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Benign cystic Teratoma and Gonadoblastoma developed in bilateral abdominal undescended testis

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A B S T R A C T

Cryptorchidism is one of the most common congenital malformations in humans and one of its most important consequences is the development of testicular cancer. While germ cell tumors (GCTs) and sex cord-stromal tumors are major testicular tumors. Gonadoblastoma is a rare neoplasm composed of a combination of germ cells and gonadal stromal elements. In this study we present a patient with bilateral abdominal undescended testis with gonadobelastoma in the left and benign cystic teratoma in the right testicle.

1. Introduction

The incidence of congenital cryptorchidism is 2–3% in full-term boys at birth and 1% at first year of age.[1] It usually occurs as a single abnormality, but may be associated with other genitourinary disorders like hypospadiasis. Testicular descent occurs in two stages: abdominal (*Anti*-mullerian hormone dependent) and inguinoscrotal (androgen dependent). In the absence of testicular descent, the normal function of gonocytes undergoes extensive changes due to unsuitable environmental; one of the most important consequences is development of testicular cancer. WHO classification of tumors identifies germ cell tumors (GCTs) and sex cord-stromal tumors as major testicular tumors. GCTs are mainly found in men between 15 and 45 years old.[2] Testicular GCTs are correlated with a range of disorders commonly known as testicular dysgenesis syndrome. Components of this syndrome include cryptorchidism, hypospadias, and poor sperm quality. The incidence of GCTs is significantly associated with cryptorchidism, which is seen in approximately 10% of testicular GCTs. Teratomas is a type of GCT that can occur at any age. Pure Teratoma is relatively common in infants and children. Among GCTs, Teratomas are the second most common in neonates and children only after yolk sac tumors. Gonadoblastomas, however, are rare neoplasms composed of a combination of germ cells and gonadal stromal elements that almost always form in the gonads with some form of testicular dysgenesis. In some cases, the germ cell component becomes malignant and causes seminoma.[2]

2. Case presentation

A 20-year-old man, referred to Shahid Rahnemoun hospital with complaint of infertility and severe pain on deep palpation in the right inguinal area, and none of the testicles could be palpated inside the scrotum during clinical exam. Ultrasonographic findings revealed an atrophic testis measuring 25 × 12 mm intra abdominal and a testis measuring 41 × 22 mm proximal of internal ring. Patient underwent laparoscopy. The left testis was relatively atrophic and retrovesical, which also had a lot of adhesions and was located in the proximal part of the right inguinal canal. The right testis brought out to the skin surface and fixed with sutures. The left testis, however, was severely atrophic with adhesions and was retrovesical, which could not be transferred to the skin due to the short cord, and orchiectomy was done. Histopathological result of the left testis was in favor of Gonadoblastoma (Mixed and unclassified sex cord germ cell tumor without lymphovascular involvement as epidermal cyst). Based on the pathological evidence of Gonadoblastoma in the left testis and normal CT scan and normal level of tumor markers, the patient underwent US during follow up, which showed a solid hyper echoic mass measuring 25 × 20 mm in the right testis which was not seen in US study before operation. The patient underwent a right partial orchiectomy to remove the right testicular mass. The testis was released from the surrounding area and the identified mass was removed from the testicular tissue and sent for pathologic analysis (Fig. 1). He was discharged from the hospital on the first post operation day. Histopathology findings of the mass removed from

Abbreviations: US, Ultera Sonography; GCT, germ cell tumors; UDT, undescended testis.

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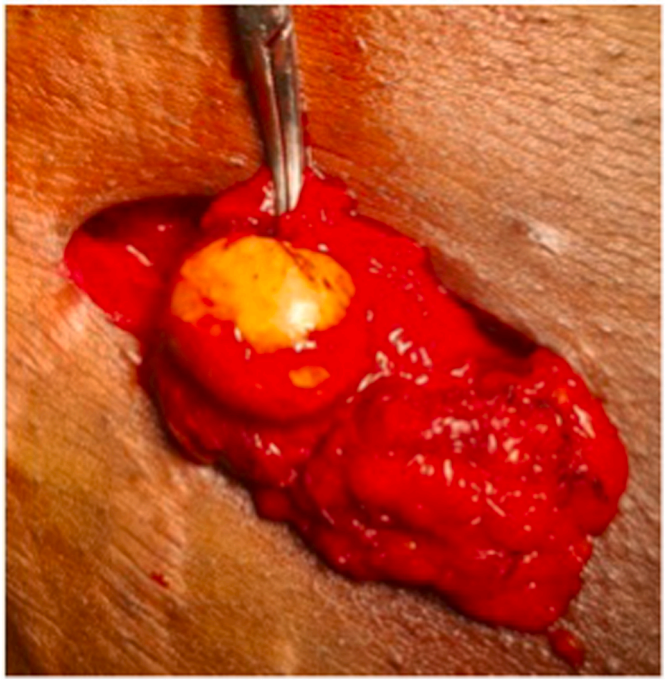

Fig. 1. Mass inside the right testis.

the right testis indicated a benign cystic Teratoma. The tumor lacks any specific differentiation and shows pure spindle cell morphology. The Fig. 2 reveals epidermal and respiratory epithelial, sero-mucus glands, smooth muscle, fibroblasts, and fatty tissue. Germ cells and cells of sex cord-stromal differentiation arranged in well-defined nests with surrounding connective tissue stroma (Fig. 3).

