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Incidental Finding of Pyeloureteral Junction Syndrome during Extension Workup for Prostatic Adenocarcinoma

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Abstract

Introduction: Prostate cancer is one of the most common cancers in men. In cases of suspected locally advanced disease or lymph node or bone metastases, thoraco-abdomino-pelvic CT is still useful for detecting visceral metastases. In the course of this extension work-up, other abnormalities may be discovered by chance, which had previously remained silent, and which could be diagnosed and managed in childhood, hence the interest of presenting a case of incidental finding of pyeloureteral junction syndrome during extension workup for prostatic adenocarcinoma at Yaounde Central Hospital. **Observation:** A 72-year-old patient presented to the department with acute urinary retention. The clinical examination, with an empty bladder, and in particular the digital rectal exam (DRE), was in favor of malignant prostatic hypertrophy. A workup was ordered, including a total PSA returned to 61.3 ng/ml (PSA performed one week after the episode of acute urinary retention) with cyto-bacteriological examination of sterile urine. Renal function was slightly impaired, with creatinemia at 14 ng/ml. Renal and vesico-prostatic ultrasound revealed a 57 g prostate with regular, clean contours and a polycystic right kidney. A prostate biopsy was indicated, which revealed a histopathological aspect in favor of a prostatic adenocarcinoma ISUP 1. An extension work-up including a thoraco-abdomino-pelvic CT scan revealed no signs of local or distant secondary localization, but a pyeloureteral junction syndrome with

significant hydronephrosis, parenchymal destruction and compensatory hypertrophy of the contralateral kidney was found. **Conclusion:** The prostate cancer extension work-up revealed a pathology that can be diagnosed early. It is therefore important to reinforce prenatal and natal screening, which will enable malformative uropathies to be identified early and corrected in time to preserve patients' renal function. Furthermore, we must be careful in the ultrasound diagnosis of pyeloureteral junction syndrome.

Keywords

Prostate Cancer, Pyeloureteral Junction Syndrome, Prenatal Diagnosis, Morphological Diagnosis

1. Introduction

Prostate cancer is one of the most common cancers in men, and its incidence continues to rise in many developing countries [1]. In Cameroon, it accounts for 23.5% of cancer deaths [2] [3]. According to a study by Fouda *et al*., hospital prevalence of prostate cancer is 23.51%, while for pyeloureteral junction pyeloureteral junction syndrome is 0.9% [4]. Although diagnosed antenatally, pyeloureteral junction syndrome can be diagnosed at any age, with differing circumstances of discovery. However, it can also be an incidental finding during a complementary examination using ultrasound or CT scan [5], as in the context of prostate cancer extension assessment, where TAP scan is useful for detecting metastases [6]. In the course of this extension work-up, other abnormalities may be discovered which had previously remained silent. In the following, we present a case of incidental finding of pyeloureteral junction syndrome during extension workup for prostatic adenocarcinoma at the Yaounde Central Hospital.

2. Observation

The patient, aged 72, presented with acute urinary retention, for which a transurethral urinary catheter had been inserted. Clinical examination, in particular the digital examination carried out later with an empty bladder, revealed an enlarged, firm, multinodular prostate with irregular contours and a missing median sulcus, raising the suspicion of prostate cancer. A work-up was prescribed, including a total PSA returned to 61.3 ng/ml (PSA performed one week after the episode of acute urinary retention) with a cytobacteriological examination of sterile urine. Renal function was slightly impaired, with creatinemia at 14 ng/ml. Renal and vesicoprostatic ultrasound revealed a 57 g prostate with regular, clear contours and a polycystic right kidney. A prostate biopsy was indicated, and the histopathological findings were consistent with a prostatic adenocarcinoma, Gleason 6 = 3 + 3 (ISUP 1). An extension work-up including a thoraco-abdomino-pelvic CT scan was ordered and found no evidence of local or distant secondary localization. However, major dilatation of the right pyelocalic cavities with thinning of the

cortex to millimetre thickness and a thin ureter were discovered, suggesting a pyeloureteral junction syndrome with significant hydronephrosis and compensatory hypertrophy of the contralateral kidney (The scintigraph is not available in our context).

