

Urachus Fistula about Two Cases in Yalgado Ouedraogo Teaching Hospital, Ouagadougou (Burkina-Faso)

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Abstract

The purpose of these serial cases was to report the diagnostic and therapeutic features of urachal fistulas at Yalgado Ouedraogo teaching Hospital. We have reported retrospectively two cases of urachus fistula at the Surgery Department of Yalgado Ouedraogo Teaching Hospital in Ouagadougou. The parameters studied were sex, age, reason for consultation, clinical and paraclinical signs, treatment, length of hospital stay, delay of urinary catheterisation and evolution. Two serial cases of urachal fistula were reported, one 14 years old female patient and a 32 years old male patient. Clinical signs were marked by urine flow through the umbilicus. The diagnosis was made by fistulography in one case and during surgery for the second case. The treatment was surgical and consisted of laparotomy followed by removal of the urachal fistula from bladder. The urinary catheter was removed after 10 days. The postoperative course for the two patients was uneventful.

Keywords

Urachus, Umbilicus, Fistula, Bladder, Surgery

1. Introduction

Urachal fistula is characterized by the non obliteration of primitive urachus on its entire path and therefore an interconnection between umbilicus and bladder lasting after birth [1]. Although rare the urachal fistula is the most common urachal pathologies [1] [2] [3] [4]. The diagnosis is most often made during the

neonatal period [2]. We report two cases of late diagnosed urachal fistula, received in the surgery department of Yalgado Ouedraogo Teaching Hospital in Ouagadougou, Burkina Faso in the purpose of describing diagnostic and therapeutic parameters.

2. Case Report 1

It is about a 14 years old girl received in September 2017. She had involuntary urinary leakage through the umbilicus that had started one week after she was born and then stopped spontaneously. At the age of 7 years, she reported to her parents either a stench or a dampness of her umbilicus that apparently did not worry them. The persistence of the symptomatology led her to be referred to the surgery department for better care. The clinical examination highlighted a moist umbilicus with urine stink and a hole barely catheterizable. Blood test with complete blood count (CBC) showed 13 g/dl of hemoglobin and 7500/mm³ of WBC. Fistulogram performed with the retrograde urography confirm the diagnosis of urachal fistula (**Figure 1**) and the surgical treatment was carried out. In intra-operative, a fistula path between bladder and urachus measuring about one centimeter in diameter was highlighted. A ligature-section of the fistula and the removal of a part of the bladder roof was performed. The hospitalization delay was four days and the removal of urinary catheter was performed ten days after. The postoperative course was uneventful.

3. Case Report 2

It is about a 32 years old young adult, received for involuntary urinary leakage through the umbilicus and a peri-umbilical, oozing and pruritic ulceration evolving since childhood. This lesion had been neglected until June 2016 when the pruritus and the smell became unbearable. He consulted several times in peripheral health centers where two debridements were performed. The post debridement evolution was marked by the emphasis of urinary leakage.

The physical examination showed an ulcero-necrotic peri-umbilical lesion from where the pelvic pressure lets out a citrin liquid. The abdominal ultrasound

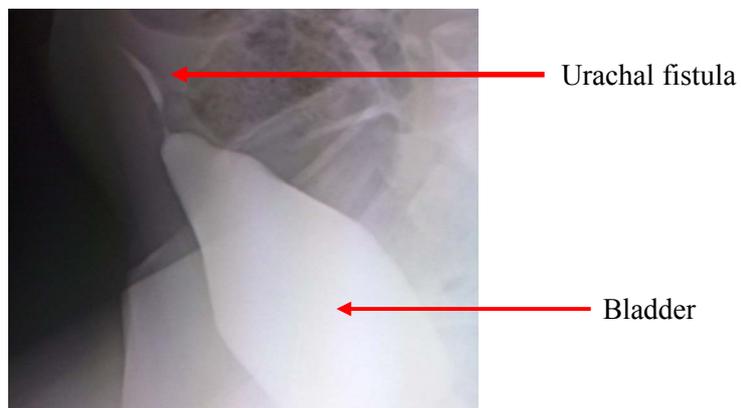


Figure 1. Urachal fistula seen at retrograde cystography.

pointed communication of bladder roof and the umbilicus. The abdominopelvic scan and the fistulogram could not be realized for lack of financial resources. After normal blood test, a laparotomy was suggested. The exploration pointed out a tract measuring one (01) centimeter in diameter and 10 cm long linking the bladder to the umbilicus (**Figure 2**). A ligature-section of the fistula removing a part of the bladder roof was performed. The hospitalization delay was 4 days and the removal of urinary catheter was performed at ten days after the surgery. No postoperative complications were reported and the postoperative course was uneventful.

4. Discussion

Urachus is an embryonic remnant derived from the allantois that comes in the form of an obliterated fibrous cord linking the bladder dome to the umbilicus [5]. The urachal disorders result from a partial or total defect of obliteration of the urachus channel in the fifth month of pregnancy [4] [6]. Five types of abnormalities can be individualized according to their location [4] [7]:

- 1) The urachal fistula (48%), is a complete communication between bladder and umbilicus;
- 2) The urachal cyst (31%) is a cavity leaning on the urachal channel between the umbilicus and the bladder;
- 3) External sinus of urachus (18%) is an expansion of the upper end of the urachus;
- 4) Vesico-urachal diverticulum (3%) is an obliteration defect of the bladder part;
- 5) Alternated drainage sinus, unusual, is an obliteration defect, sometimes of the umbilicus part, sometimes of the bladder part.

