravenous pyelogram was normal. Surveys including bone scintigram and x-ray films such as the skull, entire spine, ribs, pelvis and proximal femurs showed only senile degenerative change at the fifth lumbar vertebra.

The diagnosis of a testicular tumor was made, and a left radical orchiectomy was performed four days after admission. The specimen measured $5.6 \times 4.3 \times$

TABLE 1. LABORATORY DATA

	November 1978	December 1979
BSR	5/1h, 15/2h	13/1h, 30/2h
RBC (/mm ³)	434 × 10 ⁴	443 × 10 ⁴
Hb (g/dl)	13.2	13.8
Ht (%)	40.2	43.1
WBC (/mm ³)	6,800	6,800
Differen. (%)		
St.	2	3
Seg.	42	62
Eo.	2	0
Ba.	0	1
Mo.	1	0
Ly.	53	34
Thrombo. (/mm ³)	22.6 × 10 ⁴	18.2 × 10 ⁴
Serum Prot. (g/dl)	7.6	7.4
Alb. (%)	62.3	64.6
Glob. (%)	37.3	35.2
Alpha 1	2.4	1.7
Alpha 2	7.9	6.4
Beta	13.3	10.1
Gamma	13.2	17.0
A/G	1.65	1.82
Immunoglobulins* (mg/dl)		
IgG	1,380	1,300
IgA	216	337
IgM	104	70
Immunoelectrophoresis	No M-component	No M-component
Myelogram		
NCC (/mm ³)	6.6 × 10 ⁴	
M/E	2.5	
Plasma cells (%)	1.6	
Bence-Jones Prot.	(-)	(-)
LDH (u)	263	354
Alpha-fetoprotein	Normal	
CEA (ng/ml)	1.9	

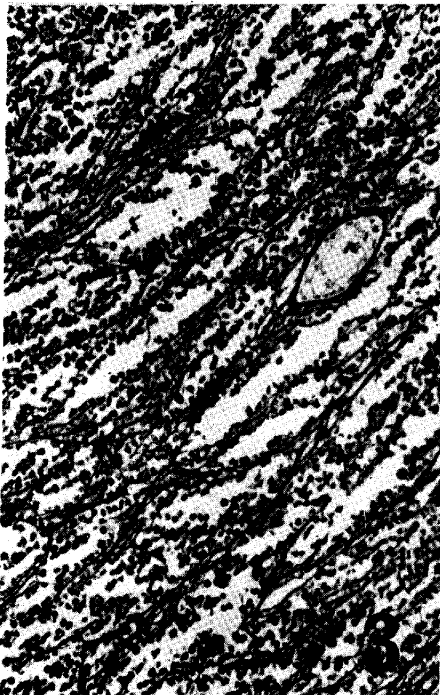
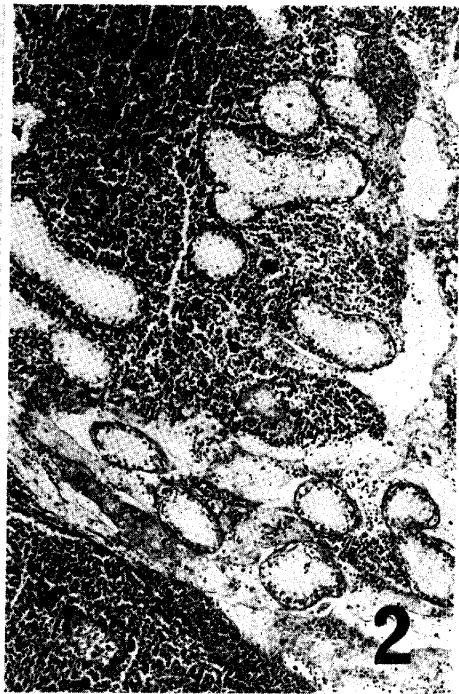
* Normal ranges: IgG 802-1,556; IgA 130-367; IgM 58-189.

Fig. 1. Cut surface of the left testis showing a nodule (arrows).

Fig. 2. Massive infiltration of tumor cells sparing seminiferous tubules. HE, ×40.

Fig. 3. Tumor cell infiltration in the interstitium showing an alveolar pattern. Silver, ×100.

