

Laparoscopic-Extended Pyelolithotomy With Concomitant Pyeloplasty: A Case Report

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ABSTRACT

The authors provide the first known report of concomitant laparoscopic-extended pyelolithotomy with pyeloplasty. A 45-year-old male with symptomatic staghorn calculus secondary to pelviureteric junction obstruction underwent concomitant laparoscopic-extended pyelolithotomy and Fenger's nondismembered pyeloplasty. The feasibility and limitations of the procedures are described. The authors concluded that despite its technical challenges, laparoscopic pyelolithotomy with pyeloplasty is a minimally invasive surgical option that provides the benefit of minimal morbidity with correction of the pelviureteric junction obstruction.

INTRODUCTION

Management of staghorn calculi has always been complex [1]. Staghorn calculi have been treated using multiple puncture percutaneous nephrolithotomy (PCNL), with or without extracorporeal shock wave lithotripsy (ESWL). Alternatively, staghorn calculi have been removed using open extended pyelolithotomy with nephrolithotomy. Laparoscopic extended pyelolithotomy [2] and anatomic nephrolithotomy [3] have been less commonly used.

Pelviureteric junction obstruction can predispose the patient to secondary calculi. Occasionally, a staghorn calculus may coexist with pelviureteric junction obstruction. Laparoscopic pyeloplasty is becoming the new gold standard for the management of pelviureteric junction obstruction [4]. It has been reported to be successful even in children [5]. Laparoscopic management of pelviureteric junction obstruction with concomitant secondary stones has also been reported [6,7]. The authors present the case of a patient whose partial staghorn calculus with pelviureteric junction obstruction was managed laparoscopically.

Case Report

A 45-year-old male presented with a partial staghorn calculus involving the lower calyces (anterior and posterior) and pelvis. He also had a pelviureteric junction obstruction (Figure 1). Because the patient had 2 pathologies, his options were open surgery or laparoscopy. PCNL with endopyelotomy was not considered in this patient due to unsatisfactory results of endopyelotomy in the literature [8].

The colon was mobilized, and the ureter and pelvis were dissected using 5 ports: (1) a paraumbilical 10 mm camera port, (2) a 5 mm port in the subcostal region, (3) a 10 mm port in the left iliac fossa, (4) a 10 mm port in the epigastrium for retraction, and (5) a 5 mm port in the flank for suction (Figure 2). The pyelotomy was planned such that a nondismembered pyeloplasty (Fengerplasty) could also be completed (Figure 3). Extension into the infundibulum and lower calyx was made (Figure 4). The staghorn calculus was entirely removed (Figure 5). Secondary calculi were removed by irrigation, during which a few calculi slipped into the perirenal area. The 10

KEYWORDS: Staghorn Calculus; Pelviureteric junction obstruction; Pyeloplasty; Extended pyelolithotomy; Laparoscopy.

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Abbreviations and Acronyms

PCNL = percutaneous nephrolithotomy
ESWL = extracorporeal shock wave lithotripsy