

## Pathology of the Peritoneal-Vaginal Canal in Children in Rural Areas

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### ABSTRACT

The purpose of this study was to identify the closure anomalies of the peritoneal-vaginal canal in order to describe the epidemiological, anatomo-clinical and therapeutic aspects in our practice.

**Patients and methods:** As part of the community health program, we conducted a descriptive cross-sectional study in the Cuvette Ouest department, Oyo city Congo. It took place from May 25th to July 25th, 2017 (2 months). Included in the study were male children, admitted for inguinal, inguino-scrotal or scrotal swelling and for whom the surgical procedure made it possible to note a form of persistence of the peritoneal-vaginal canal. For each cases, epidemiological, anatomo-clinical and therapeutic aspects were analyzed.

**Results:** A total of 277 patients were treated over a period of 2 months. The average age was 6.5 years (1 month-17 years). The reason for consultation was inguinal and inguino-scrotal swelling, painless and intermittent in 57%. Pathology of the peritoneo-vaginal canal was located on the right side in 142 cases. The anatomo-clinical types were dominated by hernia in 57%. Pathology of the peritoneo-vaginal canal was associated with umbilical hernia in 44% and prosthectomy was done in 16.6%. The treatment was surgical in all our patients. The operative course was marked by two cases of scrotal hematoma and five cases of parietal suppuration.

**Conclusion:** The pathologies of the peritoneal-vaginal canal are very frequent in children in pediatric surgery departments and are dominated by inguinal and inguino-scrotal hernias. Their treatment is surgical.

**Keywords:** Peritoneal-vaginal canal; Hernia; Hydrocele; Cyst; Children

### INTRODUCTION

The peritoneal-vaginal canal is an open conduit between the scrotum and the peritoneal cavity. It is established at the third month of intrauterine life and then progressively breaks up between the eighth and ninth months to form the ligament of Cloquet [1]. The lack of closure of this channel is called the persistence of the peritoneo-vaginal canal which is a frequent reason for consultation in pediatric surgery. The anatomo-clinical entities are: hernia, communicating hydrocele, non-communicating hydrocele and spermatic cord cyst, also called funicular hydrocele [2].

In the Congo, the persistence of the peritoneo-vaginal canal is a frequent malformation whose care in peripheral structures is

provided by general practitioners. The purpose of this study was to identify all abnormalities of the peritoneal-vaginal canal in order to describe the epidemiological, anatomo-clinical and therapeutic aspects in our practice.

### PATIENTS AND METHODS

It is a descriptive cross-sectional study carried out in the department of the western basin, Oyo commune located in the north of the Congo. It took place from May 25 to July 25, 2017 or 2 months for a mission within the community health program (free care). The pediatric surgery department has 12 beds for children aged 0 to 17 years old. Our medical team is composed of 2 specialists (1 pediatric surgeon and 1 general surgeon), 1 state-certified nurse, a physiotherapist and a student

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who is in charge of orientation. Included in our study were all male children admitted for inguinal swelling, inguino-scrotal or scrotal swelling and for whom the surgical procedure noted a form the persistence of the peritoneo-vaginal canal. Patients who had been operated on for testicular migration abnormalities (oscillating testis and cryptorchidism) for whom a persistence of the peritoneo-vaginal canal treatment was performed and those with strangulated hernias were not included.

Their treatment consisted, after an inguinal approach, under general anesthesia, in a closure of the peritoneal-vaginal canal in case of hernia or communicating hydrocele or non-communicating hydrocele. It was associated with a cystectomy in case of spermatic cord cyst.

The study population consisted of children from all departments of Congo Brazzaville, operated for a persistence of the peritoneo-vaginal canal. The parameters studied were: frequency, age, reason for consultation, laterality, locality, clinical signs, anatomo-clinical types, therapeutic aspect and early postoperative complications. The statistical tests were carried out with the software Epi info 6.

## RESULTS

### Epidemiology

We had 716 referrals during the study period including 376 cases of persistence of the peritoneo-vaginal canal (52.5% of patients).

