

SEMINOMA IN UNDESCENDED TESTIS PRESENTING AS AN ABDOMINAL MASS: A CASE REPORT

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Abstract

We report a case in which a 28-year-old infertile bilateral cryptorchoid man with decreased performance status presented to the department of urology with a mildly tender mass in right inguinal region. Both ultrasonography and Computerized axial tomography scan (CT Scan) suggested that the mass arose from right sided undescended testis and left sided testis was normal-sized intrabdominal. His serum α -fetoprotein and LDH were within normal range and only α -hCG was raised 3-fold. He was found azoospermic, his serum LH and FSH were increased but serum testosterone was reduced. The mass was removed by inguinal exploration and histopathology confirmed seminoma of testis. Orchidopexy was done on contralateral side one month after the first operation.

A mass in the lower abdomen in a sexually active man with cryptorchoid testis strongly points towards the diagnosis of malignancy in the abdominal testis¹. The clinician should aware of it and the urologist should do prompt removal of the tumor and orchidopexy in contralateral side in bilateral case irrespective of age.

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Introduction

The testis initially develops in the abdominal region, when the descent into the scrotum is inhibited anywhere along its normal pathway it is called undescended testis (UDT) or cryptorchidism. Based on the location UDT can be classified as abdominal, canalicular, ectopic and retractile. By definition the abdominal testis is impalpable and may often located just at the internal ring. The canalicular testis lies further along the pathway of descent within the canal or at the top of the scrotum. The ectopic testis migrates from its normal pathway descend. In a review of 759 cases of UDT, an intraabdominal testis was found in 3.4%, an absent testis is 15.4% and ectopic testis is 9.7%, with 7.1% cases having the testis in the superficial inguinal pouch[1-2]. However an association between testicular maldescent and testicular cancer has been known for more than a century. It is estimated that individual born with undescended testis have approximately a 40-fold incidence of testicular malignancy over those born with scrotal testes[3]. We report a case of bilateral UDT in which seminoma arises in right inguinal testis but left side abdominal testis was still apparently healthy.

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Case Report

A 28-year-old farmer reached to adulthood with age-matched appearance of pubic hair and normal development of penile length and without having testes in scrotum. He got married at the age of 26-years and had erectile dysfunction which was assessed to be mild



Fig-1: A mass having regular-surfaced ill-defined margin.

to moderate (score 15) on the basis of the most widely used self-administered questionnaires of abridged 5-item version of the International Index of Erectile Function (IIEF-5). Though they were not using contraceptive methods they have no Issue. He noticed a gradual swelling in his right groin for four months and for last two months there was occasional dragging pain in the groin. With these complaints he got admitted into the department of Urology, Rangpur medical college hospital.

This apprehensive patient was mildly anaemic having a firm, non-tender, regular-surfaced, ill-defined margin, 8 cm x7 cm mass in right groin (Fig 1). He had well-developed scrotum with conspicuous median raphe without having testes in any side and there was no palpable lymph-nodes elsewhere in the abdomen and groin including supraclavicular regions. His stress penile length was 8.5 cm, normal genital and perineal sensation and the balbocavernous reflex. This farmer was happy with his earning and had good interpersonal relation with his wife.

His scrotal ultrasonography did not find any testes and abdominal ultrasonography suggested intra-abdominal normal-sized (23mmx10 mm)left testis and large complex soft tissue mass(85mmx76mm) with an hypoechoic oval area at the centre in right groin testis(Fig 2) without any pre and para-aortic lymphadenopathy. Computarized axial tomography was consistent (solid mass lesion of 76mmx82mmx85mm) with the ultrasonography findings (Fig 3).

