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Yolk Sac Tumor of Testis Diagnosed 10 years after Orchidopexy in 24-year-old Adult: A Case Report

Ramesh Lamichhane* [1] , Saroj Chaudhary [2]

Abstract

Introduction: *Yolk sac are a rare type of germ cell tumors that occurs most commonly in prepubertal age but are rare in adults.* ***Case report:*** *We present a case of a yolk sac tumor in a 25-year-old man with a history of bilateral cryptorchidism diagnosed at the age of 10 for which bilateral orchidopexy was done at the age of 19.* ***Discussion:*** *Delayed diagnosis of cryptorchidism are common in developing countries. Most adults with cryptorchidism prefer orchidopexy instead of orchiectomy. Due to a lack of adherence to follow-up, late presentation with complications is common.* ***Conclusion:*** *Yolk sac tumor can rarely occur in cryptorchid testis after post-pubertal orchidopexy. As lack of adherence to follow-up is common in developing countries, orchidopexy should be avoided.*

Keywords: *Yolk sac tumor, Germ cell tumor, Malignancy, cryptorchidism, orchidopexy.*

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***1. Corresponding Author:**
Dr. Ramesh Lamichhane
Intern Doctor
Department of Surgery
Jalalabad Ragib Rabeya Medical College, Sylhet, Bangladesh.
Email: Dr.rameshlamichhane@gmail.com
Mobile: +8801706912360.

2. Dr. Saroj Chaudhary
Medical Officer
Department of Cardiology
Nepal Cardio Diabetes and Thyroid Center, Kathmandu, Nepal.

Introduction:

Testicular tumor mainly occurs in male between 20 to 40 of age. Previous orchidopexy and history of cryptorchidism (undescended testis) increase the risk of testicular cancer in both testes. Yolk sac tumors are common malignant tumors in pre-pubertal age but are rare in adults. Late diagnosis of cryptorchidism and delayed orchidopexy is common in developing countries[1]. We present a case of yolk sac tumor of testis 10 years after post-pubertal orchidopexy.

CASE REPORT

A 25-year-old unmarried man presented with complaints of a gradually progressive, painless lump in the groin for 6 months (Figure 1). In addition, the patient also complained lack of sexual desire and impotence. The patients past medical history revealed bilateral cryptorchidism diagnosed at the age 10 which was treated with bilateral orchidopexy at the age of 19. The delay in surgery was attributed to poor socioeconomic conditions, long-distance travel to the medical facility, and poor understanding of the disease. On examination, the patient had a single, ovoid, firm, non-tender inguinal mass of approximately 9 x 8 cm. Furthermore, the left scrotal sac was empty. However, the right testis was normal in position. Lymph node and per rectal examination was unremarkable. Routine blood and urine investigations including complete blood count, serum creatinine, and urine routine microscopic examination were within normal limits. However, tumor markers i.e. alpha-fetoprotein, and serum beta-HCG were markedly elevated. Lactate dehydrogenase was within the norm l range (Table I). A contrast-enhanced CT scan showed a well-defined mass in the subcutaneous layer of the left inguinal region measuring about 8x6.1x5.3 cm. After infusion of contrast, heterogeneous enhancement of the lesion was seen (Figure 2). A provisional diagnosis of the testicular tumor was made. Surgery involving excision of the left inguinal mass was done (Figure 3). Histopathology of the specimen was sent which confirmed the diagnosis of a yolk sac tumor. His postoperative period was uneventful. His serum tumor markers were repeated after one-week post-operatively which showed a marked decline in beta HCG and persistent elevation of alpha-fetoprotein. (Table I) He was referred to an oncologist and endocrinologist for further management regarding chemotherapy and gonadal hormone supplementation. He was not able to follow up with us as he went to Dhaka for further care.

Table-I: Serum marker before and after surgery.

Serum marker	Time		Reference range
	Pre-operative	1 week Post-operatively	
Alpha-fetoprotein	>500	>500	Up to 50 ng/ml
Beta-HCG	4696	41	<5 mIU/ml
Lactate dehydrogenase	383	300	225-450 U/L
Testosterone	40.9	39	132-813 ng/ml

