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Abdominal Mass Revealing Posterior Urethral Valves in a Young Adult: A Case Report from Benin

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Abstract **Case Report**

Introduction: Posterior urethral valves (PUV) represent one of the main causes of congenital subvesical obstruction in boys. Although usually diagnosed in childhood, in exceptional cases they may remain unrecognised until adulthood, when severe complications reveal them. ***Case Report***: We report the case of a 41-year-old male patient with bulky abdominal distension for 10 years, associated with chronic dysuria and impaired renal function with a glomerular filtration rate (GFR) of< 15ml/min. Initial assessment of lower urinary tract symptoms revealed an IPSS score of 28/35 with a urinary symptoms-related quality of life score of (6/6), indicating severe symptoms. An injected abdominal-pelvic CT scan revealed major bilateral ureterohydronephrosis, predominantly on the left. Diagnostic cystoscopy revealed evidence of a valve in the posterior urethra, which was treated by endoscopic resection. The postoperative course was favourable, with normalisation of renal function and a spectacular improvement in the IPSS score to 5/35 (urinary symptoms-related quality of life score 1/6) at follow-up at 1 week, 1 month, 3 months, 6 months and 10 months. ***Conclusion***: This case illustrates the frequent delay in diagnosing posterior urethral valves (PUV) in underdeveloped countries and highlights the importance of including this condition in the differential diagnosis of abdominal masses and chronic dysuria in young adults. The use of low-cost tools, such as standardised scores like the IPSS, together with access to a cystoscope and an endoscopic resector, can not only help prevent serious complications like a renal failure but also objectify the effectiveness of treatment and improve patient follow-up. Despite the relative simplicity of endoscopic treatment, early diagnosis remains essential to preserve long-term renal function.

Keywords: Posterior Urethral Valves, Abdominal Mass, Renal Failure.

INTRODUCTION

Posterior urethral valves (PUV) are one of the most common obstructive congenital anomalies of the lower urinary tract in boys, with an estimated incidence of between 1/5000 and 1/8000 live male births [1]. First described by Young *et al*., in 1919 [2], these malformations result from abnormal development of the urethral folds during embryogenesis, forming obstructive membranous folds in the posterior urethra [3].

PUVs are usually diagnosed in the ante-natal or neonatal period, thanks to advances in antenatal imaging and the systematic use of obstetric ultrasound [4]. However, in some cases, particularly in underdeveloped regions, diagnosis may be delayed until adolescence or adulthood. In adults, PUV is a rare entity, with fewer than 100 cases reported in the world literature [5].

Late clinical manifestations of PUV mainly include chronic micturition disorders, recurrent urinary tract infections, progressive renal failure and, more rarely, abdominal masses resulting from massive urinary retention [6, 7]. Differential diagnosis can be difficult, particularly in settings where access to further investigations is limited [8].

We report here the exceptional case of a 41-year-old Beninese patient with voluminous abdominal distension evolving for a decade, revealing a posterior urethral valve, thus illustrating the diagnostic and therapeutic challenges posed by this pathology in a context of limited resources.

Case Report

A 41-year-old male patient, with no significant medical history, living in Zinvié (Benin), presented to the emergency department with progressive abdominal distension for about 10 years. The clinical picture was dominated by a progressively enlarging abdominal mass associated with persistent dysuria. The patient also reported gradually worsening generalised asthenia and progressive unquantified weight loss. Initial assessment of lower urinary tract symptoms revealed an International Prostate Symptom Score (IPSS) of 28/35, indicating severe symptomatology, with a urinary symptom-related quality of life score of 6/6.

Clinical examination revealed significant overall abdominal distension, with no discernible tenderness or mass on palpation (Figure 1). The biological evaluation revealed a significant deterioration in renal function, with creatinine levels initially measured at 83.69 mg/L for a GFR of< 15ml/min, improving to 55.14 mg/L after treatment. The blood ionogram showed hydroelectrolytic disturbances with hyponatremia (128.9 mEq/L) and hypokalaemia (2.79 mEq/L) on admission, partially corrected during hospitalisation.

