Original Article

Access this article online
Website: www.afrjpaedsurg.org
DOI: 10.4103/0189-6725.129203
Quick Response Code:

Laparoscopic treatment of the peritoneo-vaginal duct persistences in children at Sylvanus Olympio Teaching Hospital of Lomé (Togo)

Akakpo-Numado Gamedzi Komlatsè, Boume Missoki Azanledji, Mihluedo-Agbolan Komlan Anani, Adabra Komlan[1], Tekou Hubert

ABSTRACT

Background: The treatment of the persistent peritoneo-vaginal duct (PPVD) or persistent processus vaginalis (PPV) in children by inguinal access carries a real testicular risk that can be avoided using the laparoscopic treatment, mostly in the case of recurrence. We hereby present the results of our first series treated by laparoscopy at Sylvanus Olympio Teaching Hospital. **Patients and Methods:** This is a descriptive and prospective study on a 6 months period. It concerned 21 boys with mean age of 4 years and 3 months, weighing 15.70 Kg. They clinically presented 12 unilateral inguinal hernias and 9 hydroceles among which one recurrence. We used the Montupet and Esposito technique. The results were considered good in absence of recurrence and bad if recurrence occurred. **Results:** With 4 over the 21 patients (19.04%), the diagnosis of a controlateral PPV was done per operatory. In those cases, the bilateral closure was systematic in the same operative time. The mean duration of the unilateral treatment was 57.6 minutes (extremes: 45 and 70 min). The mean pneumo-peritoneum pressure was 7.62 mm Hg (extremes: 5 and 8 mm Hg). Seventeen boys (80.95%) got out on the same day. There was neither infection nor parietal hematoma. With a mean follow-up of 9.3 months, there was no recurrence. **Conclusion:** The laparoscopic treatment of the PVDP in children is an efficient procedure. It permits to diagnose and treat at the same time, a controlateral PVDP that had not been found during the clinical examination; it also helps to avoid the traumatisms of the spermatic cord.

Key words: Children, inguinal hernia, laparoscopic treatment, persistent processus vaginalis

Departments of Paediatric Surgery, and [1]General Surgery, Sylvanus Olympio Teaching Hospital, BP 57 Lomé, Togo

Address for correspondence:
Prof. Akakpo-Numado Gamedzi Komlatsè, S/C, M Gameti K. Evenyo 08 BP 80025 Lomé 8 - TOGO.
E-mail: akanugregoire@yahoo.fr

INTRODUCTION

The persistent processus vaginalis (PPV) are a common occurrence occurring in 2-5% of full term babies and in 30% of the premature babies.[1,2] When the spontaneous closure of the PPV fails to occur, only the surgical treatment will suffice, usually through the inguinal approach.[1-4] Although this classical method is not risky in the girl, it does carry the risk of damaging the deferential duct and the spermatic vessels in boy. Thus, attention to operative details is required intra-operatively.[2,4] There is also the risk of recurrence.[5,6] This is especially so since the contra-lateral exploration is not routinely performed, so that some previously operated children on one side are re-operated for PPV at the opposite side that was not clinically diagnosed previously.[7] The use of laparoscopic treatment to explore systematically the controlateral side helps to reduce the incidence of missed diagnosis and injury to testicular vessels at operation.[8-10] More than two decades, many European authors[9-11] use the laparoscopic access to treat PPV with good results. We introduced this laparoscopic treatment of PPV in Sylvanus Olympio Teaching Hospital of Lomé in 2013 the result of which formed the basis of this report.

