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COMPERATIVE ANALYSIS OF THE SURGICAL METHODS OF ORCHIDOPEXY FOR CRYPTORCHIDISM IN CHILDCHOOD

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ABSTRACT

The cryptorchidism is a testis which is arrested in a different level in normal descendedus subsequently of disturbance in the embryonic organogenesis. This is the most frequent pathology in childhood. The two main methods of orchidopexy Schoemaker and Bianchi propose excellent results and low percent of postoperative complications.

PURPOSE: To review the results of retrospective investigation of basic methods for orchidopexy make in pediatric surgery- Schoemaker and transscrotal access Bianchi.

MATHERIALS AND METHODS. Since 2006-2012 year in Pediatric Surgery Clinic in Stara Zagora and Plovdiv were operated 352 children with undescended testicle.The group of children which were examinated was between 6 months and 16 years old.Dominates the right side localization.

Generally 380 operations were made, 168(44,2%) from them were for right undescended testis, 140(36,8%) were for left undescended testis.72 children were operated for bilateral retention.The basic methods of therapy was Schoemaker and Bianchi.It was made 16 operations(4.21%) with Bianchi"s method and 364(95,79%)with Schoemaker's method.

RESULTS: The basic methods of diagnosis of cryptorchidism were: clinical examination and ultra sound. At children with bilateral retention were made and ultra sound of abdomen for connected anomalies,genetics and hormonal examinations.At 5(1.4%) of the children were established Down syndrome. At 10 (2.9%) of children have connected anomalies.

The basic methods of therapy were the method of Schoemaker and the method of Bianchi. On the average of hospitalized were 2 days(1-3 days) The mean operative time was shorter for. Bianchis' method-26-30 min,than Schoemakers' method – 52-68 min.The median follow-up duration was 36-48 months.The children which were operated by Schoemakers' method were observed 4(1%) patients with suporation, 10 (2,75%) patients with retraction,2(0,50%) was necessary reoperation.All testicles treated with Bianchis' method s except 1 (93.8%) were located in a good position within the scrotum and had a good consistency; 1 testisretracted postoperatively.There was no inguinal hernia or suporation as a postoperative complications

CONCLUSIONS: The cryptorchidism require operation on time.The orchidopexy is a main method in treatment of undescended testicle in the pediatric surgery.The Schoemaker's method is the basic method in pediatric surgery. The Bianchi~s method is the method for operation by indications and it provides excellent results.The surgical method has to consistent with position of testis.

Key words: undescended testicle,inguinal ring, orchidopexy, Bianchi's method, Petrivalsky-Schoemaker's method.

INTRODUCTION

The cryptorchidism is retained at different levels along the normal testis failure resulting abnormal embryonic organogenesis. This is the most common pathology in childhood. In the neonatorium is observed in 2-4% of the full-term infants and in 33% of the preterm infants at birth, but after 1 year of age only 1% of them have retained testicle. After the 5th lunar month begins testis descent to the inguinal canal and passes it along with the processus vaginalis peritonei at the 7th lunar month. Descent is completed in the 9th

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lunar month, but in premature infants may have been completed by the first year of birth. The testis fails is under the control of maternal gonadotrophins and the infringement in this balance leads to pathology in child organismus. In the ethiopathogenesis is effect of factors of the fetus, congenital anatomical abnormalities of the gubernakulum, prematurely born infant or fetal hypotrophy. (1)

MATHERIALS AND METHODS

Since 2006-2012 year in Pediatric Surgery Clinic in Stara Zagora and Plovdiv were operated 352 children with undescended testicle.The group of children which were examinated was between 6 months and 16 years old.Dominates the right side localization. Generally 380 operations were made, 168(44,2%) from them were for right undescended testis, 140(36,8%) were for left undescended testis.72(19%)children were operated for bilateral retention.The basic methods of therapy was Schoemaker and Bianchi.It was made 16 operations(4.21%) with Bianchi"s method and 364(95,79%)with Schoemaker's method.

RESULTS

The basic methods of diagnosis of cryptorchidism were: clinical examination and ultrasound **(Fig. 1).** At children with bilateral retention were made and ultra sound of abdomen for connected anomalies,genetics and hormonal examinations.At 5(1.4%) of the children were established Down syndrome. At 10 (2.9%) of children have connected anomalies.