A thoracic-abdominopelvic computed tomography (CT) scan revealed major bilateral ureterohydronephrosis predominantly on the left (stage II on the right and III on the left according to the Urinary Tract Dilation [UTD] classification), suggesting a probable primary megaureter. Imaging showed extremely thinned left renal parenchyma with minimal secretory function, while the right kidney retained optimal function despite delayed excretion. The adjacent abdominal structures were pushed to the right by the dilatation of the upper excretory tract. No tumour lesions were identified (Figure 2).

Diagnostic cystoscopy revealed a posterior urethral valve. Treatment by endoscopic resection of the valve was performed at the same time, followed by placement of Ch 24 urethrovesical catheter, allowing progressive and controlled emptying of approximately 6 litres of dark urine over 14 hours, with careful monitoring of the obstruction lifting syndrome, leading to significant abdominal decompression.

Post-operative management consisted of parenteral rehydration and close clinical and biological monitoring. The course was marked by an almost complete regression of abdominal distension (Figure 3) and an improvement in biological parameters. The patient was discharged 72 hours after the operation, in apparently good general condition, and was seen for follow-up at 1 week, 1 month, 3 months, 6 months and 10 months postoperatively. Clinical assessment at 10 months showed a flat abdomen with no palpable mass (Figure 4) and normalisation of renal function with a control creatinine level of 11g/l. The IPSS score was 5/35, with an associated quality of life score of 1/6.

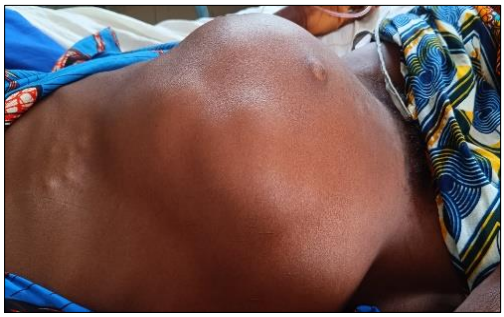

Figure 1: Aspect of the abdomen on admission

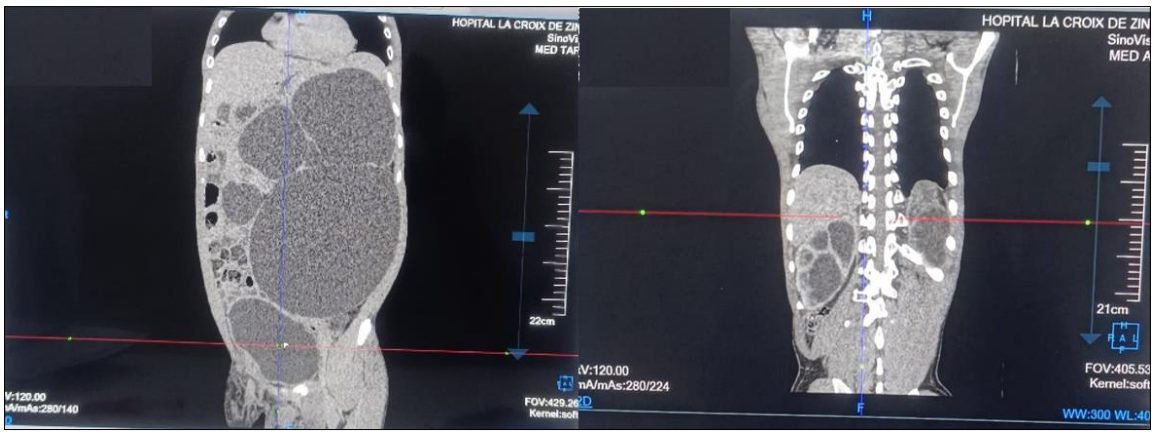

Figure 2: Images of abdominal masses on CT-SCAN

Figure 3: Almost complete regression of abdominal distension after urinary drainage

Figure 4: Aspect of the abdomen at 10 months after the operation

DISCUSSION

This case illustrates an exceptionally late manifestation of a posterior urethral valve, presenting in a 41-year-old male patient, as a large abdominal distension. This unusual presentation raises a number of questions about the natural history of untreated PUVs and highlights the diagnostic and therapeutic challenges in resource-limited settings.