The patient had never experienced any symptoms associated with pyeloureteral junction syndrome. The patient refused all treatment for pyeloureteral junction syndrome and for prostate cancer, preferring surveillance despite multiple proposals made after the multidisciplinary consultation meeting. We referred the patient for nephrological consultation. At the last check-up, 06 months later, the result of the renal function was the same. We continued to monitor him for prostate cancer, but the follow-up was satisfactory.

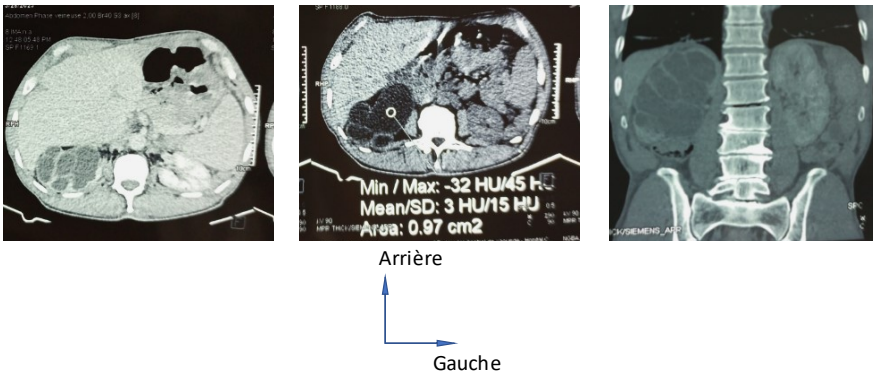

Figure 1. CT scans showing pyeloureteral junction syndrome with significant hydronephrosis contrasting with a thin ureter and destruction of renal parenchyma.

3. Discussion

Pyeloureteral junction syndrome, also known as essential hydronephrosis or primary hydronephrosis, is defined as a urodynamic disorder of evacuation of the upper excretory tract with pyelocecal distension, upstream of a functional or organic obstacle [7]. It is the most common obstructive uropathy in newborns, affecting around 0.2% of live births, with a predominance of males [8]. SJPU is most often congenital and the diagnosis is made very early, before the age of 5 according to the literature [9] [10], but some cases of SJPU in the elderly are found in the literature [11] [12]. So, the diagnosis can be made at any age, and the circumstances in which it is discovered vary in the literature, ranging from lumbar mass or pain to haematuria and urinary tract infections. Some authors have reported incidental findings of pyeloureteral junction syndrome. This is the case for Sayad L and Diarra A, who found frequencies of 15% and 12.9% respectively [7] [13]; on the other hand, Amadou *et al.* found a higher frequency of 25.7% [14]. This is no mean feat. Our study has highlighted the need to strengthen systematic antenatal screening for malformative pathologies of the kidney that may jeopardise its functional prognosis in the short, medium or long term. As the kidney is a noble organ, it is important to be able to diagnose malformative uropathy at an early stage so that appropriate treatment can be initiated to preserve the patient's renal function.

The importance and difficulty of imaging between polycystic kidney disease and hydronephrosis must be emphasised. This underlines the importance of the fact that ultrasound is operator-dependent and CT scan is more specific and sensitive than ultrasound. With this case report, we believe that ultrasound associated with uroscanner would allow the diagnosis of pyeloureteral junction syndrome, which Kpatcha also mentioned [11].

4. Conclusion

Pyeloureteral junction syndrome is a malformative disorder of the upper urinary tract that is increasingly diagnosed antenatally and managed during the first few years of life. However, frustrated forms are still discovered in adulthood because they are only mildly symptomatic, hence the need to step up antenatal screening, which will enable malformative uropathies to be identified early and corrected in time to preserve the patient's renal function. In adults, it would be useful to combine CT with ultrasound to avoid missing a pyeloureteral junction syndrome evolving at low noise.

Conflicts of Interest

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

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