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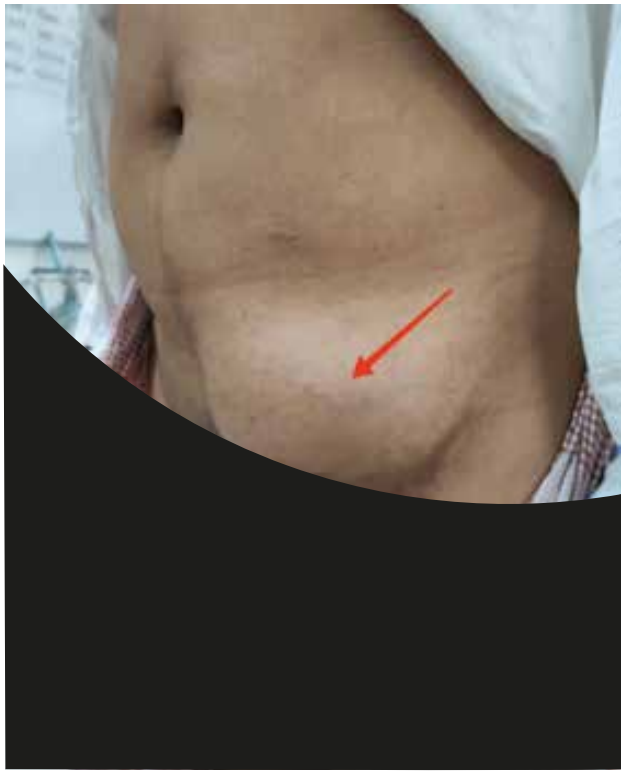

Figure-1: Left inguinal mass.

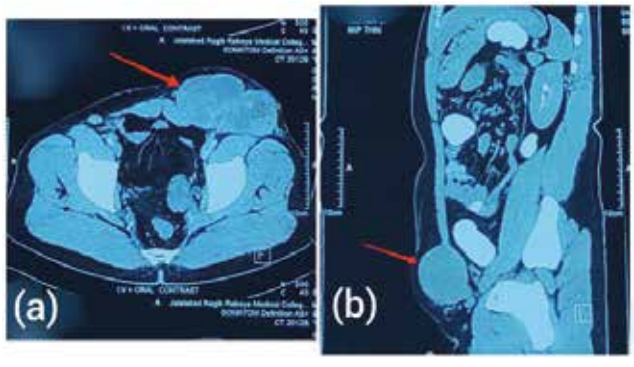

Figure-2: CT scan showing mass with heterogenous enhancement A) Transverse view B) Coronal view.

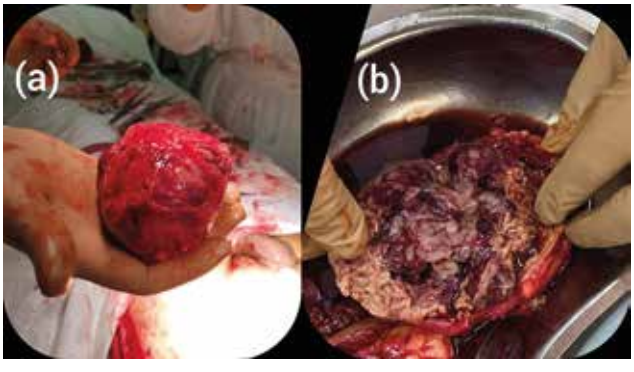

Figure-3: Excised specimen A) Gross appearance B) Cut section.

Discussion:

Undescended testis occurs in 2-4% of term infants and up to 30% of preterm infants [2,3] . Less than 1% require treatment as in the majority of cases testis descend spontaneously by the first 4 months of life[4]. Majority of cases are diagnosed at birth on physical examination. However, in developing countries, late diagnoses until adulthood are also common[5]. A retrospective study conducted in China showed that only 16.9% of patients with undescended testis received treatment timely[6]. The delay in treatment was associated with low socioeconomic status and the absence of other associated anomalies[6]. Our patients parents were aware of the childs empty scrotum since the age of 10 years. Despite knowing the problem they did not seek medical care until the age of 19 years. In our case, the delay in treatment was attributed to long travel to a medical facility and lower socioeconomic status. In addition, parents were not aware of the disease and its potential complication. Moreover, our patient did not had any associated anomalies which may have contributed to late diagnosis. Studies have shown that normally descended testis can also ascent resulting in a late childhood diagnosis and treatment[7]. In our case the parents were only aware when our patient reach the age of 10 years. Thus, the ascent of the testis might have happened in our case but no prior genital examination was carried out previously. Persistent cases of undescended testis in infants should undergo orchidopexy. Surgery is recommended after 6 months of age and should not be delayed more than 1 year of age[8]. In the case of testicular ascent in childhood, surgery is performed within 6 months of diagnosis. When a later childhood diagnosis is made, orchiectomy is the preferred choice. However, most adult patients want to save testis and favor orchidopexy instead of orchiectomy[9]. Our patient also underwent bilateral orchidopexy at the age of 19. A surgical note at that time mentioned that his left gonadal vessel was too short to bring the testis down to the scrotum. The testis was placed between the external muscular and sub-fatty layer of the abdomen after excising external oblique aponeurosis. The ectopic fixation of the testis outside the scrotal sac further increased the risk of testicular cancer in our case. The undescended testis has an increased risk of subfertility, torsion, and malignancy. The risk of malignancy decreases when orchidopexy is done before puberty[10]. Seminoma, a testicular germ cell tumor occurs most commonly in cryptorchidism[11]. Yolk sac tumors are rare in post-pubertal patients with cryptorchidism. Hemant et.al reported a yolk sac tumor in post-pubertal patients but the testis was intra-abdominal in their case[11]. Our patient histopathological specimen also revealed a yolk sac tumor which is a rare association.