PUV is mainly diagnosed during the neonatal period or early childhood, with 85% of cases identified before the age of 10 [7]. Their diagnosis in adulthood remains exceptional, with Gupta *et al*., having identified only 93 cases published in the world literature between 1950 and 2018 [5]. This rarity is explained in particular by the natural course of the disease, which generally leads to early end-stage renal failure in the absence of treatment.

Persistence into adulthood could be explained by several mechanisms: partial obstruction allowing a certain degree of bladder emptying, the development of compensatory mechanisms such as detrusor hypertrophy, or the existence of a natural urine diversion via a fistula [6]. In our case, the long clinical course over a decade suggests an incomplete obstruction that allowed progressive adaptation of the urinary tract.

The use of the International Prostate Symptom Score (IPSS) was particularly relevant in our case to assess the initial severity of urinary symptoms and evaluate therapeutic efficacy. The urinary symptom quality of life score of 28/35 reflected severe obstruction, consistent with the impressive clinical presentation. The spectacular reduction in 5/35 at 10 months post-operatively confirms the efficacy of the endoscopic treatment and its durability. This improvement, based on internationally validated scores, is a further argument in favour of the importance of diagnosis, even late diagnosis, and appropriate management of PUV in adults. The literature rarely reports the use of standardised scores in the assessment of adult PUV, although such tools could prove invaluable in harmonising follow-up and facilitating comparisons between different case series.

The clinical presentation of PUV in adults differs markedly from that seen in children. While obstructive micturition disorders (dysuria, weak stream, pollakiuria) generally predominate, atypical manifestations such as haematuria, retrograde ejaculation, infertility or, as in our case, an abdominal mass, may erroneously point to other diagnoses [8]. Nasir *et al*., report that only 10% of late-diagnosed UPVs present with massive abdominal distension [7].

The renal impact of late-onset PUV is of particular concern. Ansari *et al*., have shown that delayed diagnosis is directly correlated with worsening renal function, with 30% of patients diagnosed after the age of 10 years presenting with severe chronic renal failure at the time of diagnosis [6]. This finding is consistent with our observation, as the patient's elevated creatinine levels indicate a significant deterioration in renal function.

The therapeutic management of PUV diagnosed late remains similar to that recommended in children, relying mainly on endoscopic resection of the valve [7]. In our case, endoscopic resection followed by endoscopic lamination resulted in immediate and spectacular decompression of the urinary system, as evidenced by the post-operative regression of abdominal distension.

However, the long-term prognosis depends on a number of factors, including the degree of impairment of pre-existing renal function, the presence of associated bladder dysfunction and the quality of post-operative follow-up [6]. This last point poses a major challenge in the context of limited resources, as illustrated by our case.

This issue is part of a wider context of global inequalities in access to nephrological care. Odetola *et al*., points out that the prevalence of kidney disease is significantly higher in countries with limited resources, where paradoxically access to early diagnosis and appropriate treatment remains limited [9]. In Benin, as in many sub-Saharan African countries, the absence of systematic antenatal screening programmes and socio-economic constraints limiting access to care contribute to the delay in diagnosis of congenital urological malformations.

Our observation shares similarities with cases of delayed diagnosis of posterior urethral valves reported in the literature, emphasizing that this condition, though rare in adults, should be considered in the differential diagnosis of chronic voiding disorders and abdominal masses in young adults, particularly in resource-limited settings [8]. These cases highlight the importance of including PUV in the differential diagnosis of abdominal masses and chronic voiding disorders in young adults in resource-limited settings, even in the absence of a documented urological history.

Conclusion

This case illustrates the common delay in diagnosing posterior urethral valves (PUVs) in resource-limited settings and highlights the importance of including this condition in the differential diagnosis of abdominal masses and chronic dysuria in young adults. The use of low-cost tools, such as standardised scores like the IPSS, together with access to a cystoscope and an endoscopic resector, can not only help prevent serious complications like renal failure but also objective the effectiveness of treatment and improve patient follow-up. Despite the relative simplicity of endoscopic treatment, early diagnosis remains essential if renal function is to be preserved over the long term.

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