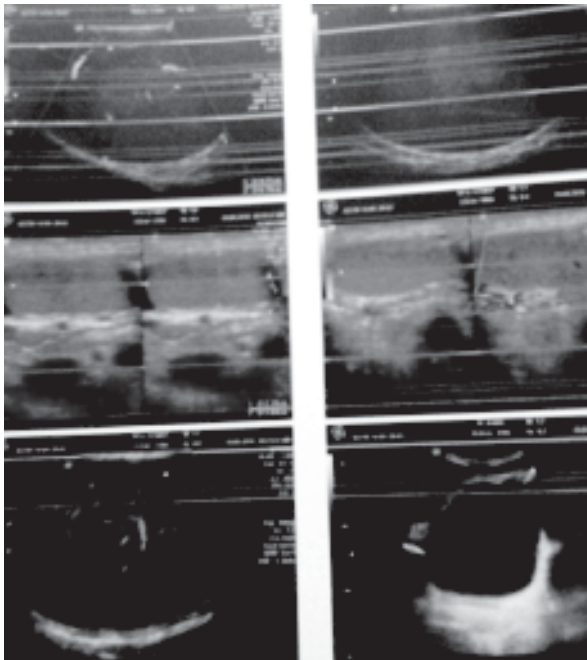


Fig.- 2: Ultrasonography suggested 85x76 mm mass in right groin testis.

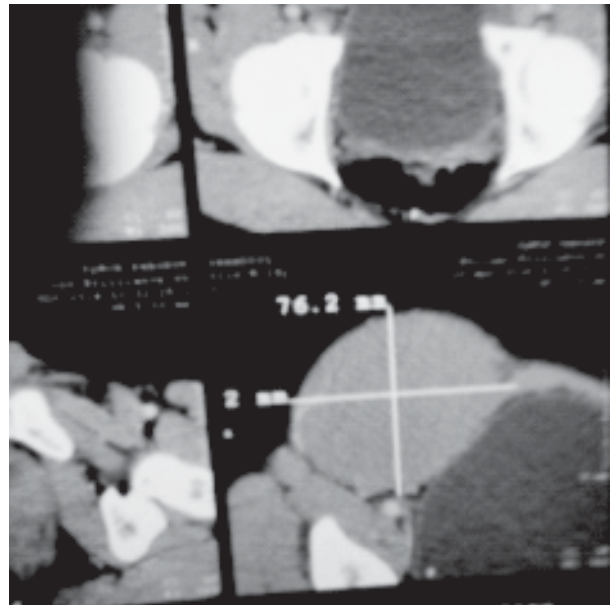


Fig.-3: CT scan showed 76x82x85mm mass arising from right testis without adherence to surrounding structure.

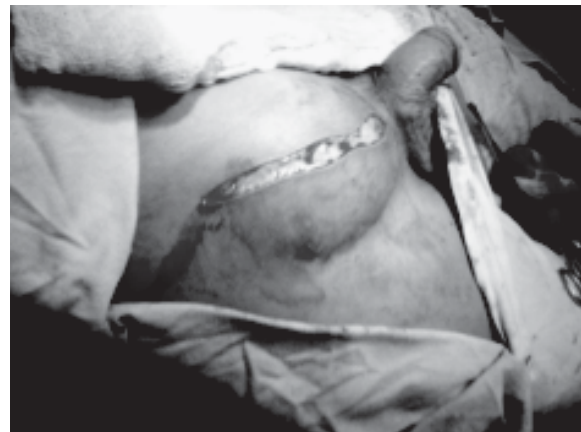


Fig.-4: The mass was explored through inguinal approach.

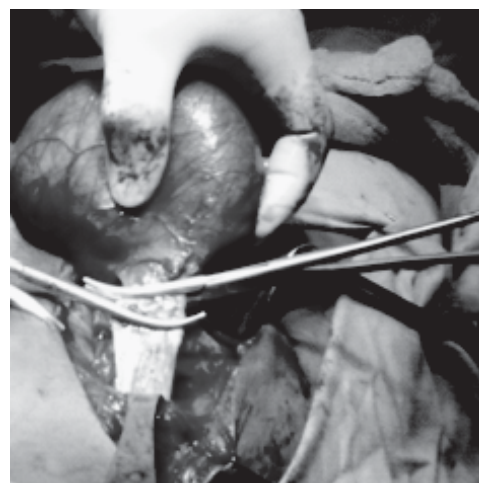


Fig.-5: Division of the cord and blood vessel to remove the mass.

