Cryptorchidism: Aspects of Neoplasms

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Abstract:

Objectives: An attempt to make a rational strategy for treatment of cryptochidism at post puberty age.

Methods and materials: A retro-prospective study was done over 36 months on 100 male patients over 12 years old (post puberty) with unilateral empty scrotum. All the patients under went orchiectomy by inguinal approach and histopathological studies were performed for all excised testes looking for neoplastic changes.

Results: Out of the 100 post pubertal patients 50% at the age 12-22 year, 40% at the age 23-42 and 10% above 43 years. At the time of surgery 10% of the testes were intra abdominal, 25% above the tubercle 45% at the tubercle and 10% were at the superficial inguinal pouch. Out of the excised testes 3% had neoplastic changes, 1% carcinoma in situ and 2% seminomatous, all of them were intra abdominal.

Conclusion: Early reposition of the cryptiorchidism reduces the risk of neoplastic changes. A male who presented with unilateral cryiptorhidism testis at post pubertal age advised orchiectomy with histopatholgical study and in other way if presented with bilateral cryiptorhidim testes we recommend orchiopexy for lower position testis with testicular biopsy and or chiectomy for other (higher) position testis.

Key Words: Cryptorchidism, orchiectomy Testis, testicular neoplasm's, risk.

Introduction:

Cryptorchrdism is the most common genital problem encountered in pediatrics, over all 3% of full term male newborn have cryptorchidism decreasing to 1% in male infant aged 6 months to 1 year. Cryptorchidism literally means hidden or obscure testis and generally refers to an undecended or maldescended testis. Despite more than 100 years of researches, many aspects of cryptorchidism are not well defined and remain controversial.[1-3]

Untreated cryptorchidism clearly has deletrious effect on the testis over time. Approximately 20-30% of patients with cryptorchidism have nonpalpale testis .Early reposition of the testis into the scrotum has been a main stay of treatment to reduce the risk of infertility and development of testicular cancer as male with undescended testis (U.D.T) are 40 times as likely to develop testicular cancer compared to normal.[1,2] The location of UDT affects the relative risk (RR) of testicular cancer.[1,2,4]

Recent studies have shown that pre pubertal orhiopexy reduced this risk. But no much study done about the definitive treatment at post pubertal age even some studies of males older than 32 years with unilateral UDT recommend close observation with orchiopexy versus orchiectomy.

Purpose:

An attempt to make a rational strategy for treatment of cryptorchidism at postpuberty age.

Methods And Materials:-

A Retro prospective study was done over 36 months (from 30-6-2003 to 30-6-2006) on 100 male patients over 12 years old (post puberty). Compliant of unilateral empty scrotum (cryptorchidism).

All the patients were examined for testicular anatomic position and for any associated anomalies.

Routine laboratory investigation done: Include renal function testes, CBP, Blood sugar.

Radiological studies to localize the non palpabale testis including: ultrasound abdomen and pelvis & CT scanning and M.R.I were performed.

All the patients: underwent orchedectomy by inguinal approach with average stay at hospital of one day.

Histopathological studies were performed for all excised testis looking for carcinoma in situ (CTS) or testicular neoplasia.

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Results:-

Out of 100 postpubertal patients under went orchiectomy for cryptorchidism 50(50%) of them were seen at age 12-22years, 40(40%) at 23-42 and only 10(10%) of patients were seen at age above 43years. Table (1).

Table (1): Distribution of the patients according to age group.

Age grouping	No. of patients	Total
12-22	50(50%)	50
23-42	40(40%)	40
Above-43	10(10%)	10
Total	**100(100%)**	**100(100%)**

On local physical examination: 30(30%) of the testes were not palpable, 13(13%) the testis above the tubercle, 35(35%), at the tubercle site, 15(15%) present on the upper scrotum and 7(7%) of the testes were at ectopic site. Table (2).

Table (2): Anatomic position of the cryptorchidism testis.

Anatomic patients	No. of testis	Total
Non palpable	30(30%)	30
Above the tubercle	13(13%)	13
At the tubercle	35(35%)	35
Upper scrotum	15(15%)	15
Suspected ectopia	7(7%)	7
Total	**100(100%)**	**100**

At exploration and the surgical excision of the testis the anatomic findings were: intra abdominal 10(10%), above the tubercle (At deep inguinal) 24(24%), at tubercle 45(45%), upper scrotum 9(9%), superficial inguinal pouch (ectopic) 10(10%) and atrophied only 1 testes (1%). Table (3).

