# Fraley's Syndrome: A Rare Cause of Obstruction of the Collecting System

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Fraley's syndrome is a rare cause of obstruction of the collecting system. It results from an extrinsic vascular compression of a calyceal infundibulum by a branch of the renal artery. Clinicians should be aware of this syndrome when facing an isolated dilatation of a calyx, classically an upper pole calyx dilatation, with a defect in the superior infundibulum on CT urography. Here, we pictorially present the conservative surgical treatment of a Fraley's syndrome. After identification of the artery responsible for the obstruction, the infundibulum was opened, uncrossed from the vessel, and closed by an end-to-end anastomosis. UROLOGY 133: e7–e8, 2019. © 2019 Elsevier Inc.

A 17-year-old woman presented complaining of right-flank pain for 12 months, associated with recurrent right pyelonephritis. She had no past medical history and no renal failure. A computed tomography scan with urography revealed a defect in the superior infundibulum due to an extrinsic compression by an upper branch of the right renal artery, resulting in an isolated upper pole calyx dilatation (Fig. 1). This syndrome was initially described by Fraley in 1966, as a rare anatomic variant of the renal vascular anatomy with anatomic as well as functional implications.[1] Very few surgical cases have been reported in the literature,[2,3] including extirpative procedures.[4] Here, we pictorially present the conservative surgical treatment of a Fraley's syndrome. The surgery was performed extraperitoneally through a flank incision. The vascular pedicle was dissected from the hilum toward the intrarenal portion. A small nephrotomy gave exposure to the upper infundibulum. The branch of the renal artery responsible for the compression of the infundibulum was identified (Fig. 2). The infundibulum was opened to uncross the artery and repaired by an end-to-end PDS

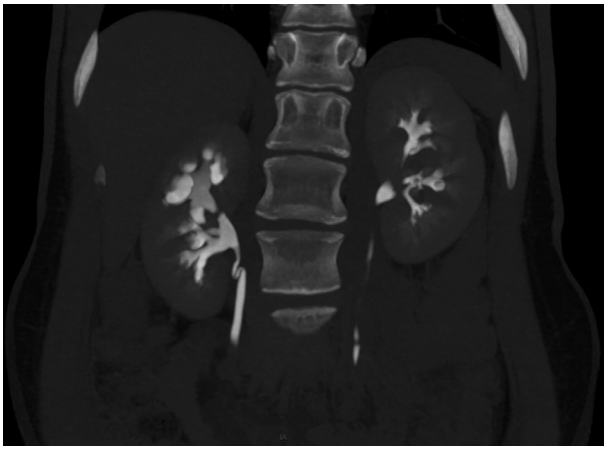

**Figure 1.** CT urography demonstrating a defect in the right superior infundibulum, with an isolated upper pole calyx dilatation.

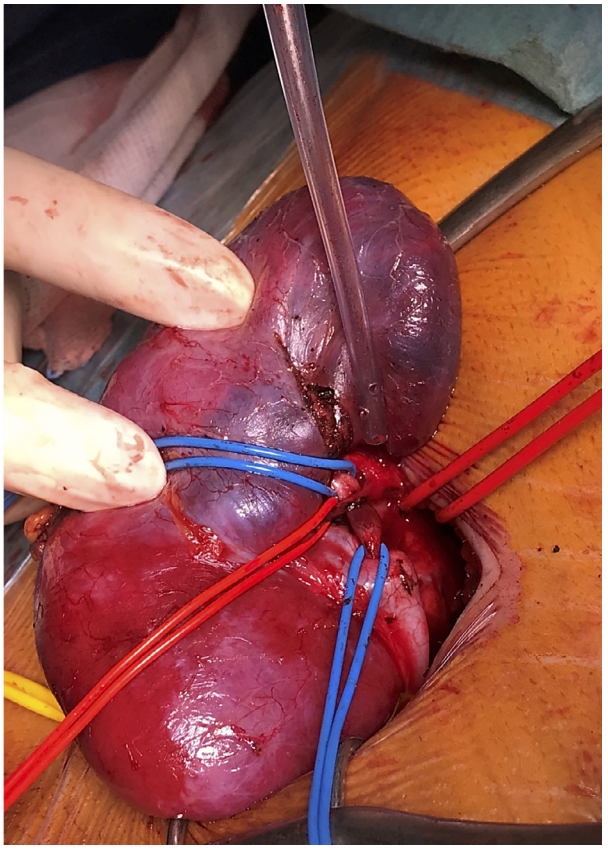

**Figure 2.** Dissection of the intrarenal portion of the pedicle. The upper infundibulum is identified by the blue surgical loop. A branch of the renal artery is responsible for the compression of the infundibulum (red surgical loop).