His semen was analyzed, relevant serum hormones and tumor markers were assayed. Table-1 showed that his serum α -feto-protein, LDH were within normal range but β -hCG was increased about three-folds along with about 200-fold increase in ESR. He was azoospermic, his serum FSH was increased 6-folds; serum testosterone was reduced while LH was increased to 2-folds (Table 1). His chest X-ray did not showed any consolidation suggestive of metastasis.

After proper counseling about the fertility and potentiality, the mass was explored through inguinal approach (Fig 4) and it was found inside the external oblique fascia just outside the internal inguinal ring. It could be easily mobilized and removed (Fig 5). Cut surface of the mass was homogenous and pinkish cream in colour and appeared to compressed neighbouring testicular tissue (Fig.-6). The postoperative period was uneventful and histopathological examination revealed seminoma of testis.

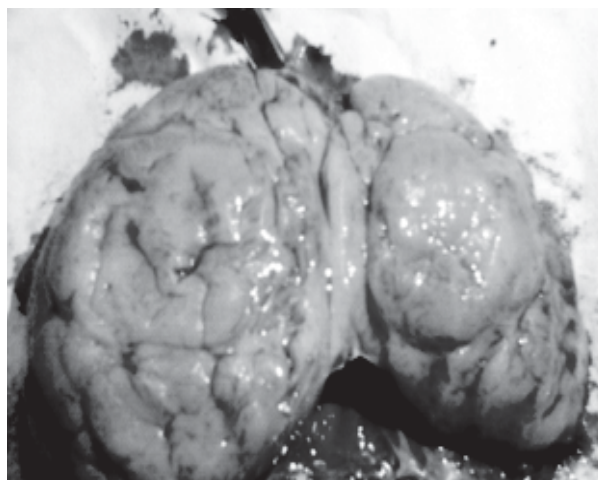


Fig.-6: Cut surface of the mass was homogenous and compressed the neighbouring testicular tissue.

Table-I
Report of tumor markers, hormones and semen analysis

Parameters	Patient's value	Normal value	Comment
Serum α -fetoprotein	1.40 ng/ml	9 ng/ml	Normal
Serum β -hCG	28.3 mIU/ml	\hat{A} 10 mIU/ml	Raised 3-fold
Serum LDH	317 U/L	208-378 U/L	Normal
Serum testosterone	5.6 nmol/L	10.40-35.71 nmol/L	Reduced
Serum LH	26.70 mIU/ml	2-12 mIU/ml	Increased
Serum FSH	46 mIU/ml	1-8 mIU/ml	Increased
Semen analysis	No sperm seen	20-50 million sperm/ml	Azoospermia
Blood ESR	215mm at the end of 1 st hour	0-12mm at the end of 1 st hour	Increased

Discussion

Undescended testis (UDT) is the most common congenital abnormality of the genitourinary tract. Being so, it has earned a good deal of interest of urologists in general and pediatric urologist in particular. It is considered as an important risk factor for the development of testicular cancer. Batala et al did a meta analysis and found that the rate of cancer development in formerly or currently UDT is about 10-40 fold higher while the risk of cancer in the contraletaral normally descended testis is about 1%[4]. Furthermore, it was suggested that 12% higher risk associated with malignant degeneration in abdominally retained testis compared to 7% in inguinally retained testis. However, Martin et al studied the histological type of testicular cancer in corrected or uncorrected cases of UDT and found that overall 40% of cases demonstrated seminoma, followed by embryonal carcinoma and

teratocarcinoma in 25% and 19% respectively[5]. The histopathological report of our current case showed it to be seminoma, the commonest type of testicular cancer.

