Texila International Journal of Public Health
ISSN: 2520-3134
DOI: 10.21522/TIJPH.2013.12.04.Art031

A Case Report on Congenital Hydrocele with Testicular Epididymal Disjunction

Mahesh, K. G., Magesh, C.*
Department of General Surgery, Sree Balaji Medical College and Hospital, Chennai, Tamil Nadu, India

Abstract

Cause of Male infertility is diagnosed at a later age unless a genito-urethral condition with detailed evaluation is required. Congenital developmental disorders remain hidden till it is surgically identified. In managing congenital conditions we could pick up developmental anomalies incidentally and end up charging diagnosis and management plan. A descriptive study of a boy of age 4 years reported with congenital hydrocele for which Herniotomy with eversion of the sac was done, upon which testicular epididymal disjunction was identified. The outcome of surgical correction and conservative management may vary with; diagnosing time, the extent of the pathology, and response to treatment. Considering Type IV epididymal disjunction present in, with inconclusive histological evidence of epididymal atresia, in the presence of normal karyotyping conservation long-term follow-up was chosen rather than the exploration of the disjunction given the risk of obstructive azoospermia. Wait and watch policy is better for type V epididymal disjunction rather than an aggressive surgical approach. Given androgenic development and the potential possibility of efficacious function in an individual of normal karyotyping.

Keywords: *Androgenic Stimulation, Congenital Hernia, Congenital Hydrocele, Fusional Anomalies, Sac Eversion, Testicular Epididymal Disjunction, Undescended Testis (UT).*

Introduction

A congenital hydrocele affects infants where there is a collection of fluid in the scrotum, causing it to swell. This occurs due to the incomplete closure of the connection between the abdomen and the scrotum during development. Congenital hydroceles are usually harmless and often resolve on their own within the first year of life. In some cases, surgical intervention may be necessary if the hydrocele persists or causes discomfort. There are incidences of accidental identification of developmental anomalies incidentally during surgical intervention. Such defects carry a risk of potential infertility. It's an alarming situation for the patient, attendees, and surgeon. The incidence of male infertility is incidentally increasing day by the pathology of male infertility can be associated with multiple genetic and developmental disorders.

Aim

This case report aims to assess testicular epididymal disjunction and congenital hydrocele and their association in presentation and coming off diagnosis and management plan given prospects.

Case Report

A 4-year-old boy was brought by his parents with C/O swelling over the scrotum for the past 6 months, insidious onset, size progressing gradually throughout the day, and a comparative reduction in scrotal size was noted at night. There were no complaints of burning maturation, fever, or hematuria. No

Received: 30.07.2024 ***Accepted: 30.09.2024*** ***Published on: 27.12.2024***
****Corresponding Author: maxchandran@gmail.com***

history of trauma, congenital disorders, developmental delay, other comorbidities, or past surgeries. On examination, the child was actively alert with no signs of developmental delay. A mild visible cough impulse was present over the left inguinal region. On examination of the genitourinary system, prepuce retracting and meatus visualized. The bilateral testis is palpable in the scrotum with mild fluid collection on the left side. Tràns illuminant scrotal swelling is present. A provisional clinical diagnosis of left congenital hernia with hydrocele was made. After further evaluation patient was taken up for Herniotomy. Intraoperatively there were no sacs and process vaginalis was found to be obliterated (Figure 1) shows the left Infantile hydrocele sac confirming Infantile Hydrocele. Eversion of the sac was done as shown in the (Figures-3,4,5). After delivering through the inguinal canal. The golden yellow-coloured fluid of approximately 12ml was drained as shown in (Figure 2) and on examination grade IV Testicular as shown in (Figure 5) epididymal disjunction was identified with no gross pathological evidence of epididymal atresia. (Figure-6) show closure of everted sac.