Fig. 4. Plasma cells with various maturity and with rich, intracytoplasmic RNA. Methyl-green-pyronin, ×400.



3.0 cm and weighed 40 g. The testis itself was enlarged to the size of a hen's egg, and was smooth, yellowish-white and somewhat glistening on the surface. Although the cut surface was mostly soft and appeared normal, there was a nodule which measured 3.0×1.5 cm in greatest dimensions, was greyish-yellow and was sharply delineated from the surroundings (Fig. 1). The epididymis and spermatic cord were normal.

Histologically, the interstitium was massively infiltrated by tumor cells (Fig. 2), with a focal alveolar pattern clearly seen with silver impregnation (Fig. 3). The tumor cells had one, sometimes two or three, nuclei with prominent nucleoli. The nucleus of rather matured cells was somewhat eccentrically located with a clear perinuclear halo and had chromatin clumps along the nuclear membrane, showing plasmacytic features. The cytoplasm was rich in ribonucleic

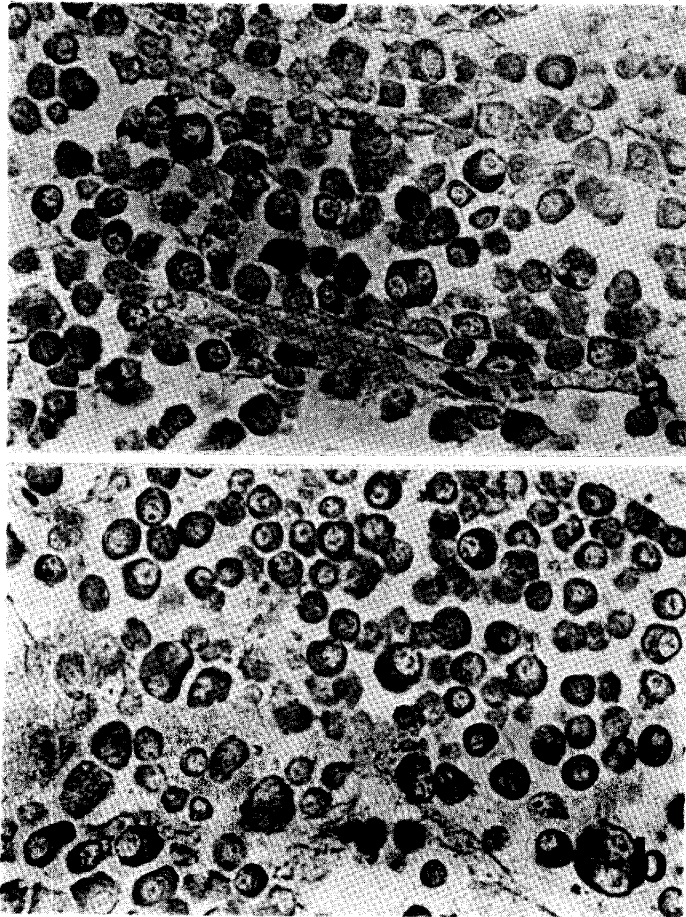


Fig. 5. a : Intracytoplasmic IgG, and b : kappa, showing varied intensity of positivity depending on the cell maturity. $\times 300$.

acid as seen with methylgreen-pyronin staining (Fig. 4). Intracytoplasmic localization of immunoglobulin was attempted according to Mason *et al.* (1). IgG (Fig. 5a) and its kappa chain (Fig. 5b) were positive in varying intensity depending on the maturity of plasma cells. IgM, IgA and lambda were not identified indicating the monoclonal nature of tumor cells.

The patient had received no additional treatment. He was seen clinically every two months, and when seen in December 1979, he complained of nothing but lumbago which had continued for 11 years. Laboratory examinations then were not unusual (Table 1). A bone survey showed no metastatic lesions.

DISCUSSION

Extramedullary plasmacytomas are relatively rare, and testicular plasmacytomas are even rarer. Only 37 cases have been reported in the literature, since Ghon and Roman (2) in 1913 reported a case of multiple myeloma in which testicular involvement was found at autopsy (Table 2). The patients' ages ranged from 26 to 81 years old, the average being 56. Bilateral testicular involvement was present in 13 cases, right alone in 12, left in eight, and the remaining four cases were not recorded adequately.

