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Pediatrics

TESTICULAR TERATOMAS IN CHILDREN- CASE SERIES

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ABSTRACT Testicular tumors are very uncommon in children and teratomas are the commonest of these tumors. We are reporting our experience with five cases of testicular teratomas in the last 25 years.

KEYWORDS : Testicular teratomas, germ cell tumors, prepubertal

Introduction:
The incidence of pediatric testicular tumors has been found to be 0.5-2 per 100,000 and account for 1-2% of all pediatric tumors in children in western literature [1]. A 40% of the pediatric germ cell tumors originate in the gonads, with the rest of the tumors arising from extragonadal sites [2]. The tumors prevalent in this age group include testicular teratomas, yolk sac tumors and malignant germ cell tumors (GCT's). In a study by Akiyama et al, testicular tumors were found to be the most prevalent testicular tumors in prepubertal age group [3]. The number of prepubertal children with malignant GCT's is very less. Also, very few testicular teratomas have been reported in infants. This review aims to shed some light on infantile and childhood testicular teratomas and their management.

Case report:
We are describing our experience about testicular teratomas over last 25 years, from 1990 to 2015. A retrospective review of the cases with testicular teratomas admitted in the department of pediatric surgery of a tertiary care hospital was carried out. A total of 5 cases were admitted during this period with age ranging from 8 months to 4 years of age. All of them presented with painless, slowly progressive unilateral testicular swelling (fig 1). The swelling was firm, non-transilluminant and we could get above the swelling. There was no inguinal lymphadenopathy and the abdominal examination was normal in all the cases.

Fig 1: 3 years old child with testicular swelling which was later found to be testicular teratoma.

Ultrasonography of the swelling revealed solid heterogenous mass arising from the testis. All the cases were explored through inguinal approach. The spermatic cord was clamped and the respective sided orchidectomy was carried out (fig 2). CECT abdomen and pelvis was done to look for any residual tumor. The histopathological report confirmed the diagnosis.

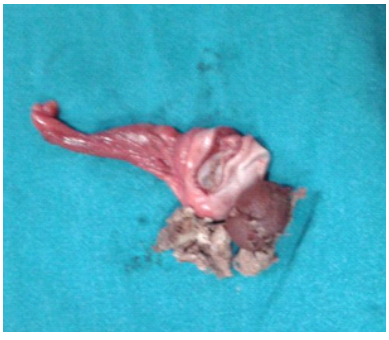

Fig 2: Gross specimen of resected testicular teratoma.

Discussion:
The testicular GCT's are mostly found in adults and less frequently in children, with a peak in adolescence. There occurs a bimodal age of presentation of these tumors. Children younger than 3 years of age present with either mature teratomas or malignant GCT's, whereas adolescents present with seminomas or other mixed GCT's. The cellular diversity of these tumors is explained by various theories of which the most accepted one is the germ cell theory [4]. The primordial germ cells originate in the yolk sac and migrate to the gonads in 4^{th}-5^{th} week of gestation. These totipotent cells are capable of differentiating into the tissues composed of ectoderm, mesoderm or endoderm. The differential migratory capacity is responsible for the cellular diversity observed in these tumors. In a series by Akiyama et al, testicular teratomas were found to be the most common testicular tumors found in the prepubertal age group over a span of 44 years [3]. Ross et al, in 2002 analysed data from American Academy of Pediatrics tumor registry [5]. The yolk sac tumors were found to be the most common followed by testicular teratomas and stromal tumors. Similar findings were reported by Baik K et al [6]. All these tumors were found to be mostly benign. The presenting complaints in children are painless testicular swelling noticed by mother or the caregiver, though they can be painful as well in some cases. The malignant tumors have the propensity to spread to the retroperitoneal lymph nodes and lungs. The testicular swelling can initially be investigated using ultrasonography, which can demonstrate testicular and extratesticular swelling and is also helpful in differentiating from common conditions like hydrocele. The tumor markers which can be done preoperatively, include human chorionic gonadotropin (HCG) and alpha-fetoprotein (AFP). AFP levels are usually elevated in the neonatal period and early infancy. So, elevated AFP levels done in infants >6 months of age provide a clue towards malignant etiology. In view of less chances of malignant potential of these tumors, the surgical approach can be testis saving and the resected tumor can be sent for frozen section analysis and further exploration done if found to be malignant. This can be combined with platinum based chemotherapy to provide maximal cure rates [7]. But, in the present series, all were managed with orchidectomy as the whole testicular tissue was involved.

Conclusion:

Any painless, slowly growing testicular mass in a child should be differentiated from malignant tumor and should be managed early to prevent malignant transformation.

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