Discussion

Testicular epididymal disjunction refers to the separation of the testis from the epididymis. The testis is connected to the vas deferens by the tubular epididymis. This condition can be congenital or acquired, and when it occurs in the setting of congenital hydrocele, it can lead to complications such as testicular torsion or impaired fertility. There are different types based on the attachment. Types I, II, III, and IV are epididymis attachment patterns to the testis, respectively; Type I is epididymis attached to the testis at the head and tail; Type II is epididymis fully attached to the testis; Type VI is epididymal atresia, whereas Type V is no discernible link between the testis and epididymis [6]. In this case, we have incidentally identified grade V testicular epididymal disjunction which was not explored due to the risk of distortion of anatomy.

In cases of Infantile Hydrocele, at the deep inguinal ring level, obliteration of processus vaginalis is seen but its distal portion remains patent and collection of fluid occurs [4]. That is the reason for choosing the version of the sac.

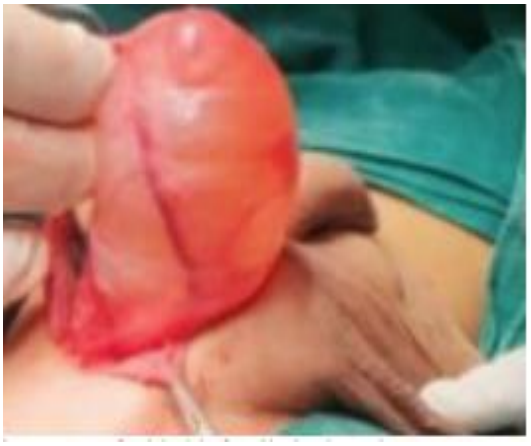

Figure 1. Left-Sided Infantile Hydrocele Sac

Figure 2. Hydrocele Fluid Drainage

On Eversion and Exploration of the Sac (Figures. 3, 4, &5)

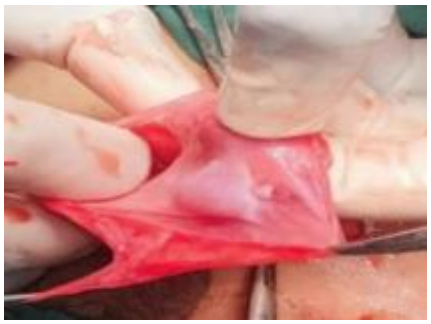

Figure 3. Shows the Left Testis

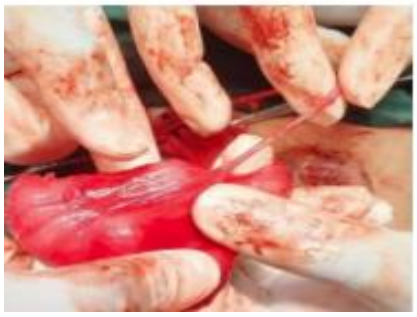

Figure 4. Epididymis was Traced

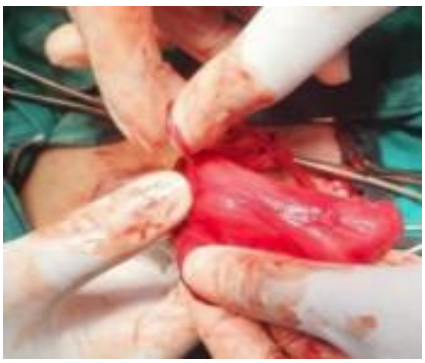

Figure 5. Grade IV Testicular Epididymal Disjunction

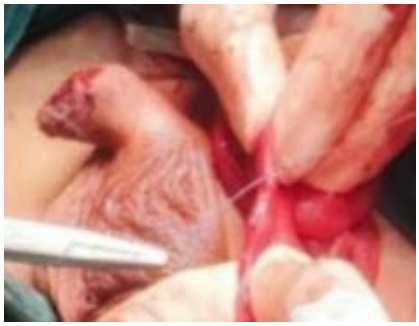

Figure 6. Eversion of Sac Done

Further explanation was not done over the disjunction given the risk of obstructive azoospermia. The exact incidence of testicular epididymal disjunction in congenital hydrocele is not well documented in the medical literature. This is likely due to the rarity of the condition and the fact that it may not always be diagnosed unless specific imaging studies or surgeries are performed.

