

Orchidoma in the Elderly

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Abstract

Is the incidence of orchidoma in the elderly on the rise?

The subject is discussed apropos of two cases. The data relative to the frequency and incidence of orchidoma in the elderly is discussed and The New York Memorial Series of Dean and Dean, the series of The Institute of Urology of London of Collins and Pugh as well as the series of the VAMC, Phoenix are reviewed, and the differences are studied statistically and arithmetically.

It is concluded that the incidence of orchidoma in the elderly seems to be on the rise; it is compelling and obligatory that this fact retain our attention in the differential diagnosis of scrotal masses in the elderly.

Introduction

In 1991, I was surprised to observe a case of “orchidoma” in the elderly. [In 1988, I had suggested the inclusion of all the different histological varieties of germ cell tumors of the testicle under one term: “orchidoma” [1-3]. By “elderly” I mean males 60 years old or older]. In the 1990s it was common to consider orchidoma, not only a tumor of young men, but also a rarity in males aged 60 or more. It was commonly taught that “orchidoma” holds a high place in the list of differential diagnoses of testicular masses in adults; whereas it held a low place in elderly males. The publication of Dean’s series of testicular tumors from Memorial Hospital in New York in 1963 [4] had established the incidence of orchidomas in the elderly at 2.04% (Table 1). In a subsequent publication of a larger series of collected cases in 1964 from The Institute of Urology in London [5], this percentage was found to be 3.13% (Table 2), thus confirming the belief that orchidoma was rare in the elderly, but is on the rise. In a relatively short period of time, two years (1991-1993), I observed two cases of orchidoma in the elderly.

Case Reports

Case 1

A 64 year-old white male presented (1991 Apr 17) with a hydrocele. When a mass was palpated in the testicle after emptying the hydrocele, an orchiectomy was performed. The mass proved to be a seminoma with a focus of embryonal carcinoma (path No 1354-91).

Case 2

A 68 year-old white alcoholic male presented with weight loss and a swelling of the left testicle of three years duration. The left testicle felt like a 10 cm tense hydrocele. Blood urea nitrogen varied between 3 and 6 mg %, serum albumen varied between 2.1 and 2.4 gms %, beta Human Chorionic Gonadotrophin (HCG) was 57. Ultrasonography revealed that the left testicle was replaced by a tumor, which contained a vast amount of liquid. The clinical impression was that of embryonal

Age	Seminoma	Teratoma	Combined	Blastoma	Total	PerCent
00-24	012	093	016	08	129	15%
25-59	364	226	115		705	82%
60-84	023	003	001		027	03%
Total	399	322	132	08	861	

Table 2: Age of 861 patients with orchidomata Great Britain and Ireland. (condensed from Collins and Pugh [5]).

carcinoma. An inguinal orchiectomy was performed (1993 Feb 12). Frozen sections revealed the tumor to be an anaplastic seminoma. The Armed Forces Institute of Pathology (AFIP) confirmed the diagnosis of seminoma with invasion of the epididymis, adding: “The elevated HCG indicates the presence of syncytiotrophoblasts although we did not see any, signed Ch J Davis”. A CT scan (1993 Feb 19) showed a 9x8 cm mass in the left retroperitoneum pushing the aorta forward and the left kidney laterally. Cisplatin and VP16 were administered. The HCG came down to 3 and the WBC to 700/cmm. An ischemia of the left lower extremity became apparent; the patient was put on urokinase. As he did not improve much, an exploration of the retroperitoneal space was undertaken (1993 Apr 20), the left lumbar sympathetic chain was excised as well as what looked like fibrotic and necrotic tumor, which on biopsy proved to be fibrotic and necrotic tumor. A bypass was performed. The patient was discharged on 1993 May 25. He expired on 1993 Dec 09. These two observations goaded me to go back searching our records at the VAMC. To my great surprise, I found that 5 out of the 36 cases of orchidoma, seen between 1983 and 1991, were in the elderly, a percentage of 13.88%, i.e. more than five times higher than expected. A diligent and meticulous search of the more recent urological literature, up to 2008, revealed four interesting papers about the incidence rate of testicular tumors in the general population but none with an age-breakdown to compare with:

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Years	Number	Percents
00 - 24	053	21.1%
25 - 59	187	76.9%
60 - 74	005	2.0%
Total	245%	100.0

Table 1: Age of 245 patients with testicular orchidomata. Memorial Hospital (New York). (Condensed from Dean and Dean [4]).

a) “Major increase in cancer incidence ... in testicular cancer” for the period between 1973 and 1993 was reported from Germany in 2000 [6].

b) A six-fold increase in the risk for seminoma was reported in 2000 among plastic workers exposed to polyvinyl chloride (PVC) [7].

c) A similar increase in the incidence rate of testicular seminomas and non-seminomas between 1970-1971 and 1994-1995 was reported in 2000 [8].

d) A two fold increase in the incidence rate of testicular cancer between 1980 and 1999 in Southern France in particular and in Southern Europe in general (but not in Northern Europe) was reported in 2008 from Toulouse [9].