Table (3): Anatomic position of the cryptorchidism testis at the time of surgery

Anatomic position	No. of testis	Total
Intra abdominal	10(10%)	10
Above the tubercle	25(25%)	25
Tubercle	45(45%)	45
Upper scrotum	9(9%)	9
Superficial inguinal pouch (SJP) (ectopic)	10(10)	10
Atrophic	1(1%)	1
Total	100(100%)	100

At he time of surgery: ten testes (10%) were found intra-abdominally, one of them (1%) at age of 12-22 years, four testes (4%) at age of 23-42 years and five testes (5%) at age above 43 years. Table (4).

Table (4): Distribution of the anatomic positron of testis with age grouping at the time of surgery.

Position of testis	age of patients			Total
	12-22	23-42	above 43	
Intra abdominal	1(1%)	4(4%)	5(5%)	10(10%)
Above tubercle	4	12	9	25(25%)
At tubercle	3	20	22	45(45%)
Upper scrotum	1	1	7	9(9%)
Ectopic	-	3	7	10(10%)
Atrophic	1	-	-	1(1%)
Total	10(10%)	40(40%)	50(50%)	100(100%)

The results of histopathological (H.P.T) studies of the excised testes indicated that only 3 testes had neoplastic change: 1(1%) with CIS at age of 12-22 years and 2(2%) with seminoma at age of 23-42 years. All of these testes are intra abdominal at the time of surgery. Table (5).

Table (5): Distribution of histopathological results according to age and position of testis at surgery.

H.P.T	No. of testis	Position of testis	Age grouping
CIS	1(10%)	Intra abdominal	12-22
Seminoma	2(20%)	Intra abdominal	23-43
Total	**3(30%)**		

Discussion:-

Several factors determine the success of surgery of cryptorchidism, the position of testis at surgery, the age of the patients and the association of abnormality of external genitalia or known abnormality of karyotype.[1-4]

Most of the previous studies, proved that early reposition of the cryptorchidism testis (orchiopexy) before 18 months of age will reduce the impairment of germ cell maturation (reduce the risk of infertility) and reduce the risk of neoplastic changes.[4,5]

Hadziselimovic and Herzog (2001) found a negative association between age and germ cell count at the age of 6 months.[1,7]

In our study all of the pateints had cryptorchidism testis above age of 12 years (post puberty) average of age (27.5 years). All of them (100 patients) were treated by orchectomy.

Our results of cryptiorchidism testes were comparable to that of Cendron and DucKett (1993) about the position of testes at examination and at time of surgery 10% intra abdominal, 25% bebbing (mobile above and to tubercle), 45% tubercle (cancoular), 9% at upper scrotam and 10% are at superficial inguinal pouch (ectopic).[1,4]

Lenz et al. domenstrated an abnormal echopattern in 3% of postpubertal testes that undergone orchiopexy.[19] In our study out of unilateral 100 cryptorchidrm testis post surgical excision: 3% of the testes had neoplastic changes which is in agreement with study of Cortes D (2001) and Hadley M and Elder (2008). All of these testes with neoplastic changes were intra abdominal.[5,6]

Persistent cryptorchid (inguial and abdominal) testes are at high risk for seminoma.

In contrast, corrected cryptorchid or scrotal testicle that undergo malignant transformation are most likely to become non-seminomatous.[6,13,14]

Only one testis of our study from the intra abdominal had CIS changes found in younger age of patients (12-22 years) and the seminomatus tumors in older age patients (23-43 years), these results match with the studies done of Giwerc Man et al and Matin D.C et al.[13-15]

Conclusions:-

We recommend surgery for cryptorchidism before 18 months of age to reduce the risk of lack of germ cells.

Any male presenting with unilaterally cryptorchidism testis above 12 years (post puberty) is adviced orchidectomy, with histopathological studies for any neoplastic change.

In other way if the male patients present with bilaterally cryptorchid testes we recommend orchiepexy for the lower surgical position testis (cancalar and upper scrotum) with testicular biopsy study and orchiedectomy for other (higher) position testis.

Screening for tumor markers (alpha fetoprotein, HCG, LDH) must be done for all post puberty patients with uni and Bilateral cryptorchidisms.

A large group study with pre and post puberty age with uni and bilateral cryptorchidism to be done with results of tumor markers and testicular biopsy studies for germ cells and neoplastic changes is highly recommend.

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