Myelomas are disorders associated with abnormally increased plasma cell proliferation and can be divided into five categories: solitary myeloma, multiple myeloma, diffuse myelomatosis, plasmacytic leukemia and extramedullary plasmacytoma. Plasmacytoma of the testicle may be divided then into two types: testicular involvement or metastasis subsequent to the first four categories, *i.e.*, the first one to fourth, and primary testicular plasmacytoma, namely extramedullary plasmacytoma primarily of the testis. The problem is whether the plasmacytoma is primary to the testicle or, as Levin and Mostofi (3) noted, is merely the initial manifestation of a systemic disorder of plasma cells or plasma cell precursors.

Some cases with plasmacytoma are primary in the testicle. For instance, Carson *et al.* (4) reported a case in which plasmacytoma present in the testicle for 15 years was followed by a rapid course of disseminated lesions. When bone lesions were present initially, the patient had a more rapid course. Eckert and Smith (5) reported a patient who developed swelling in the face and scrotum, and died one year after orchietomy and irradiation of the face. At autopsy no associated bone lesion was present. Gowing (6) reported a similar case to that of Eckert and Smith; this patient died 27 months after orchietomy and no associated bone lesion was found at autopsy. Levin and Mostofi (3) reviewed seven cases of testicular plasmacytoma, and two of the seven had neither serum abnormalities nor bone lesions. According to Steinberg (7), one patient with a nasopharyngeal plasmacytoma treated with irradiation had a complete remis-

TABLE 2. REPORTED CASES OF

Case no.	Informants	Year reported	Age	Side affected	Testicular mass	Last known status
1.	Ghon ² & Roman	1913	72	Rt		Dead
2.	Porchownick	1931		Bil	—	Dead
3.	Ulrich	1939	55	Bil	+	Dead
4.	Kirshbaum	1947	62	Bil	—	Dead
5.	Geschickter & Copeland	1949				Dead
6.	Churg & Gordon	1950		Bil		Dead
7.	Newman <i>et al.</i>	1952	55	Bil	+	Dead
8.	Hayes <i>et al.</i>	1952			+	Dead
9.	Melicow & Cahil	1954	54	Rt	+	Dead
10.	<i>ibid.</i>		62	Rt	+	Dead
11.	<i>ibid.</i>		63	Lt	—	Dead
12.	<i>ibid.</i>		50	Bil	—	Dead
13.*	Carson <i>et al.</i>	1955	72		+	Dead
14.*	Dolin & Dewar	1955	72			
15.*	Eckert & Smith	1963	50	Rt	+	Dead
16.*	Gowing	1964	50	Rt	+	Dead
17.	<i>ibid.</i>		62	Bil	—	Dead
18.	<i>ibid.</i>		50	Bil	+	Dead
19.	Osman & Morrow	1966	53	Lt	+	Alive
20.	Edwards & Zawadzki	1967	69	Bil	—	Dead
21.	Weitzner	1969	81	Rt	—	Dead
22.*	Levin & Mostofi	1970	46	Bil	+	Dead
23.	<i>ibid.</i>		51	Lt	+	Dead
24.	<i>ibid.</i>		66	Rt	+	Dead
25.	<i>ibid.</i>		26	Bil	+	Dead
26.	<i>ibid.</i>		43	Bil	+	
27.*	<i>ibid.</i>		48	Rt	+	Alive
28.	<i>ibid.</i>		42	Rt	+	Dead
29.	Level	1972	46	Lt	+	Dead
30.	Oldham & Polmer	1973	44	Lt	+	Alive
31.	Andaloro & Babott	1974	63	Lt	+	Dead
32.*	Steinberg	1975	33	Lt	+	Alive
33.	Kawakita <i>et al.</i>	1976	45	Lt	+	Dead
34.	Maseki <i>et al.</i>	1976	61	Rt	+	Alive
35.	Chida <i>et al.</i>	1978	64	Bil	+	Dead
36.	<i>ibid.</i>		52	Rt	+	Alive
37.	Yoshimoto <i>et al.</i>	1979	58	Rt	+	Dead
38.	Kaneshige <i>et al.</i>	1980	73	Lt	+	Alive

* The testicular tumor was considered to be primary.