In cases where testicular epididymal disjunction is suspected in a patient with congenital hydrocele, a thorough evaluation by a healthcare provider, usually a urologist, is essential. Diagnostic ultrasonography or Magnetic resonance imaging is used to evaluate the condition.

Management of testicular epididymal disjunction in the setting of congenital hydrocele may involve surgical intervention to reposition the testis and epididymis and prevent complications such as testicular torsion. The specific treatment approach will depend on the individual case and the patient's overall health.

Parents or caregivers of infants with congenital hydrocele need to be aware of the signs and symptoms of testicular epididymal disjunction, such as sudden severe pain or swelling in the scrotum and seek medical attention promptly if any concerns arise.

Overall, while the incidence of testicular epididymal disjunction in congenital hydrocele may be low, healthcare providers must be vigilant in monitoring this condition to provide timely and appropriate management. Irrespective of age correlation, the position of testis and PV patency almost 20% of spermatic obstruction was noted in epididymal anomalies of undescended testis. Hence risk of infertility needs to be anticipated in congenital anomaly. But in this case, the process vaginalis is obliterated and both testes were found within the scrotum. On the other hand, recent observations provided fresh proof. The most significant of these is that the testis that has not descended is frequently linked to fusional anomalies (FA) of the testis and epididymis. Many writers think that FA is the main cause of infertility in UT and that it is the result of abnormal intrauterine hormonal activities. It would be assumed that the same causes, which account for 80% of UT instances, are also responsible for FA. Testicular torsion (TT) frequently coexists with FA and other epididymis abnormalities. Amazingly, the unilateral forms of UT and TT can lead to infertility even in cases where the contralateral gonad is "healthy." Contralateral FA (likely related) in both entities. Since both the testicles are found in the scrotum with age-appropriate position and there is no evidence of onset of androgen insensitivity syndrome (AIS) one of the common causes of 46XY sexual development disorders, which can be divided into complete, partial and mild types according to the degree of defect in androgen receptor function [6].

Testosterone: dihydrotestosterone (T: DHT) ratio to be an accurate hormonal diagnostic tool [6]. Hence the a need to monitor along with the growth of the patient. At the time of normal development of secondary sexual

character, there is a higher chance of epididymal development and correction of disjunction. There is a chance of development of Epididymal Cysts and Spermatoceles. Once the patient enters the reproductive age should be counselled on the risk for obstructive azoospermia associated with epididymal cyst surgery, particularly if the epididymal cyst is located in the corpora or cauda of the epididymis. In this case, we have tried to wait and watch policy to decrease the incidence of obstructive azoospermia. FSH assay values of 7.6 IU/L or fewer and a testis long axis longer than 4.6 cm are present in 96% of men with obstructive azoospermia, and in 89% of men with spermatogenic dysfunction-related azoospermia, these parameters are present. Hence at present patients need to grow through routine follow-up to tackle infertility before its onset. There is severe hypogonadotropic hypogonadism which can manifest during the developmental phase and anomaly associated and should be treated with gonadotropin replacement. Less severe forms are more common, and patients may respond to antiestrogenic agents or aromatase inhibitors.

Result

Overall, the prognosis for patients with testicular epididymal disjunction can vary depending on the timing of diagnosis, the propensity of pathology and the reaction to doctoring. With timely intervention and accurate treatment, patients achieve successful outcomes and maintain good testicular health and function.

Limitations of the Study

The patient needs to be followed up through adolescence and adulthood to evaluate the prognosis of the condition. Long-term follow-up can have logistic difficulties.

Conclusion

Potential causes of male infertility diagnosed incidentally in children need long-term follow up including adulthood given androgenic stimulation and development and healthy functioning.