3. Discussion

The incidence of bilateral testicular tumors is 1–5%. Approximately 33% are synchronous, while the others are metachronous tumors. In synchronous type, the pathologies are mostly the same. But incompatible subtypes are extremely rare.[3] In this case there were two different types of tumors in two testes. One of the most common abnormalities in male newborns is absence of testis in its normal position. This complication is not so dangerous in itself and in a significant proportion of infants; it descends spontaneously to its original place by 9 months. In cases which spontaneous testicular descent does not occur, surgical intervention and transfer of the testis to its correct location is a very important procedure to prevent further consequences such as infertility, testicular cancer and etc. The incidence of testicular cancers, like GCTs such as Teratoma and Gonadoblastoma, is strongly associated with testicular dysgenesis syndrome.[4] Gonadoblastoma is a mixed germ cell sex cord stromal tumor and occur in patients with intersex syndromes and dysgenic gonads. It does not metastases but the malignant GCT part may. The risk of bilateral tumors is 40% so Bilateral orchiectomy is needed.[5] The point in the present case was the synchronous appearance of two types of tumor in the both testis. The Mass seen on the follow-up ultrasound appears to have been present before the left testicular orchiectomy, but was not seen on the ultrasound.

4. Conclusions

Synchronous with incompatible subtypes of both testes are very rare although it does not report in US so examination of both testes in all young patients with undescended testis bilaterally in the first stage seems necessary.

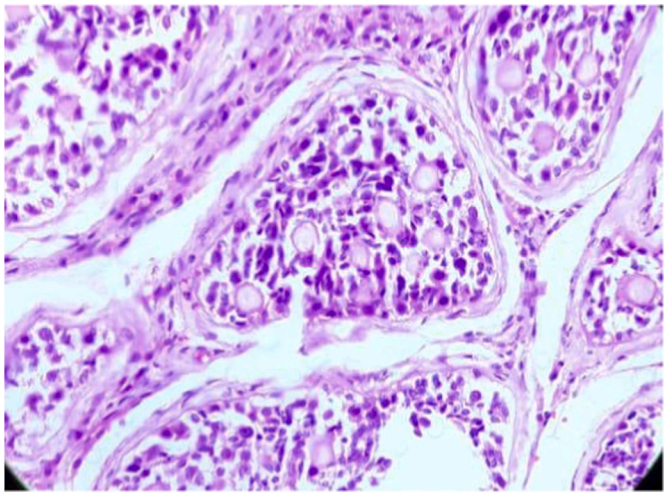

Fig. 3. Gonadoblastoma.

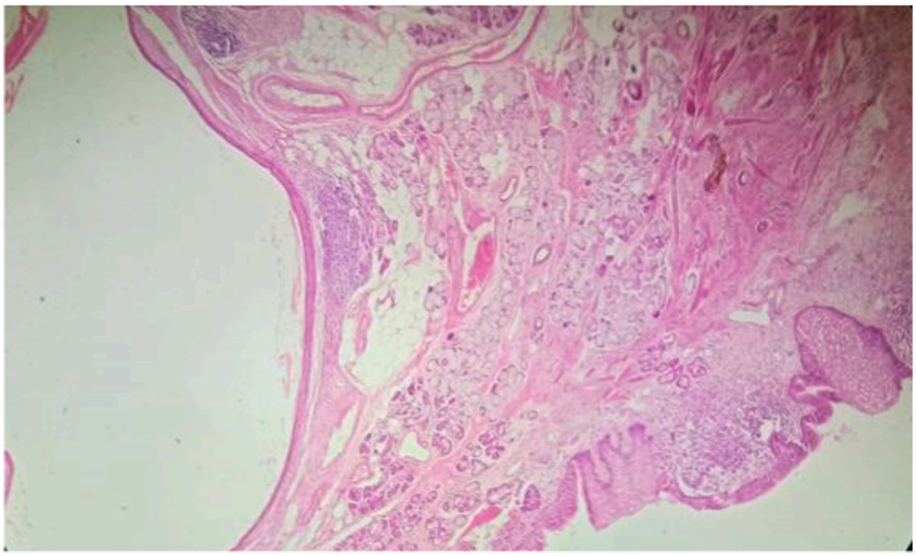

Fig. 2. Mature cystic Teratoma.

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