Conclusion:

Yolk sac tumor can rarely occur in cryptorchid testis after post-pubertal orchidopexy. As lack of adherence to follow-up is common in developing countries, orchidopexy should be avoided.

Conflict of Interest: None.

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References:

1. Krag Jacobsen G, Barlebo H, Olsen J, Schultz HP, Starklint H, Søgaard H, et al. Testicular germ cell tumours in Denmark 1976-1980. Pathology of 1058 consecutive cases. Acta Radiol Oncol. 1984;23(4):239–47.

DOI:10.3109/02841868409136019

PMID: 6093440

2. Bergbrant S, Omling E, Björk J, Hagander L. Cryptorchidism in Sweden: A Nationwide Study of Prevalence, Operative Management, and Complications. J Pediatr. 2018 Mar;194:197-203.e6.

DOI: 10.1016/j.jpeds.2017.09.062

3. Barthold JS, González R. The epidemiology of congenital cryptorchidism, testicular ascent and orchiopexy. J Urol. 2003 Dec;170(6 Pt 1):2396–401.

DOI: 10.1097/01.ju.0000095793.04232.d8

PMID: 14634436

4. Rabinowitz R, Cubillos J. Cryptorchidism (UndescendedTestes).http://www.merckmanuals.com/professional/pediatrics/congenital-renal-and-genitourinary-anomalies/cryptorchidism. Updated: November 1, 2016. Accessed: February 15, 2017

5. Sinha CK, Vinay S, Kulkarni R, Nour S. Delayed diagnosis for undescended testes. Indian Pediatr. 2008 Jun;45(6):503–4.

PMID: 18599940

6. Zhao TX, Liu B, Wei YX, Wei Y, Tang XL, Shen LJ, et al. Clinical and socioeconomic factors associated with delayed orchidopexy in cryptorchid boys in China: a retrospective study of 2423 cases. Asian J Androl. 2019 Jun;21(3):304–8.

DOI: 10.4103/aja.aja_106_18

PMID: 30632485

7. Hack WWM, Meijer RW, Van Der Voort-Doedens LM, Bos SD, De Kok ME. Previous testicular position in boys referred for an undescended testis: further explanation of the late orchidopexy enigma?: TESTICULAR POSITION and UNDESCENDED TESTIS. BJU International. 2003 Jul 23;92(3):293–6.

DOI: 10.1046/j.1464-410X.2003.04317.x

8. Chan E, Wayne C, Nasr A, FRCSC for Canadian Association of Pediatric Surgeon Evidence- Based Resource. Ideal timing of orchiopexy: a systematic review. Pediatr Surg Int. 2014 Jan;30(1):87–97.

DOI: 10.1007/s00383-013-3429-y

PMID: 24232174

9. Jeong SC, Lee S, Ku JY, Lee SD. Clinical characteristics and treatment of cryptorchidism in adults: a single center experience. World J Mens Health. 2014 Aug;32(2):110–5.

DOI: 10.5534/wjmh.2014.32.2.110

PMID: 25237662

10. Wood HM, Elder JS. Cryptorchidism and testicular cancer: separating fact from fiction. J Urol. 2009 Feb;181(2):452–61.

DOI: 10.1016/j.juro.2008.10.074

PMID: 19084853

11. Janugade H, Monteiro J, Gouda S. Pure yolk sac tumour, post-pubertal type, arising from cryptorchid testes. BMJ Case Rep. 2019 Jul 22;12(7):e229541.

DOI: 10.1136/bcr-2019-229541

PMID: 31337626