

Case Report

Stenosis of the Pyeloureteral Junction (UPJO) in Adults: Case Report

Jimenez-Baez MV^{1*}, Aguilar Sosa AD², Que Pool DRM² and Tellez Rodriguez AL²

¹Coordinación de Planeación y Enlace Institucional, Instituto Mexicano del Seguro Social, Delegación Quintana Roo, México

²Division of Health Sciences, University of Quintana Roo, Mexico

Abstract

Aim: Ureteropelvic Junction Obstruction (UPJO) is the most frequent congenital anomaly of the upper urinary tract; it is defined as the impediment for the flow of urine from the renal pelvis to the proximal ureter that produces the posterior dilation of the collecting system and the potential damage to the kidney.

Clinical case: A 20-year-old woman began her clinical manifestations with bladder tenesmus, pollakiuria, mild dysuria and low-grade fever of 4 days of evolution, urine test reports a significant concentration of erythrocytes, the abdominal ultrasound reports on bilateral hydronephrosis and loss of functional parenchyma of the left kidney, being replaced by an important hydronephrotic sac. The contracted computed tomography (CCT) reveals pyelocaliceal dilation and from the renal pelvis to the ureteropelvic junction, where a contrasting passage is not visualized in both ureters. The surgery was performed by placing double J catheters, then reintervention with bilateral laser endopyelolithotomy, obtaining a progressive improvement.

Conclusion: Pyeloplasty is the most appropriate procedure for the management of patients with the EUP with a success rate of 90%, however, it has recovery time and complications compared with retrograde endourological dilatation. Based on the analysis carried out, it is concluded that endourological dilatation is a short surgical procedure, whose management with analgesics and hospital instance is lower and the percentage of responses is at least.

Keywords: Pyeloureteral junction stenosis; Ureteral; Obstruction; Hydronephrosis

Introduction

Ureteropelvic Junction Obstruction (UPJO) is a condition characterized by partial or complete obstruction of urine transport from the renal pelvis to the ureter and can present with intermittent flank pain, recurrent urinary tract infections, renal stones, or renal dysfunction. UPJO is the most frequent congenital urological anomaly of the upper urinary tract [1]. UPJO is defined as the impediment of the urinary flow that leaves the renal pelvis towards the proximal ureter, which consequently causes dilatation of the collecting system and potential damage to the kidney [2]. In Mexico, UPJO and obstruction of the pyeloureteral junction are registered as the most frequent causes of hydronephrosis. Very great numbers of nephrectomies still have to be performed owing to the tardy discovery of these lesions [3].

Case Presentation

20-year-old female patient, originally from the city of Cancun, without a significant background in May 2018, she presented bladder tenesmus, pollakiuria, mild dysuria of 4 days of evolution and fever, without another sign or symptom added, go to outpatient consultation, Examination General de Urine reports hematuria.

Renal ultrasonography with bilateral hydronephrosis and loss of the functional parenchyma of the left kidney, being replaced by hydronephrotic mass (Figure 1). Computed Axial Tomography (CAT) Left kidney: it is observed replaced by a large hydronephrotic bag that measures 17×14×10 cm at its maximum axes, with significant cortical thinning, without reinforcement (Figure 2). The presumptive diagnosis of pyeloureteral stenosis is established. Double bilateral J catheters (14f) are placed on May 18, 2018. During surgery both catheters are successfully placed, the Foley catheter is placed for collection. The Foley catheter is removed on May 19, 2018.

Patient reports onset of colic-like pain in the right renal fossa on May 20, 2018 the patient expels one of the catheters, the simple abdominal X-ray on May 21, 2018 reports expulsion of the right double J catheter, with good implantation of the left double J catheter, on monthly follow-up renal ultrasound reports significant regression of the left hydronephrotic bag. Bilateral endopyelolithotomy is performed with double J catheter replacement, for August 8, 2018. Currently asymptomatic, in recovery, with medical management of moderate proteinuria with 0.5 mcg VO calcitriol and 100 mg oral allopurinol.

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***Corresponding author:** Maria Valeria Jimenez Baez, Coordination de Planeación y Enlace Institucional, Instituto Mexicano del Seguro Social, Region 509, Cancun, Delegación Quintana Roo, Mexico, C.P. 77500, Tel: 9982678701; E-mail: valeria.jimenezb@imss.gob.mx



Figure 1: Abdominal ultrasound of the right hydronephrosis and the left hydronephrotic mass.