** Ch.: Chemotherapy; Rad.: Radiotherapy; Or.: Orchiectomy.

Primary Testicular Plasmacytoma

TESTICULAR PLASMACYTOMA

Scrum protein abnormality	Immuno logical abnormality	Periphe- ral blood involve- ment	Bone marrow involve- ment	Bone lesion	Therapy**
+		+	+	-	Rad. Or.
		+	+	-	Ch.
-		+		+	Ch. Or.
+		+	+	+	Or.
+				+	Rad.
+				+	(-)
+				+	Rad.
				-	Rad. Or.
				-	Rad. Or.
			+	-	Rad. Or.
				-	(-)
+	+				Rad. Or.
+	+	-	+		Ch. Or.
+		+	+		Ch.
	+		+		(-)
		-		-	Or.
+		-	+	+	Ch. Rad. Or.
-	-		-	+	Ch. Rad. Or.
+		-	-	+	Ch. Rad. Or.
				+	Or.
-		-	-	-	Or.
+	+		-	-	Rad. Or.
+	+				Or.
+	+			+	Ch. Or.
+	+	+	+	-	Ch. Or.
	-	-	-	-	Or.
-	+	-	+	+	Ch. Rad. Or.
-	+	-	+		Ch. Or.
+	+		+	+	Ch. Or.
-				+	Ch. Or.
+	+			+	Ch. Or.
-	-	-	-	-	Or.

sion. Four years later, orchiectomy was performed because of a testicular tumor which was found to be a plasmacytoma. He was alive and well without serum abnormalities or bone lesions. Dolin and Dewar (8) presented a case not associated with multiple myeloma.

Among the above 37 patients with testicular plasmacytoma, there are a total of seven cases without any abnormalities in bone or serum immunoglobulin. Therefore, it is difficult to consider that all of the testicular plasmacytoma are due to metastasis to the testis from multiple myeloma of the bone. Concerning malignant lymphoma, Gowing (6) stated that "it is only in retrospect, after a patient has been without evidence of recurrence for some years, that a malignant lymphoma of the testicle may be accepted as a primary". On the other hand, although plasmacytoma belongs to one of malignant lymphomas, its dissemination can be detected much earlier than conventional malignant lymphomas by means of clinical evidence and hematologic data such as serum and urine protein electrophoresis or immunoelectrophoresis and changes of cell differentials in peripheral blood and bone marrow. Therefore, assessment of the primary or secondary nature of a plasmacytoma may be made on the basis of a shortened period of retrospective observation (about one year) as proposed by Gowing.

As our case had neither bone lesions nor immunoglobulin abnormalities for more than one year after left orchiectomy, we can regard it as a primary plasmacytoma of the testicle.

REFERENCES

1. Mason, T. E., Phifer, R. F., Spicer, S. S., Swallow, R. A. and Dreskin, R. B.: An immunoglobulin-enzyme bridge method for localizing tissue antigens. *J. Histochem. Cytochem.* **17**, 563-569, 1969.
2. Ghon, A. and Roman, B. (1913), cited by H. Ulrich: Multiple myeloma. *Arch. Intern. Med.* **64**, 994-1016, 1939.
3. Levin, H. S. and Mostofi, F. K.: Symptomatic plasmacytoma of the testis. *Cancer* **25**, 1193-1203, 1970.
4. Carson, C. P., Ackerman, L. V. and Maltby, J. D.: Plasma cell myeloma: A clinical, pathologic and roentgenologic review of 9 cases. *Am. J. Clin. Pathol.* **25**, 849-888, 1955.
5. Eckert, H. and Smith, J. P.: Malignant lymphoma of the testis. *Br. Med. J.* **ii**, 891-894, 1963.
6. Gowing, N. F. C.: Malignant lymphoma of the testis. In *Pathology of Testicular Tumours*, *Br. J. Urol. (suppl.)*, ed. D. H. Collins and R. C. B. Pugh, Livingstone, Edinburgh, pp. 84-94, 1964.
7. Steinberg, D.: Plasmacytoma of the testis: Report of a case. *Cancer* **36**, 1470-1472, 1975.
8. Dolin, S. and Dewar, J. P.: Extramedullary plasmacytoma. *Am. J. Pathol.* **32**, 83-103, 1955.