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Endoscopic Management of Lithiasis Localized in a Superior caliceal Renal Diverticula: Case Report and Literature Review

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ABSTRACT

Caliceal diverticula stones are rare. Their management is conditioned by the appearance of clinical signs. The treatment gold standard was initially open surgery. With the advent of SWL, PCNL and flexible uretero-renoscopy, treatment has become less and less invasive. Among these techniques, the choice depends on the localization and the size of the diverticula and stones. We report here the case of a patient with a superior caliceal diverticula stones treated by flexibleuretero-renoscopy and laser.

Introduction

A calyx diverticulum corresponds to a cavity communicating with the renal excretory ducts through a neck [1]. The calytic diverticula have an incidence of less than 1% and are of unknown etiology.However, a congenital theory is suspected [2]. The development of a concomitant calculation is observed in 9.5 to 39% of cases, and the methods adopted for their management are controversial [3]. Open surgical treatment has been largely supplanted by minimally invasive methods, particularly flexible ureteroscopy.

Observation

This is a patient aged 50, with no significant pathological history, who has had left lumbar pain for the last month, without associated urinary signs, or hematuria, in a context of apyrexia and state preservation. General.The physical examination was without particularities.Un urinary tree without preparation has objectified a semi of calcifications projecting on the right renal area.The renal ultrasound was without particularities.

Figure 1. Computed tomography image showing intra-diverticular lithiasis appearance.

The CT has objectified an aspect of a caliciel superior diverticulum left measuring 25 x 20 mm, seat of multiple agglomerated lithiases measuring 12 to 13 mm with a density of 941 HU (Figure 1).

The patient was admitted to the operating room where he benefited from a retrograde uretero-pyelography showing an appearance in favor of a lithiasis cluster within a diverticulum connected to the upper left calyx by a thin slice (Figure 2)), followed a double probe rise J (Figure 3).

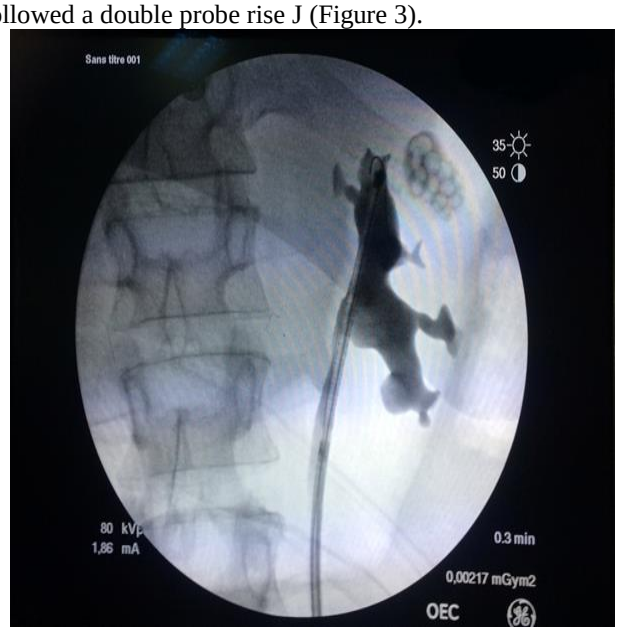

Figure 2. Lithiasic mass in a left upper diverticulum following a retrograde ureteropyrography.

The patient was readmitted to the block 15 days later to benefit from flexible laser ureterorenoscopy under general anesthesia. The ureter was catheterized by a hydrophilic nitinol guide, then the 45 mm access sheath was raised on the latter, under scopic control.

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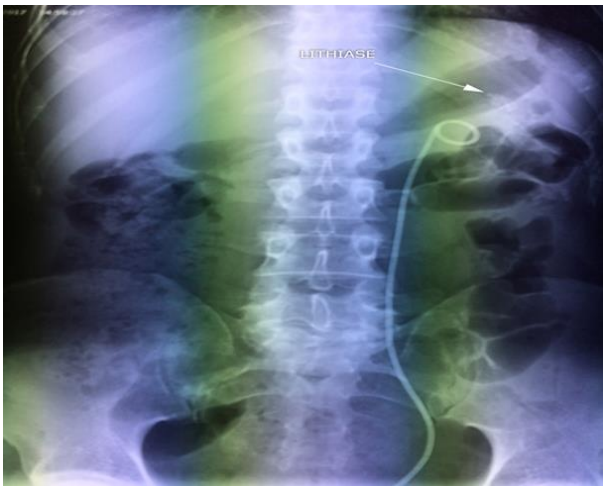

Figure 3. Urinary tree without preparation showing opacity of calcium tonalite projecting on the left renal area with double J probe in place.