PATIENTS AND METHODS

This was a prospective and descriptive study over a period of 6 months, from January to June 2013, in the Paediatric Surgery Department of Sylvanus Olympio Teaching Hospital of Lomé (Togo). All the boys aged from 2.5 to 15 years old, being treated for PPV with laparoscopy during the study period were included. The Montupet and Esposito[9] technique was used. The operation was performed under general anaesthesia with tracheal intubation and bladder discharge. The patient was in the Trendelenburg position. The two inguinal regions were examined;

the PPV could then be noticed [Figure 1] and its absence at the opposite side also [Figure 2]. We stopped the incision just before the spermatic cord, so as not to damage it. The closure of the PPV orifice was done with a bursa of 4/0 non absorbable braided suture throughout the proximal side of the incised peritoneum [Figures 3 and 4]. We followed up all the boys at 1 week, 1 month, 3 months and 6 months after operation. Indications, technical details and therapeutic results were the studied parameters. The results were considered good in absence of recurrence and bad if recurrence occurred.

RESULTS

There were 21 boys, with mean age of 4 years and 3 months (range: 2 years and 10 months and 7 years), weighing 15.70 Kg (range: 13.40 and 24.80 Kg). Girls, boys of <2.5 years old and boys presenting with strangulated inguinoscrotal hernia (n = 11) who were operated during the study period were excluded. The PVDP was on the right 16 times and on the left 5 times with the 21 boys. The PVDP was clinically unilateral in all the cases. There were 12 hernia (8 inguinal and 4 inguino-scrotal) and 9 hydroceles among which one recurrence.

Four (19.04%) of the 21 patients (19.04%) had the controlateral PPV repaired at operation. The mean duration of the procedure was 57.6 min (range: 45 and 70 min) for the unilateral types and 72 min (range: 60 and 90 min) for the bilateral ones. Seventeen patients (80.95%) were discharged home on the same day. Four others stayed overnight and were discharged home the next day due to late start of the operation in three, and post operative vomiting in one. With a mean follow-up of 9.3 months (range: 6 and 11 months), the outcome was good in every patient; there was no recurrence or other postoperative complication.

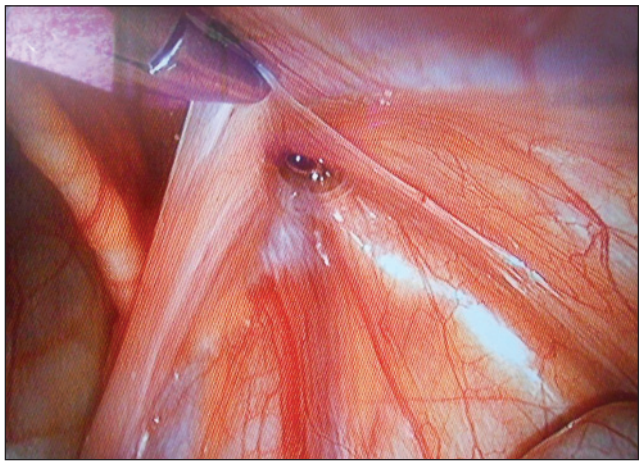


Figure 1: Internal orifice of a right persistent peritoneo-vaginal duct. Notice a drop of peritoneal liquid at the orifice

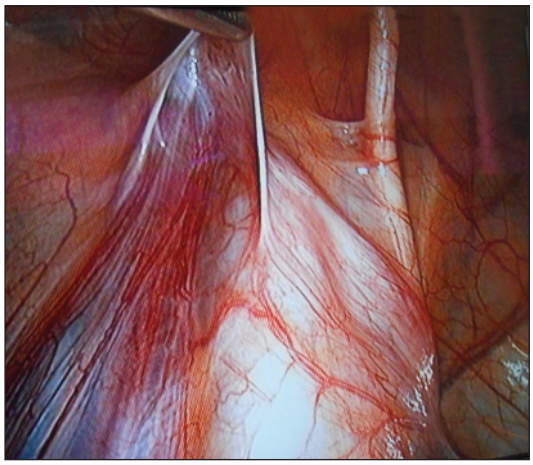


Figure 2: Verification of the opposite side; left peritoneo-vaginal duct non-persistent. The internal orifice was closed