**Table 1:** Sociodemographic and clinical characteristics of patients.

Variables	Effective	Percentage (%)
Age bracket		
0-5 years	115	41,5
6-10 years	97	35
11-17 years	65	23,5
Localities		
Oyo	115	42
Brazzaville	59	21
Ollombo	35	13
Owando	20	7
Gamboma	11	4
Autres	37	13
Clinics		
Inguinal hernia or inguino scrotale	157	57
Communicating hydrocele	71	26

Of the 376 subjects, 277 children were operated on. During the same period, we had to perform 455 cases of surgical interventions including 330 cases of persistence of the peritoneo-vaginal canal. Persistence of the peritoneo-vaginal canal accounted for 72.5% of all surgical procedures.

The average age was 6.5 years old (1 month to 17 years old) (Table1). The reason for consultation was inguinal and/or inguino-scrotal swelling, painless and intermittent n=157 (57%), a large painless purse n=103 (37%) and a painless mass on the inguinal region n=17 (6%). Pathology of the peritoneo-vaginal canal was located on the right side in 142 cases, left on 95 patients and was bilateral on 40 patients. One hundred and fifteen children came from Oyo city (Table 1). The anatomo-clinical types were dominated by hernia in 157 cases (57%) followed by communicating hydrocele in 71 cases (26%) (Table 1). Two children, with a history of left inguinal hernia repair, had subsequently developed a hernia on the right side (metachronous hernia). Persistence of the peritoneo-vaginal canal was associated with umbilical hernia in 122 cases (44%) and prosthectomy was performed in 46 patients (16.6%).

Non communicating hydrocele	32	11
Spermatocyst	17	6

The treatment was surgical (fixed surgery) in all our patients and the average duration of hospitalization was 6 hours extreme (4 hours to 24 hours). The postoperative course was marked by 7 cases (2.5%) of complications; these are two cases (0.7%) of scrotal hematoma (one case after communicating hydrocele treatment and the second after hernia repair) and five cases (1.8%) of parietal suppurations (four cases of hernia and a case of hydrocele). The scrotal hematoma was treated with anti-inflammatory and analgesic drugs. Parietal suppurations were treated with antibiotics and local care. Postoperative mortality was nil.

## DISCUSSION

The limitations of our study were related to its retrospective nature and insufficient data filling. Persistence of the peritoneo-vaginal canal is common in pediatric urological practice. The frequency of persistence the peritoneo-vaginal canal in children is variously appreciated. It is 5.5% according to Amadou, et al. [3], 20% according to Sewa, et al. [4] and 52.5% in our study. This very high frequency in our study could be explained by access to free health services provided by the community health programs. The persistence of the peritoneo-vaginal canal is noted in the middle aged children 6.5 years old unlike in the study of Amadou, et al. (3 years) [3]. This high age in our series would be related to the fact that our patients consult most often late for lack of financial means, ignorance, because these pathologies are congenital and usually occur before the second year of life. They had the opportunity that the management of these pathologies is free of charge in this locality as part of the community health program. Our patients came from all over Congo with a predominance in Cuvette Ouest department (Oyo) located to the north. This predominance could be explained by the fact that the surgical activity took place this locality.

The inguino-scrotal hernia was the most common pathology of the peritoneo-vaginal canal, followed by communicating hydrocele. Our data were similar to those of Ngom et al [5]. In contrast to Sarr, et al. [6] had reported a predominance of the communicating hydrocele in 52%. The predominance of the right side has been reported by several studies [2,7,8] as in our series. The diagnosis of pathology of the peritoneo-vaginal canal is clinical. Indeed, a careful clinical examination taking into account the clinical characteristics of different anatomo-clinical types makes it possible to differentiate them.