This was followed by the introduction of the flexible uretero-renoscope and the injection of methylene blue to facilitate the identification of the divertivular collar located at the level of the superior calyx, which was then incised by the holmium laser, without bleeding. We have subsequently approached the diverticular cavity by the uretero-renoscope with in situ fragmentation of the laser calculi and extraction of almost all of these with a Dormia®-type basket clip (Figure 4).

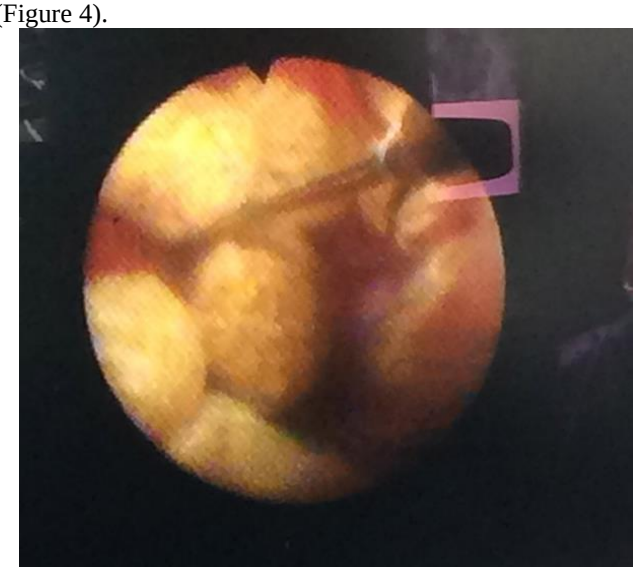

Figure 4.Flexible ureteroscopy image showing the extraction of intra diverticular stones using the Dormia forceps.

The intervention lasted 3h30 and was finalized by the establishment of a double type ureteral endoprosthesis.

An AUSP was performed 24 hours later, demonstrating a complete disappearance of the opacities of calcium tone previously present at the level of the left renal area. The patient was declared outgoing the day after the procedure. The double probe was erected at 1 month.

Discussion

The calyx diverticula are cavities communicating with the excretory way of the kidney by an often short and narrow neck. Their symptomatic, diathermatic, and diathermic discovery can still be estimated in about 50% of cases [4]. The intervention of reference of the diverticulecaliciellithiasiasymptomatic, a rare entity in urology, consisted in approaching the diverticulum by open surgery and performing a uniformedection involving both the diverticulum and the calculus [4]. In addition, they are often the seat of lithiases disposed in variable seat mass, calce upper middle or lower. All intra diverticular calculations are not necessarily to be treated and can be monitored.However a symptomatic calculation (nephritic colic, hematuria), or a particularly infectious complication, requires a management which consists of the removal of the stones and also the enlargement the neck of the diverticulum to prevent an eventual relapse [2].

The indications depend mainly on the seat of the diverticulum. However, patients must have metabolic exploration and medical treatment. The LEC is the first-line treatment, its success rate is 21%, and 4 to 60% of patients can become asymptomatic even in case of persistence. residual calculus [5]. NLPC is a widely used technique, but can be laborious or at the cost of complications (hemorrhage, uro-pneumothorax), especially for upper calytic diverticula [5,6]. NLPC is proposed for inferior and posterior diverticulum calculations. The puncture should be direct on the diverticulum.For middle and superior calce diverticular calculi, some patients prefer a flexible uretero-renoscopy with fragmentation of the in situ calculation by the laser and enlargement of the neck [6]. According to Auge et al., 35% of patients were asymptomatic postoperatively, and 19% without fragments, this in a study conducted on 39 patients between November 1994 and April 2001 [7].

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It may also be possible to perform a centralpolar renal failure [6]. Retro-peritonoscopy is a therapeutic eventuality that consists of direct nephrotomy through the thin part of the cortex. It is indicated especially for posterior diverticula [6,13,14].

Conclusion

We report here the treatment by flexible uretero-renoscopy of a mescal calciferous diverticula lump that is left

superior symptomatic. The endoscopic approach is an invasive minimally invasive technique, which has been shown to be very effective especially for caliesuperior and middle diverticular stones. The goal of uretero-renoscopy is the removal of lithiases and the treatment of the cavity. is done by balloon dilation or by laser incision.

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