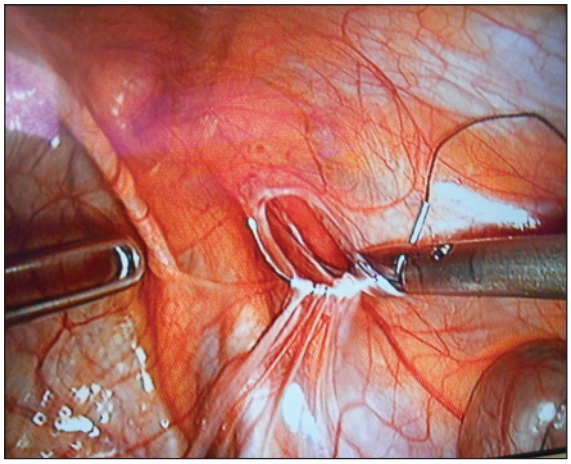


Figure 3: After incision of the edge of the internal orifice, we start the closure of the orifice by a 4/0 non-absorbable braided suture

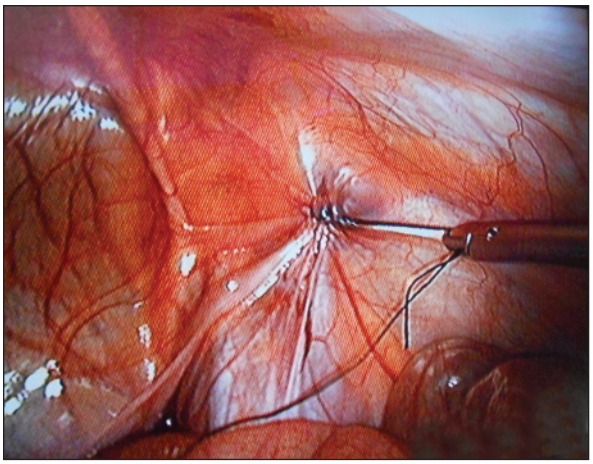


Figure 4: Closure ended and suture must be cut and removed

DISCUSSION

The surgical treatment of the PPV is one of the most frequent procedures in paediatric surgery. The classical treatment of PPV by direct inguinal access is efficient with fewer complications,[12,13] especially injury to the spermatic vessels or deferential duct, recurrences and iatrogenic cryptorchidies.[12,13] In fact, some children may require a second time for PPV on the controlateral side to the previous.[13,14] This has also been noticed by Harouna *et al*.[13] Due to the high rate in the possible development of controlateral hernia, some Americans authors[15,16] adopted bilateral exploration in the two sexes. This attitude is not always safe. There is 1% of testicular atrophy, 1.6% of deferential duct section and 2.7% of the controlateral testicle atrophy.[12,17-19] Four (19.04%) of the recurrence rate varies from 1% to 3% and the highest rate of 20% was noticed in premature babies with open herniotomy.[16,20,21] The advantages of the treatment of the PPV by laparoscopy are evident.[10,22] In addition to the extended and clear view of the hernia orifice (direct or indirect hernia), it's also possible to avoid injuring the elements of spermatic cord and having recurrences. In the series of Montupet and Esposito,[10] the controlateral inguinal orifice exploration was positive in 15.92% of cases. In our series, 4 out of 21 boys (19.92%) had no clinically controlateral PPV; which were repaired at the same sitting, thereby obviating extra costs.

The mean duration of the operation on the unilateral PPV in our series was 57.6 min; this appeared too long, compared with the duration of the same intervention by open herniotomy and this can be discouraging. However, this duration would shorten with improved learning curve.

CONCLUSION

The laparoscopic treatment of the PPV has obvious advantages and should be encouraged in children in our setting.