Testicular cancer is categorized using the TNMS (primary tumor, regional nodes, metastasis, serum tumor marker) staging system created by American Joint Committee(AJCC) on cancer. Staging is determined based on how much the primary tumour has spread to the tissues surrounding the testicle, on the extent of spread to regional lymph nodes, on metastasis to other organs, and serum levels of proteins produced by certain types of testicular cancer which includes α -fetoprotein, β -hCG and Lactate Dehydrogenase. Furthermore, Mensel et al found that in early stage of cancer, level of these proteins tend to be normal range and seminoma testes do not increase α -fetoprotein levels and occasionally increase β -hCG levels while nonseminomatous cancer when progress, they elevate

α -fetoprotein and α -hCG levels[6]. They also found that Lactate dehydrogenase(LDH) levels are often elevated in widespread metastatic testicular cancer. Whenever our clinical suspicion and ultrasonographic study suggested the groin swelling of our patient as a testicular tumour, we did CT scan and estimated the serum tumour markers. The normal serum levels of α -fetoprotein and mild increase in α -hCG level in our case were comparable to the findings of the study of Mensel et al. The results of tumour markers in our study, furthermore, consistent with the findings of CT scan and chest x-ray that the tumor was localized to testis without any metastasis to retroperitoneal lymph node and lung and hence our patients tumour fall into the category of T₁N₀M₀S₀ of AJCC category and we performed the excision only.

Pinczowski et al did a population based cohort study and find testicular cancer in 0.13% of orchidopexy cases which were performed before the age 15 years and no testicular cancer was noted in patients who underwent orchidopexy at age less than 11 years[7]. However, in a patient older than 12 years the decision to observe, remove or fix a UDT is complex. The risk of malignancy increased. In our bilateral case the abdominal UDT was still healthy whereas in inguinal UDT carcinoma developed, why such discrepancy had occurred need to evaluate. However despite the chance of development of carcinoma in left side we performed orchidopexy in that side, at least, for two reasons: (1) because the testis was apparently healthy looking and its Leydig cells were still functioning which was reflected by his serum testosterone level. Furthermore, if we did orchidectomy rather than orchidopexy we need to put the patient on exogenous testosterone for rest of his life;(2) though there is at least 1% substantial risk of cancer development, it would be possible for the patient to do self examination to identify tumour at its earlier stage, if develops.

Impairment of germ cell maturation and subsequent infertility in adulthood is a well-recognized consequences of UDT. Hadziselimovic et al reported that the incidence of azoospermia in unilateral cryptorchidism is 13% and this figure increases to 98% in untreated bilateral UDT, making UDT the most common etiological factor of azoospermia in the adult[8]. Our patient was married for two years and this sexually active couple could not achieve pregnancy within two years despite not using contraception. To find out the etiology as well as medicolegal aspect of orchidectomy we did semen analysis in our patient which showed azoospermia. We

also estimated serum FSH level. Trisner et al suggested that serum FSH level in men were usually inversely correlated with sperm count and indicate the integrity of seminiferous tubules, a marker of spermatogenesis[9]. Furthermore, they found that patients with bilateral UDT have significantly lower sperm motility, sperm concentration while showing higher FSH level than those with unilateral UDT. Higher level of serum FSH in our patient also comparable with their findings.

The practicing andrologist may raise the question that UDT may have relation with erectile dysfunction (ED). To quantify the sexual interest, performance, and satisfaction of our patient we provided the Bengoli version of IIEF-5 which is most popularly used self-administered questionnaires to evaluate ED. It showed that our patient had score 15 defines mild to moderate ED. We also considered the interpersonal relationship, occupational status, financial and social support and excluded the cause of neurogenic impotency. This young farmer's family was satisfied with his current economy and he had good relation with his wife. All these suggested that decreased performance status in our patient might have multifactorial etiologies and his bilateral UDT might have some permissive role due to its testosterone lowering level effect. The result of decreased testosterone level in our case is consistent with the report of Tasian et al who suggested that there is 1% risk of per month Leydig cell depletion for each month a testis remains undescended[10].

Conclusions

This report suggest that rapidly enlarge tender abdominal mass in UDT should alert the urologist towards consideration of the possibility of testicular tumour and in bilateral case prompt surgical intervention in affected side should be done according to the AJCC staging system and orchidopexy in contra lateral side should be done irrespective of age and then put the patient on close surveillance protocol.

Conflict of Interest : None declared

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- Abbreviations:**
ED : Erectile Dysfunction
UDT : Undescended Testis