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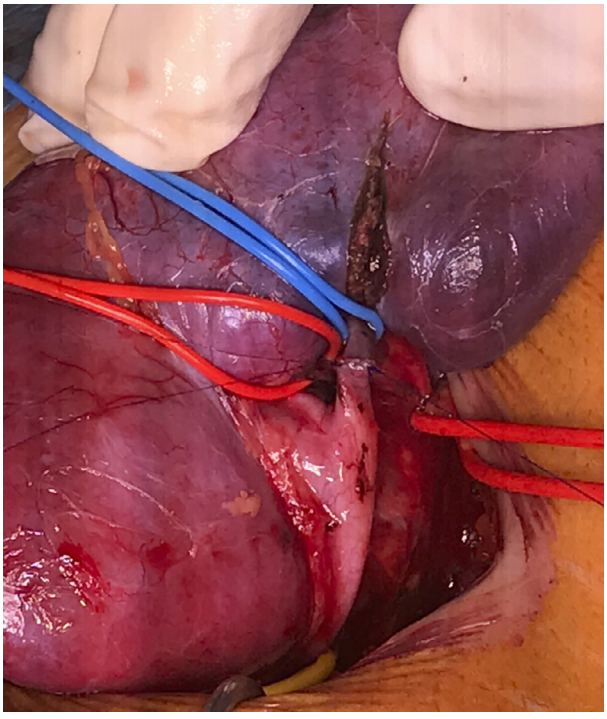

**Figure 3.** Final aspect after section of the infundibulum to uncross the artery and reparation by an end-to-end PDS 6/0 anastomosis.

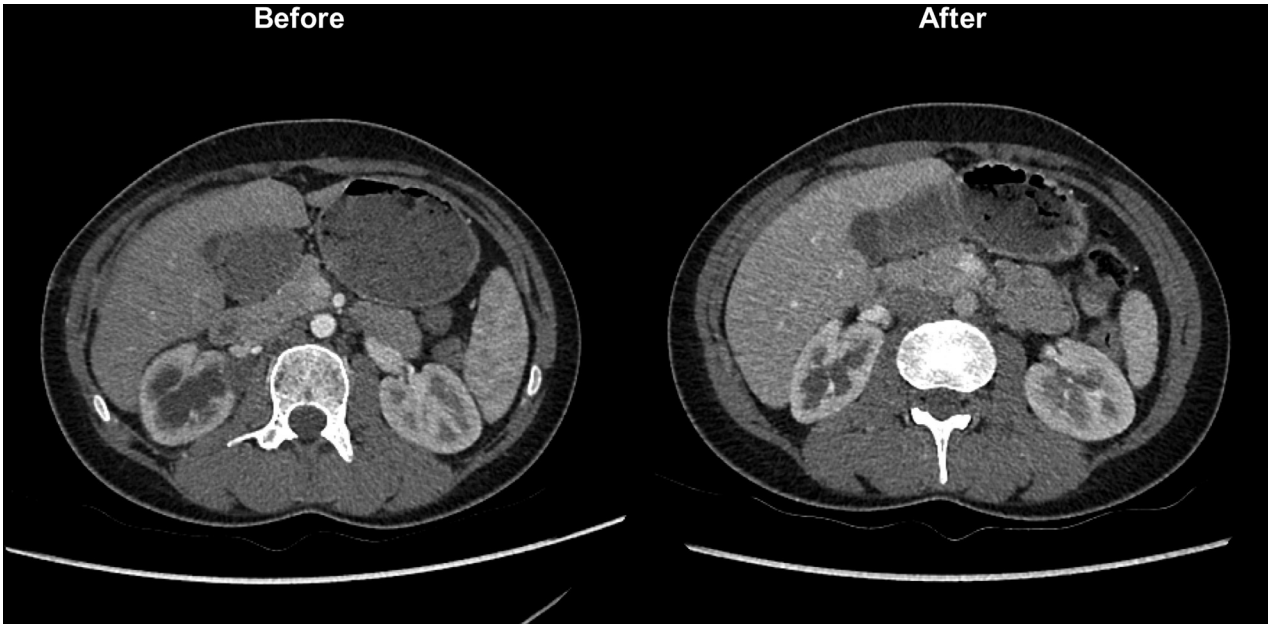


**Figure 4.** CT scan showing the upper calyx before and after surgery.

6/0 anastomosis (Fig. 3). Three months after surgery, the patient was symptom-free with a regression of the dilatation of the upper calyx on CT scan (Fig. 4).

## References

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