



PURE CARTILAGINOUS TERATOMA OF TESTIS - A RARE CASE REPORT

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ABSTRACT

Teratoma is a germ cell tumor that is predominantly seen in ovaries and testis. They contain elements of at least two germ cell layers. It is rare to find monodermal pure testicular teratoma in adults. We report one such rare case in a 30 year old male with a testicular mass. On histology, mature hyaline cartilaginous elements were seen without evidence of malignancy or other germ cell tumors.

KEYWORDS : Teratoma, Testicular tumors, Cartilaginous teratoma.

INTRODUCTION

Teratoma has been derived from the Greek word teraton, meaning monster, and was at first used by Virchow in 1863. Teratomas can range from benign, well - differentiated (mature) cystic lesions to those that are solid and malignant (immature).¹

Teratoma comprises only 5% of all germ cell tumors. Tumors typically contain cellular components that are derived from two to three germ layers.² Since they arise from totipotent cells, they are commonly encountered in the gonads (29%), most common location being the ovary. In testis, occurrence of teratoma is comparatively less.¹

The best recognized monodermal testicular teratomas are carcinoid tumors and primitive neuroectodermal tumors.³ In spite of extra-skeletal cartilaginous neoplasms being rare, chondroid differentiation of teratomas of testis is common. It is seen in about 75% of mature teratomas and 54% of malignant teratomas of the testis.⁴

Pure teratomas in adults or post pubertal age group are rare accounting for only 2-3% of all other teratomas. We present this case because of its unique presentation and rarity.

CASE REPORT

A 30 year old male presented with a painless scrotal swelling since 3 months.

On examination, Right testicular enlargement was seen with a firm to hard diffuse scrotal mass. Left testis was normal. No inguinal lymph nodes were palpable bilaterally. Transillumination test was negative. Patient had no urinary complaints. Patient then underwent Orchidectomy.

GROSS EXAMINATION

We received enlarged right testicular mass measuring 10x6 cm. External/surface was grey-brown, well encapsulated, diffusely enlarged. Cut/surface was solid, grey-white, well circumscribed lobulated rubbery mass with glistening surface, located within the testicular parenchyma seen with loss of normal architecture. String

test was negative. Areas of hemorrhage noted. No areas of necrosis seen. (Figure - 1)



Figure-1: Well encapsulated testicular tumor showing glistening surface.

MICROSCOPY

On microscopy, multiple sections revealed well circumscribed tumor composed of lobules of mature hyaline cartilaginous tissue separated by fibrous septae. The chondrocytes were round to oval with vesicular nuclei, prominent nucleoli and moderate vacuolated cytoplasm. No mitotic figures or abnormal chondrocytes noted. There was no evidence of necrosis or hemorrhage. Surrounding areas showed mature fibrous tissue with prominent blood vessels. There were no areas of other germ cell elements seen. Based on these findings, final diagnosis of benign pure cartilaginous teratoma of testis was made. Extensive sampling of the tumor didn't reveal any evidence of malignancy. (Figure - 2)

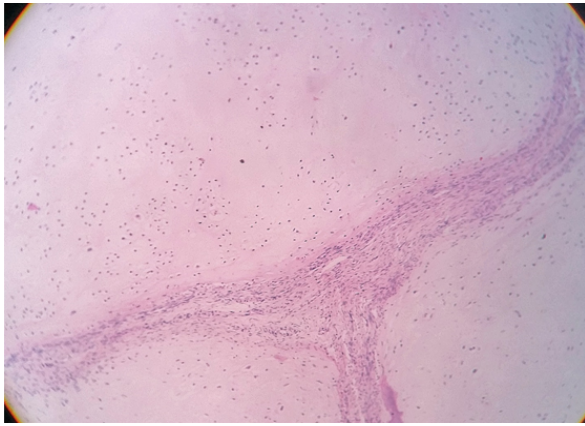


Figure-2: 10x H/E: revealed well circumscribed tumor composed of lobules of mature hyaline cartilaginous tissue separated by fibrous septae.