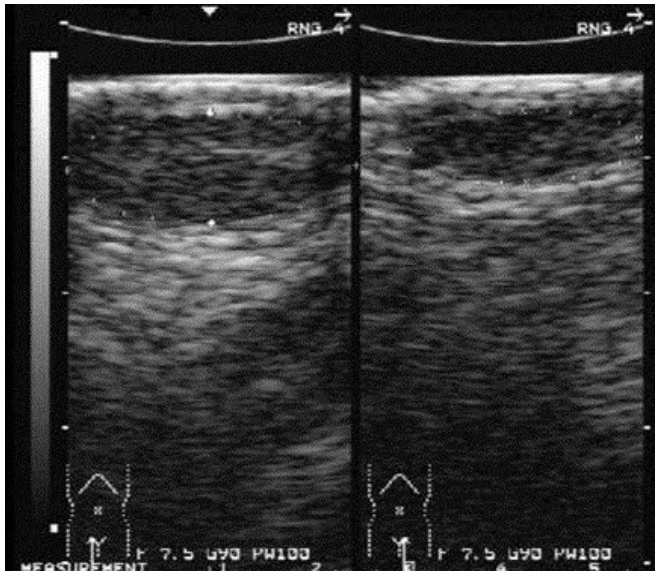

Fig. 1. Ultrasonography of the inguinal region

1.Pectus excavatum-2(0.56%))
2.Hypospadia-2(0.56%)
3.Foramen ovale-1(0.28%)
4.Thalassemia-3(0.85%)
5.Pyloric stenosis -1(0.28%)
6.Vesicouretral reflux-1(0.28%)

The basic methods of therapy were the method of Schoemaker and the method of Bianchi. On the average of hospitalized were 2 days (1-3 days). The median follow-up duration was 36-48 months.

Table1. *Results*

Method	Schoemaker	Bianchi
Numbers of patients	336(95,79%)	16(4,21%)
Operative time	52-68 min	26-30 min

Postoperative complications:

Method	Schoemaker	Bianchi
Suppuration	4(1%)	-
Retraction	10(2,75%)	1(6,3%)
Reoperation	2(0.5%)	-

DISCUSSION

Basic surgical method of therapy is orchidopexy and should be done in age 18-24 months. It consists in:

Testicular mobilization and separation of the spermatic cord from hernial sack

Funiculolizis to maximum extension of the testicular vessels and descent of the testis into the scrotum

Fixing of the testis into the scrotum

Removal of accompanying hernia (1,7)

Orchidopexy a modo Schoemaker (1931),basic surgical method **(Fig. 2)**

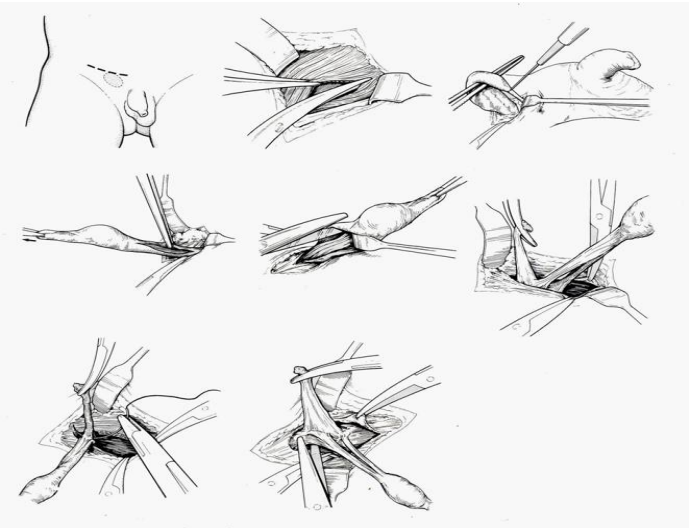

Fig. 2. Schoemaker's method

It formed lodge into the skin and tunica dartos, from the external inguinal ring in the bottom of the scrotum and paves the way for Diaphanous tissues .The gubernaculum or tunica vaginalis is grasped by the forceps and the testis is gently drawn down and fixed in the scrotum (1, 7).

Orchidopexy a modo Bianchi (1989) - Transscrotal access. **(Fig. 3), (Fig. 4)**

Orchidopexy technic by indication –palpable undescended testicles located distal to the external ring of the inguinal canal

The basis of the method is the conception of Bianchi, that it is not necessarily undscended testes have a shorter than normal a.spermatica.The technique has the advantage of a single incision, much less dissection and disruption of tissue, greater comfort for the "day-case" child, rapid healing with excellent cosmesis, and a well maintained testicular position in the scrotum. The high scrotal incision allows such easy direct access to the processus vaginalis and external inguinal ring.(2, 3, 6).