The following issues became the object of my focus and my concern:

1) Is the difference between 2.04 and 3.13% on the one hand, and 13.88% on the other, statistically significant?

2) What is the cause of this difference?

a) Is it temporal?

b) Is it geographic?

c) Is it hormonal? As from an increase in the use of hormones during pregnancy?

d) Is the cause something else?

3) Should orchidoma be seriously considered in the differential diagnosis of testicular masses in the elderly?

Finding valid answers to these very important questions proved to be a difficult task that ended in partial failure despite all my continuous and diligent efforts. The hurdle seems to have stemmed mainly from the fact that the three series of cases, which I was comparing in order to draw some valid conclusions, are neither homogenous nor similar:

a) The series of the Deans has been compiled from the records of Memorial Hospital in New York; it was analyzed and published in 1963 (Table 1).

b) The series of Collins and Pugh was made up of patients, who came from all over the United Kingdom and Ireland; and was studied and published in 1964 (Table 2).

c) The series from the VAMC consisting of veterans hospitalized between 1983 and 1991, does not include any children.

In order to partially overcome this hurdle, the percentages were recalculated after removing, as was suggested [10], all patients who were 24 years old or younger from the data. Even after this re-adjustment, the difference between our percentage figure (13.88%) and those of Dean and Dean (2.6%) and those of Collins and Pugh (3.68%), remained quite impressive and required an explanation.

We submitted our figures to two great French statisticians, Professor Labib Haddad and L. Mailhot [11]; they in turn subjected them to three different kinds of statistical analysis:

1) The classical Fisher-Irwin test, which showed the difference to be statistically significant at the 0.05 threshold, but not at the 0.01 threshold. 2) The Chi square test using Yates correction showed the same result. 3) They specially designed a new but very complex and

Population	Year	Percent	Ratio of elderly pts	Ref /population in M
USA	1963	13.45% *		
UK and Ireland	1964	14.29%	27/3.948 = 6.8	14,15
New York	1988	18%	5/1.35 = 3.7	13
PHX VA Population	1990	38.6%	5/0.095= 52.6	12
PHX VA GU inpatients	1988	70.2%		12

*calculated by extrapolation from 13.09 % for 1960 and 14.03 % for 1970

Table 3: The percentage of patients aged 60 years and above.

complicated test (the HM test) specifically to answer this question; they concluded that although quite remarkable, the difference was not statistically significant; and that at a critical threshold of approximately 0.90, the difference could be explained by the difference in the composition of the three “populations” from which the three “samples” were obtained [11].

Could it be that patients seen in the Phoenix VA Center are older than those seen in New York and in London? In order to answer this question we resorted to a simple arithmetic test; we compared the ratio of the number of orchidomata reported in the “elderly” to the number of elderly males (in millions) constituting the three samples.

If we make several assumptions, some of which may seem fortuitous, we could compare the following three ratios (Table 3):

a) The ratio of the number of orchidomata reported in the “elderly” by Dean and Dean in 1963, to the number of elderly males (in millions) living in New York i.e. $5/1.35 = 3.7$.

b) The ratio of the number of orchidomata in the “elderly” reported by Collins and Pugh in 1964 to the number of elderly males (in millions) living in the United Kingdom and Ireland in 1964 i.e. $27/3.948 = 6.8$.

c) The ratio of the number of orchidomata in the “elderly” which we report in 1991, to the number of elderly male Veterans (in millions) living in Phoenix in 1990 i.e. $5/0.095 = 52.6$.

It becomes evident from comparing these three ratios (Table 3) that there were 14 times ($52.6/3.7$) more orchidomata in the elderly in Phoenix than in New York, and 7.7 times ($52.6/6.8$) more orchidomata in the elderly in Phoenix than in the United Kingdom and Ireland.

Whether our statistical analyses were legitimate or not, the fact remains that orchidomata were more frequent in the elderly in 1993 than in 1963 or 1964; and this fact should be remembered when an elderly male presents himself with a testicular mass.

Conclusions

1) The reason we have recently seen more orchidomata in the elderly than we expect to see, is not readily apparent. Although we have been unable to pinpoint the reason, we believe that, if the requisite conditions of accuracy are met, and we feel they can be met, it should become possible to arrive at a fairly accurate estimate of the incidence of orchidomata in the elderly, and of the trend of the change in this parameter over time as well as to appreciate any statistically significant change occurring and the true significance of this change.

2) The incidence of orchidomata in general has been rising over the last 20 years.

3) It can be said that orchidomata in general are becoming more and more frequent in the elderly, and it is compelling and obligatory that it retains our attention in the differential diagnosis of scrotal masses in the elderly.

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