DISCUSSION

Mature teratomas comprises only 5-10% of all testicular neoplasms. Pure testicular tumor being rare, in adulthood has an incidence of only 5%.⁵ Teratomas do not always contain tissues from all the three germ cell layers. A monodermal teratoma is one that comprises tissue from only one germ cell layer (shaobo et al.).

In literature, Pure Chondroma of testis has been described by Dounis. Our case is a patient with Pure cartilaginous testicular teratoma. Two similar cases have been reported by Singh N in 1997 and by Ryan Des Jyan in 2007.

A Subtype of Non-Seminomatous Germ Cell Tumor (NSGCT), testicular teratoma often occurs in 2 distinct age groups – prepubertal and postpubertal.⁵ Prepubertal teratomas are the 2nd most common germ cell tumors (GCT) after yolk sac tumors, occurring most commonly as pure teratomas. Mean age of patients at diagnosis is 20 months and occur rarely after the age of 4 years. Postpubertal teratomas are usually seen along with other germ cell elements and occur mainly in the 2nd-4th decades of life or sporadically in those older than 50 years.⁶ Teratomas in this age group is considered to be a malignant tumor with the capacity for metastasis. Singh et al in his study concluded that around 80% of post pubertal teratomas are seen with intratubular germ cell neoplasia.

Our patient was an adult (30 Years) with testicular swelling diagnosed as benign teratoma of pure cartilagenous type without any evidence of metastasis.

Clinically, both mature and immature teratoma presents as painful testicular mass and this could be due to hemorrhage or hematoma formation causing pressure to the surrounding areas. Teratomas are known to grow rapidly as compared to seminomas. They also have a highly vasculitic nature. Therefore, oftenly they are discovered incidentally or indirectly during the assessment of testis.

On Examination, atrophy of the affected or the contralateral testis is noted along with a palpable firm mass within the testis suggestive of neoplasm. A thorough abdominal examination for masses or tenderness, inguinal and supraclavicular lymphadenopathy, gynaecomastia and chest auscultation for evidence of metastatic disease is indicated.

Macroscopically, mature postpubertal teratomas typically appear as a solid testicular tumor, nodular distorting the tunica albuginea.⁵ Local extension beyond the testicle is usually rare.

Microscopically, typical features of mature teratomas is disordered arrangement with mild cytologic atypia. Seminiferous tubules may

show carcinoma in situ or intratubular germ cell neoplasia (ITGCN) in upto 90% of cases.⁵ However, in our case there was no evidence of ITGCN or carcinoma in situ.

Prepubertal teratomas are said to be diploid, lacking chromosomal imbalances and without isochromosome formation [i(12p)]. In contrast, adult teratomas, most of which are mixed type typically show hypotriploid with over representation of isochromosome i(12p). Other genetic changes reported include: partial loss of chromosome 13 (particularly q31) and gain of chromosome 7 (particularly q11), chromosome 8 and X chromosome.⁵

In a study by Cheng et al, out of 17 testicular tumors studied, 76% showed i(12p) and 29% had 12p over representation. A case of pure cartilaginous teratoma of testis reported by Shaoba et al. showed positivity for both isochromosome 12p and 12p over representation. In our case genetic studies were not done.

Treatment and outcome of pure testicular tumors is controversial. In adults, metastasis for both mature and immature teratoma has been reported in 13 to 60% of cases at initial presentation.⁵ Leibovitch.I. et al, in his study revealed the overall risk of lymph node metastasis to be 40% at retroperitoneal lymphnode dissection(RPLND) which was also associated with a relapse rate of 16%.

Heidenreich and coworkers evaluated 44 men with pure testicular teratomas presenting with clinical stages I, IIA and IIB who had undergone orchidectomy with RPLND. They found 19% of patients with clinical stage I tumors had retroperitoneal metastasis and all of these lesions showed pure pure teratomas. 67% of patients with clinical stage IIA and IIB had lymph node metastasis and revealed mature teratoma, mature teratoma with embryonal carcinoma or mature teratoma with seminoma.⁶ In our case, there was no evidence of distant metastasis or recurrence on follow up for 6 months.

CONCLUSION

Even though rare and unusual, pure cartilaginous teratomas of testis should be considered in the differential diagnosis of testicular tumors and can occur without malignant behavior.

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