In our series, hernia was the most common anatomo-clinical type. In our study, we found associated pathologies, mainly represented by umbilical hernias as in the majority of studies [9,10]. When confronted with pathology of the peritoneo-vaginal canal, it is therefore necessary to search for any kind of associated pathologies and treat them concomitantly. The treatment of pathology of the peritoneo-vaginal canal is based

on the simple closure of the hernia sac. In the case of hernias, some authors practice the technique of Forgues [9] which is to bring the joint tendon to the inguinal ligament in order to strengthen of the inguinal floor. We did not realize this technique in our series. We did not systematically explore the opposite side when treating the pathology of the peritoneo-vaginal canal. This exploration makes it possible to diagnose and treat an existing (but not externalized) hernia that could be the source of a metachronous hernia. The incidence of metachronic hernias ranged from 5 to 10% [11,12]. It represents 1 out of 163 cases according to Sarr, et al. [6] and 2 out of 277 patients in our series. Communicating hydroceles may spontaneously resolve in children during the first year of life [13]. In our case, we proceeded to a surgical treatment because all patients had been seen more than 2 years ago. For non-communicating hydroceles, treatment must be initiated as soon as possible because of the deleterious effects of compression of the testicle by the fluid mass [14]. Patients with an associated surgical condition benefit from a concomitant treatment after the parents' consent, as it is the case with umbilical hernia treatment in 44% of cases and prosthectomy in 16.6% of cases.

The evolution of this pathology of the peritoneo-vaginal canal is most often favorable. The immediate complications noted in our series are represented mainly by hematomas and suppurations with 2.5% of cases. Amadou and Ngom recorded a rate of 7.9% and 1.6% respectively.

## CONCLUSION

The pathologies of the peritonéovaginal canal are very frequent in our department. They are most of time benign and hernia is the most represented anatomoclinic type. Their treatment is surgical and their morbidity is low.

## CONFLICTS OF INTEREST

The authors declare no conflicts of interest regarding of the publication of this paper.

## REFERENCES

1. Mellal A. Practical application of human anatomy Volume 1-Viscera of the trunk. Paris: Editions Publibook 2010;255.
2. Galinier P, Kern D, Bouali O. Urgent pathology of the peritoneal-vaginal process in children. In: EMC-Medicine 2005;215-223.
3. Tinder I, Coulibaly Y, Coulibaly MT, Coulibaly MO, Traore B, Keita M, et al. Pathologies of the peritoneo vaginal canal in pediatric surgery of CHU Gabriel Touré. Mali Med 2018;33:17-20.
4. Sewa EV, Tengue KK, Kpatcha MTK, Botcho G. Clinical and therapeutic aspects of vaginal peritoneal canal pathologies at the Dapaong Regional Hospital Center (Togo). J Conf West Afr Uro Andro 2016;6:1-15.

5. Ngom G, Mohamed AS, Saleck AE, Mbaye PA, Ndour O, AL Faye, et al. The uncomplicated pathology of the peritoneal-vaginal canal in Dakar. *J Ped Puericult* 2015;28:114-117.
6. Sarr A, Sow Y, Fall B, ZeOndo C, Thiam A, Ngandou M, et al. Pathology of the peritoneal-vaginal canal in urological practice 2014;24:665-669.
7. Fall I, Ngom G, Betel E. Management of groin hernias in children: about 625 cases. *Med Afr Black* 2004;51:175-177.
8. Rantomalala HY, Andriamanarivo ML, Rasolonjatovo TY. Inguinal hernias strangled in the child. *Arch Pediatr* 2005;12:361-365.
9. Kouamé BD, Dick RK, Ouattara O. Descriptive study of inguinal hernias of the boy. About 584 cases *J Ped Puericult* 2006;19:47-51.
10. Fall PA, Gueye M, Ndoye A. Persistence of the peritoneal-vaginal canal in boys. Clinical and therapeutic aspects. About 160 cases *Dakar Med* 2000;45:206-208.
11. Manoharan S, Samarakkody U, Kulkarni M, Blakelock R, Brown S. Evidence-based change of practice in the management of unilateral inguinal hernia. *J Pediatr Surg* 2005;40:1163-1166.
12. Delarue A, Galli G, Guys JM. Transinguinal controlateral laparoscopy in unilateral inguinal hernia. *Arch Pediatr* 1999;6:22-26.
13. Koski ME, Makari JH, Adams MC, Thomas JC, Clark PE, Pope JC, et al. Infant communicating hydroceles: do they need immediate repair or might some clinically resolve? *J Pediatr Surg* 2010;45:590-593.
14. Jozsa T, Telek A, Kutasy B, Benyo M, Csanadi G, Kovacs I, et al. Effect of hydrocele on appendix testis in children. *Asian Journal of Andrology* 2009;11:741-745.