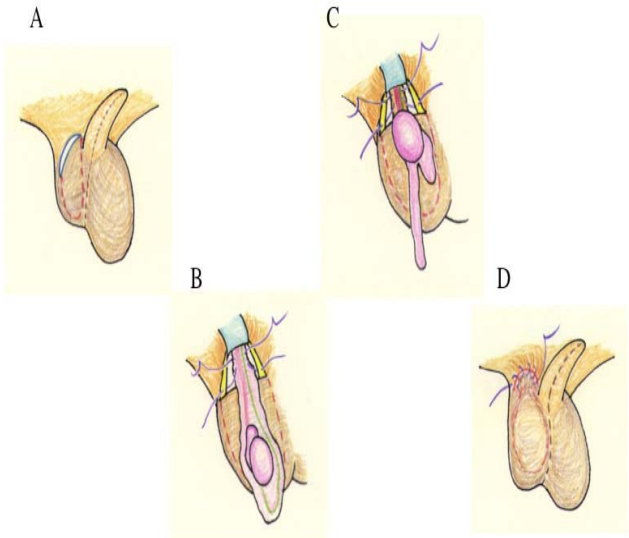

Fig. 3. Bianchi's method

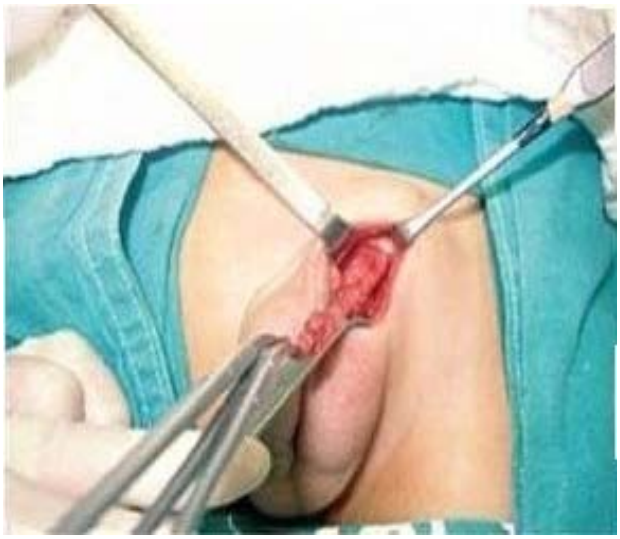

Fig. 4. Transscrotal access

In recent years the method is preferred because of the rapid rehospitalisation low trauma causes care**,** shorter operative time and excellent cosmetic results. When processing data from our study we found:
The mean operative time was shorter for. Bianchis' method-26-30 min,than Schoemakers' method – 52-68 min..All testicles treated with Bianchis' method except 1 (93.8%) were located in a good position within the scrotum and had a good consistency; 1 testis retracted postoperatively.There was no inguinal hernia, suporation or testicular atrophy as a postoperative complications.

There are no comparative results for testicular atrophy or testicular cancer because the method is introduced recently in the number of surgical patients is not sufficient to make a comparative analysis. Results published by various authors give consensus for excellent results which gives the method of Bianchi than Petrivalsky-Schoemaker for palpable undescended testes.

In a study of M. Gordon**,** R. M. Cervellione, Ant. Morabito, Adr. Bianchi-the authors performed a retrospective review of the transcrotal primary orchidopexy carried out to treat palpable undescended testis at Royal Manchester Children's Hospital between 1993 and 2005.122 procedures were included. The transcrotal approach was successfully completed in 119 (97.5%).Additional groin incision was needed in three (2.5%) to further mobilize the spermatic cord.No immediate complications were recorded and 8.4% required a reoperative procedure. On review of the literature, a total of 16 articles were discovered spanning 1695 transcrotal procedures, including the previously published authors' experience. On combining the data, the transcrotal approach required an additional groin incision in 4.4% of cases, 1.6% experienced immediate and/or early complications, and the overall recurrence rate was 2.0%.**(**4)

In a study of Samuel, David G.; Izzidien,-a total of 206 orchidopexies were performed in 85 patients during a 5-year period. Testicular position was assessed at follow-up clinics at 6 weeks, 6 months and 2 years. Patients were also asked if they were pain free at each subsequent visit. A total of 206 Bianchi orchidopexies were performed successfully in 156 patients; one patient required an additional inguinal incision. The only post-operative complications were infections in two patients. Testes were palpable and remained in the scrotal sac after 6 weeks, 6 months and 2 years in 122 patients.Scarring was minimal and all patients and their parents were happy with the cosmetic appearance of the testes at follow-up.The results led them to conclude that the high scrotal single incision Bianchi technique should be recommended to replace the traditional inguinal approach, which requires an additional incision in the management of undescended testis within the inguinal canal.(3)

In a study of Takahashi M, Kurokawa Y, Nakanishi R, Koizumi T, Yamaguchi K, Taue R, Kishimoto T, Kanayama HO. Department

of Urology, The University of Tokushima Graduate School, Tokushima, Japan.Presented results of a low transscrotal orchidopexy in patients with palpable undescended testes located distal to the external inguinal ring.Between July 1998 and June 2005, transscrotal orchidopexy with a single low scrotal incision was performed in 32 patients for 49 undescended testes. The results were: all testes treated with the low transscrotal approach were successfully fixed in the middle or lower portion of the scrotum. The mean operative time was significantly shorter for the low transscrotal orchidopexy (45.2 min) than for the inguinal orchidopexy (66.6 min) for 107 undescended testes at similar locations. The median follow-up duration was 39.1 months; all testes except 1 (97.7%) were located in a good position within the scrotum and had a good consistency; 1 testis ascended postoperatively and required inguinal orchidopexy. No inguinal hernias or hydroceles occurred after the surgery.(5)

CONCLUSION

The method of Bianchi seems to be an excellent alternative to standard inguinal orchidopexy for undescended palpable testes located distal to the external inguinal ring.

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