REFERENCES

1. Potts WJ, Riker WL, Lewis JE. The treatment of inguinal hernia in infants and children. Ann Surg 1950;132:566-76.
2. Zhang JZ, Li XZ. Inguinal hernia in infants and children in China. Pediatr Surg Int 1993;8:458-61.
3. Lau ST, Lee YH, Caty MG. Current management of hernias and hydroceles. Semin Pediatr Surg 2007;16:50-7.
4. Rothenberg RE, Barnett T. Bilateral herniotomy in infants and children. Surgery 1955;37:947-50.
5. Janik JS, Shandling B. The vulnerability of the vas deferens (II): The case against routine bilateral inguinal exploration. J Pediatr Surg 1982;17:585-8.
6. Wantz GE. Testicular atrophy as a risk inguinal hernioplasty. Surg Gynecol Obstet 1982;154:570-1.
7. Zona JZ. The incidence of positive contralateral inguinal exploration among preschool children — A retrospective and prospective study. J Pediatr Surg 1996;31:656-60.
8. Misra D, Hewitt G, Potts SR, Brown S, Boston VE. Transperitoneal closure of the internal ring in incarcerated infantile inguinal hernias. J Pediatr Surg 1995;30:95-6.
9. Montupet P, Esposito C. Laparoscopic treatment of congenital inguinal hernia in children. J Pediatr Surg 1999;34:420-3.
10. Montupet P, Esposito E. Fifteen years' experience in laparoscopic inguinal hernia repair in pediatric patients. Results and considerations on a debate procedure. e-mémoires de l'Acad Natl Chir 2013;12:064-7.
11. Perlstein J, Du Bois JJ. The role of laparoscopy in the management of suspected recurrent pediatric hernias. J Pediatr Surg 2000;35:1205-8.
12. Schmitt M, Peiffert B, de Miscault G, Barthelme H, Poussot D, Andre M. Complications of inguinal hernia in children. Chir Pediatr 1987;28:193-6.
13. Harouna H, Gamatie Y, Abarchi H, Bazira L. Inguinal hernia in infancy and childhood : Review abaut 98 cases operated in Niamey's National Hospital (Niger-Africa). Méd Afr Noire 2001;48:199-203.
14. Kiesewetter WB, Oh KS. Unilateral inguinal hernias in children: What about the opposite side? Arch Surg 1980;115:1443-5.
15. Gilbert M, Clatworthy HW Jr. Bilateral operations for inguinal hernia and hydrocele in infancy and childhood. Am J Surg 1959;97:255-9.
16. Tepas JJ 3rd, Stafford PW. Timing of automatic contralateral groin exploration in male infants with unilateral hernias. Am Surg 1986;52:70-1.
17. Rathauser F. Historical overview of the bilateral approach to pediatric inguinal hernias. Am J Surg 1985;150:527-32.
18. Surana R, Puri P. Is contralateral exploration necessary in infants with unilateral inguinal hernia? J Pediatr Surg 1993;28:1026-7.
19. Muraji T, Noda T, Higashimoto Y. Contralateral incidence after repair of unilateral inguinal hernia in infants and children. Pediatr Surg Int 1993;8:455-7.
20. Grosfeld JL, Minnick K, Shedd F, West KW, Rescorla FJ, Vane DW. Inguinal hernia in children: Factors affecting recurrence in 62 cases. J Pediatr Surg 1991;26:283-7.
21. Melone JH, Schwartz MZ, Tyson KR, Marr CC, Greenholz SK, Taub JE, *et al*. Outpatient inguinal herniorrhaphy in premature infants: Is it safe? J Pediatr Surg 1992;27:203-7.
22. Becmeur F, Philippe P, Lemandat-Schultz A, Moog R, Grandadam S, Lieber A, *et al*. A continuous series of 96 laparoscopic inguinal hernia repairs in children by a new technique. Surg Endosc 2004;18:1738-41.

Cite this article as: Komlatsè AG, Azanledji BM, Anani MK, Komlan A, Hubert T. Laparoscopic treatment of the peritoneo-vaginal duct persistences in children at Sylvanus Olympio Teaching Hospital of Lomı (Togo). Afr J Paediatr Surg 2014;11:12-4.

Source of Support: Personal pictures. **Conflict of Interest:** None declared.