TESTICULAR TUMOR IN UNDESCENDED TESTIS IN CHILDREN BELOW 5 YEARS OF AGE

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INTRODUCTION

• UDT is a common congenital anomaly affecting 2-5% boys at term and fall to 1% at 1 year

• Children born with UDT have increased risk of testicular malignancy

• Overall testicular tumor accounts for 2% of all solid malignant neoplasm with predominantly Yolk sac tumor histology
TUMOR IN UDT BELOW 5 YEARS-
INTRODUCTION

• 10% of Testicular tumor arise from UDT (Abratt et al. 1992)
• In UDT Testicular Tumor usually occur during puberty (peak age 3rd & 4th decade)
• histology is mostly Seminoma and mixed Germ cell tumors with element of ECT, teratocarcinoma & choreocarcinoma (Batata et al., Cancer; 1992)
TUMOR IN UDT BELOW 5 YEARS - INTRODUCTION

• Relative risk of developing testicular tumor in UDT is 4.8 (Dieckman K P, World J Urol 2004)

• Till date 32 cases of Intraabdominal testicular tumor (IAT) reported in UDT before puberty

• Prepubertal tumor differ with respect to incidence, clinical manifestation, histopathology and prognosis
TUMOR IN UDT BELOW 5 YEARS - AIMS

• Evaluation of the presentation, treatment and outcome of testicular tumor in undescended testis in boys below 5 years of age
TUMOR IN UDT BELOW 5 YEARS - MATERIALS AND METHODS

• Records review of boys below 5 yrs 2008-2011 having UDT
• Both benign and malignant germ cell tumor (GCT) in Undescended testis
• Presentation of UDT was noted
• Benign cases - only surgery
• Malignant cases - Neoadjuvant and adjuant chemotherapy, (Cisplatinum+Etoposide+Bleomycin- PEB)
TUMOR IN UDT BELOW 5 YEARS - RESULTS

• 7 boys age range 18-54 month (mean 31 months) having GCT in UDT
• 4 boys had nonpalpable UDT while 3 had palpable UDT

• In palpable UDT 1/3 had testis in inguinal canal, 1/3 had peeping testis and 1/3 had enlarged testicular mass in inguinal canal

• 5/7 had right sided UDT, 2/7 had left sided UDT
TUMOR IN UDT BELOW 5 YEARS - RESULTS

- 5 of 7 (71%) had abdominal mass at presentation (out of 5 one had both inguinal and abdominal mass)

- Antenatally detected mass in 1 patient (27 week) 2.1x1.9cm - became 4.9 × 4.4 × 4 cm at 5 month

- 2 of 7 (21%) had GCT detected during orchiopexy (initially diagnosed as palpable unilateral UDT)
TUMOR IN UDT BELOW 5 YEARS - RESULTS

• USG and CECT showed heterogenous solid cystic mass
TUMOR IN UDT BELOW 5 YEARS - RESULTS

- Mass in UDT on clinical examination
TUMOR IN UDT BELOW 5 YEARS - RESULTS

• Tumors detected during orchiopexy
TUMOR IN UDT BELOW 5 YEARS - RESULTS

- αFP was markedly elevated in 3 patients having abdominal mass (800ng/ml, 352340ng/ml, 18960ng/ml)
- 2 of 3 patients having elevated αFP had endodermal sinus tumor
- 1 of 3 patients having elevated αFP had embryonal carcinoma
TUMOR IN UDT BELOW 5 YEARS - RESULTS

• 2/5 patients having abdominal mass one had immature teratoma and one had mature teratoma (antenatally diagnosed)

• 2/7 patients detected incidentally during orchiopexy had mature teratoma
TUMOR IN UDT BELOW 5 YEARS - RESULT

- Neoadjuvant chemotherapy (PEB) was given to 3 patients having raised αFP- 2 course
- αFP went to normal in all 3 patients
- Surgical resection was done in all 3 patients
- One course of adjuvant chemotherapy (PEB) was given to all 3 patients
TUMOR IN UDT BELOW 5 YEARS - RESULT

• Patients with mature and immature teratoma did not receive any chemotherapy

• All the 7 patients are alive and disease free

• follow up ranges from 48 months - 2 months

• 2 patients subsequently had testicular prosthesis
TUMOR IN UDT BELOW 5 YEARS - DISCUSSION

- Risk factors association in UDT
  - Bilateral UDT
  - Abnormal external genitalia
  - Abnormal karyotype
  - Intraabdominal testis
  - Late corrected UDT
  - Uncorrected UDT

( Hadley M, J of Urol, 2009)
TUMOR IN UDT BELOW 5 YEARS- DISCUSSION

• RR of testicular cancer in all patients with UDT is 2.75 to 8 with lower risk (RR 2 to 3) in patients undergoing prepubertal orchiopexy

• Malignant tumors developing in uncorrected abdominal or inguinal testes 74% are seminoma
• Malignant testis tumors developing following orchiopexy 63% are nonseminomatous
• Orchiopexy appears to decrease the risk of seminoma (Hadley M, J of Urol, 2009)
TUMOR IN UDT BELOW 5 YEARS - DISCUSSION

• Till date 33 case of intraabdominal tumor (IAT) in UDT in prepubertal (0-15 years, average 2.6 yrs)
• Right 13, left 19, 1 not mentioned
• Mature teratoma (25/33), Immature teratoma (2/33), Yolk sac tumor (2/33), Embryonal carcinoma (2/33), Seminoma (1/33)


Natsumi Tanaka
TUMOR IN UDT BELOW 5 YEARS - DISCUSSION

- Possible explanation for prepubertal testicular tumor in UDT is Germ cell theory

- Primordial germ cell in yolk sac
  - Migration by 4th-5th week
  - Differentiates to ecto, meso, and endoderm
  - Migratory capacity - anato variety
    - Gonad & Midline structure
    - Intra-abdominal prepubertal testis
• Another explanation is an unidentified intranatal/perinatal oncogenetic process
• Antenatal tumor process itself may prevent testicular descent
• Pathologically, prepubertal testicular teratomas are almost always pure
• Prepubertal testicular teratomas are benign
CONCLUSION

• Prepubertal uncorrected UDT tumors are rare

• Suspect strong possibility of intraabdominal testicular germ cell tumor if UDT coupled with abdominal mass

• Prepubertal intraabdominal testicular germ cell tumors are usually mature teratoma but may be malignant

• Benign tumor-resection only
• Malignant tumor- chemotherapy and resection