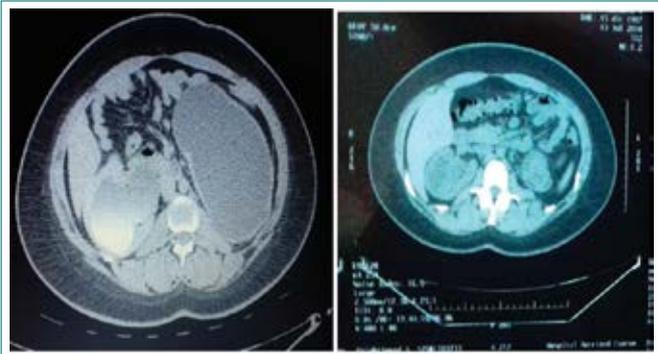


Figure 2: Simple and contrasted tomography of the control abdomen showing involution of the left hydronephrotic bag, thinning of the renal cortex and dilatation of the right kidney.

Discussion

There are different treatments for UPJO, the main ones being retrograde endourological dilation and dismembered pyeloplasty [3-6].

The retrograde endourological dilatation was initially described in children under one year of age since the clinical picture is more prevalent in the first days or years of life. Doraiswamy, used a technique with Fogarty balloon, achieving dilatation in 10 of 11 patients obtaining good results, however, the majority required multiple dilations [7].

Another method for the management of the EUP has been open pyeloplasty [8]. This technique has a success rate greater than 90% [6]. This treatment has multiple advantages over minimally invasive procedures [1,7,8]. In open pyeloplasty it is possible to perform direct anastomosis of mucosa to mucosa in a hermetic way, which prevents the escape of urine to the periureteral tissues avoiding secondary fibrosis, dismembered pyeloplasty allows the ureter to be mobilized in front of an accessory vessel [8]. The major drawbacks of open pyeloplasty are the prolonged recovery time and postoperative pain associated with the lumpectomy incision [1,2,9].

Dismembered pyeloplasty is the most widely used procedure for the management of patients with EUP with a success rate greater than 90% and adequate results, preservation of the renal function, improvement of symptoms and low morbidity [1,6-8,10-12]. Although this technique is very useful, it has longer recovery time and complications compared to endourological dilation, therefore, according to the analysis, it is believed that the best treatment for UPJO is retrograde endourological dilation for the shortest time of operation, less need for analgesics (NSAIDs), less hospital stay and has a minimum percentage of complications [9,11].

Ureteropelvic Junction Obstruction (UPJO) has been treated historically with open pyeloplasty was the gold standard for surgical management, laparoscopic methods to repair UPJO have largely taken over as the preferred approach for adolescent and adult patients. An online survey was distributed to all urologists registered with the Canadian Urology a total of 100 board-certified urologists completed our survey, 98% reported preferring the Anderson-Hynes (dismembered) pyeloplasty technique, Laparoscopic pyeloplasty remains a technically challenging procedure that many Canadian urologists are uncomfortable performing [1,12].

In the last few years, numerous studies have focused on the genetics of the renal system. One study demonstrates whether epigenetics is related to pyeloureteral stenosis and if that is the case if it could be used as a prognostic and diagnostic biomarker [9].

A study that analyzed the methylation in DNA extracted from pyeloureteral junction samples obtained from surgery in pediatric patients in the period from 1999 to 2015, resulting in a total of 20 patients. The selected genes for methylation-specific PCR (MSP) were the following: p16, RASSF1A, MGMT, Cyclin D-2, HIN-1, E-Cadherin, and RASAL-1 [13].

The results of methylation showed a considerable proportion of aberrant methylation in the promoter region of the genes p16 (25%), MGMT (15%), E-Cadherin (25%), HIN-1 (25%) and RASAL-1 (35%). The association of the clinical-radiological groups with methylation/non-methylation states of each gene was also analyzed. The methylation does have a role in fibrosis developed in pyeloureteral stenosis. Two clinical patterns of poor prognosis associated with two epigenetic methylation cluster. RASAL- 1, E-Cadherin, HIN-1 and p16 would be candidates for future studies on their prognostic implications in pyeloureteral stenosis [9,13].

Conclusion

The management UPJO in public health institutions it's have an important work to do, determine risk factors and early diagnostics its necessary and not only have a finder in an ultrasound.

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