According to the literature, urachal fistulas' frequency is inconstant. Urachal fistula is the most common of urachal abnormalities according to Renard O. [2]. Blichert-Toft and Nielsen [4] showed that it represents 47.6% of urachal

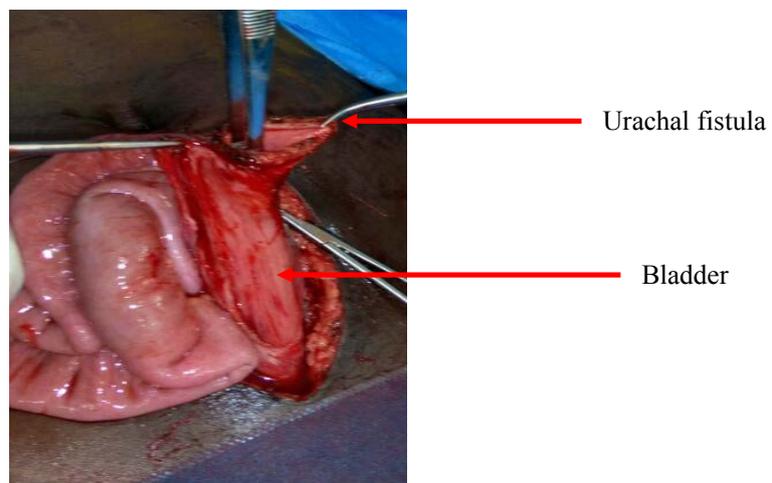


Figure 2. Urachal fistula seen during surgery.

malformations. In Senegal, Ndour O. [3] noted 8 cases out of 12 urachal malformations. In the other hand, Yiee [8] only reported 23% so 7/31 urachal pathologies. Mesrobian [9], Cilento [10] only came up with 15% (7/45) and 10% (2/21). We found 2 cases/2 in our serie. 60 % of the cases [2] are observed among children with a male dominance [6]. The male predominance has been reported in the literature with a changing sex ratio [9]. Ndour O and colleagues have reported 8 cases among which, half of their series was male patient [3]. Gender equality was also registered in our serial cases.

In France, Renard O. discovered that the diagnosis of urachal fistula is made during the neonatal period [2]. For Ndour O. [3] in Senegal, the mean age of fistula's diagnosis was 0.4 years old. From Mesrobian's side [9], the mean age was 0.5. That early diagnosis was made because of the spontaneous and immediate flow of urine through the navel during the neonatal period. Our late discovery (14 and 32 years old) could be explained by the poverty, the carelessness and the lack of knowledge on the pathology.

In our study, we noticed that the urine leaks through the umbilicus and its dampness were the main reasons of consultation. Mesrobian [9], Yiee [8] and Ndour O. [3] also noted a predominance of umbilical flow. A moist umbilicus and an inflammatory umbilical granuloma were also noted [3]. The antenatal diagnosis can be made by ultrasound or at birth in front of the urine leaks through the umbilicus [2] [4] [5] [6] [7]. Ultrasound can be enough to make the diagnosis but in our African context, it is often found during the surgery [5]. The majority of authors emphasize the importance of fistulography in front of every urine flow through the umbilicus and especially of ultrasound in the diagnosis of other urachal pathologies [2] [5] [8]. The computed tomography is the best exploration in term of diagnosis [8]. In our context, the urachal fistula has been confirmed by the fistulography performed thanks to retrograde urography for the female patient and extemporaneously for the second patient.

In our serie we did not get any associated malformations. On the other hand the Prune-Belly syndrom and posterior urethral valves were associated with urachal fistula [3] [8]. In fact these affections are marked by bladder evacuation hindrance wich could be the reason for urachal recanalization. On the other hand Mesrobian [9] found that these malformations more often associated with urachal diverticulum.

The treatment of urachal fistulas is surgical according to Blichert [4]. That surgery should be performed through a central sub-ombilical or extra-peritoneal transverse or laparoscopic approach. The excision of the whole remnant channel must be achieved, removing a vesical collar corresponding to its layout site [6]. Both our patients have benefitted open-air surgery. The approach were central sub-ombilical and transperitoneal. The surgical examination made it possible to confirm the diagnosis of urachal fistula. They underwent a monobloc excision removing the vesical collar. Nowadays, laparoscopy is more and more practiced [8] [9]. Its advantages are undeniable in the malformative affection care for

young and active patients. Its only complications are bruises and abscesses of wall. Laparoscopy can also be used for the diagnosis of difficult cases [6]. For our patients, the postoperative course was simple. Postoperative complications like evisceration on an urachal fistula and three cases of wall infection with good evolution have been noted by Ndour O. [3]. Mesrobian [9] did not experience postoperative complications in his series. Yiee [8], in his study found 8.6% of complications, all due to the surgery wound infection.

Our patient stayed at the hospital for 4 days. Okegawa and al. [6], in a comparative study of laparoscopy versus laparotomy found a duration of 5.3 days against 10.3 days. Ndour O. [3] in Senegal reports a hospitalization duration of 14 days probably due to the complications especially infections found at the time of entrance. The urinary catheter stayed for 10 days in our serie. Renard O. [2] suggests to keep the catheter for around 6 or 7 days.

In our serie the mortality was zero. Chances of mortality are even higher due to the complications and especially the malignant degenerescence [2]. Ndour O. [3] registered two cases of deaths. The other authors did not encounter particular mortality [8] [9].

5. Conclusion

Urachal fistulas are rare in our department. The umbilical flow is the clinical sign faced. Fistulography is a tool helping to establish the diagnosis. The cure must be surgical. The antenatal ultrasound might help to diagnose and to permit an early management of that pathology.

Consent

Consents of the patients were obtained before publication of this article.

Conflict of Interest

The authors declared that there is no conflict of interests regarding the publication of this paper.

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