Around 75% of cases of undescended testis have anomalies concerning the epididymo-testicular relationship and of these excretory types of infertility is a definite effect of 36% [3].

Epididymal anomalies have an association with processus vaginalis patency

There is literature to support the association between undescended testis and epididymal disjunction, but in the patient bilateral tests are found in age-appropriate position.

In young boys, it’s better to opt for a wait-and-watch policy rather than an aggressive surgical correction of anatomy at a very young age.

Acknowledgements

I am thankful to Sree Balaji Medical College and hospital and staff, parents of the patient and patient, for their cooperation in proceeding with the study. There is no conflict of interest.

Reference

[1]. Logsdon, N. T., Gallo, C. M., Sampaio, F. J. B., Favorito, L. A., 2022, Mar-Apr; Epididymal disjunction anomalies in undescended testis – a factor associated with spermatic obstruction. *Int Braz J Urol*. 48(2), 336-346. Doi 10.1590/S1677-5538.IBJU.2022.99.07. PMID: 35170897; PMCID: PMC8932036. https://pubmed.ncbi.nlm.nih.gov/35170897

[2]. Merksz, M., Acta Chir Hung, 1998, Fusional anomalies of the testis and epididymis.;37(3-4), 153-70. PMID: 10379367. https://pubmed.ncbi.nlm.nih.gov/10379367/

[3]. D e Grazia, E., Gattuccio, F., Fatta, G., Cigna, R. M., Agosta, E., Acta Eur Fertil, 1982, Mar; Epididymo-testicular anomalies in the undescended

testis. How important is their effect on infertility? 13(1):1-17. English, Italian. PMID: 6126982. https://pubmed.ncbi.nlm.nih.gov/6126982/

[4]. Huzaifa, M., Moreno, M. A., Hydrocele, 2023, Jul 3. In: StatPearls [Internet]. Treasure Island (FL): *StatPearls Publishing*; 2024, PMID: 32644551.
https://www.ncbi.nlm.nih.gov/books/NBK559125/

[5]. Zhonghua, Er Ke Za Zhi. 2024, May, Subspecialty Group of Endocrinology, Hereditary and Metabolic Diseases, the Society of Pediatrics, Chinese Medical Association; Editorial Board, Chinese *Journal of Pediatrics; National Clinical Research Center for Child Health*. [Expert consensus on the diagnosis and treatment of androgen insensitivity syndrome in children]. 15;62(6), 501-508. Chinese. Doi: 10.3760/cma.j.cn112140-20231108-00353. Epub ahead of print. PMID: 38763869. https://pubmed.ncbi.nlm.nih.gov/38763869/

[6]. Natasha, T. Logsdon Carla, M. Gallo, Francisco, J. B., Sampaio, Luciano A Favorito, 2022, Epididymal disjunction anomalies in undescended testis - a factor associated with spermatic obstruction. *Int Braz J Urol*. Mar-Apr; 48(2), 336–346. Published online 2022, Jan 10. Doi: 10.1590/S1677-5538.IBJU.2022.99.07, PMCID: PMC8932036PMID: 35170897

[7]. Indrashis Bhattacharya, Souvik Sen Sharma, Subeer S Majumdar, 2024, Etiology of male infertility: An update Reproductive Sciences 31 (4), 942-965,
https://pubmed.ncbi.nlm.nih.gov/38036863/

[8]. Krishnan et al. 2024, BMC Urology 24:115 https://doi.org/10.1186/s12894-024-01449-0;BMC Urology/https://bmcurol.biomedcentral.com/articles/10.1186/s12894-024-01449-0

[9]. Heidelbaugh, J. J., Belakovskiy, A. 2024, Jun; Testosterone Replacement Therapy for Male Hypogonadism. Am Fam Physician. 109(6), 543-549. PMID 38905552. https://pubmed.ncbi.nlm.nih.gov/38905552/