

Ureteric re-implantation and nephrectomy due to deeply infiltrating endometriosis causing ureteric obstruction – a BSGE accredited endometriosis centre experience

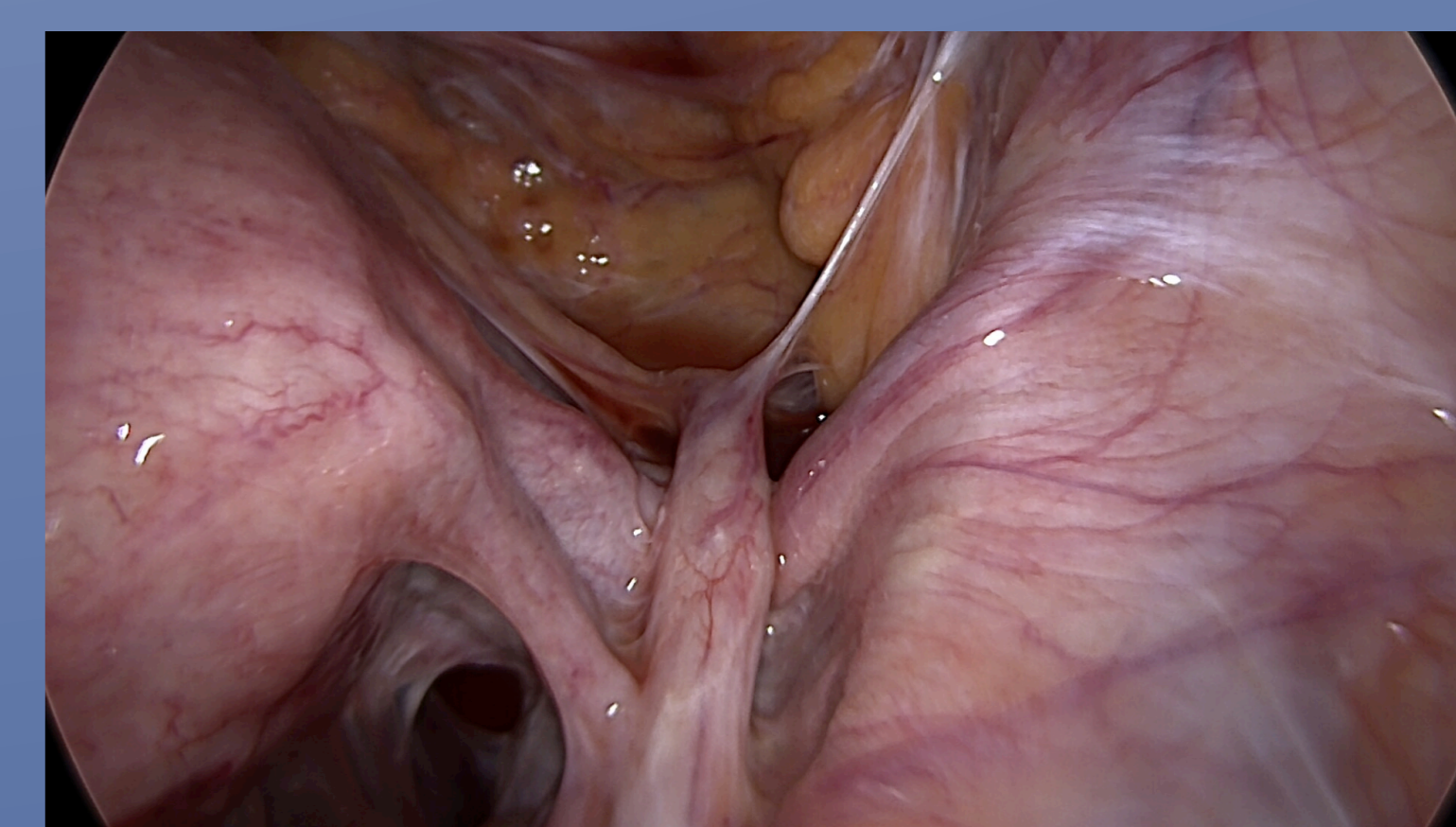
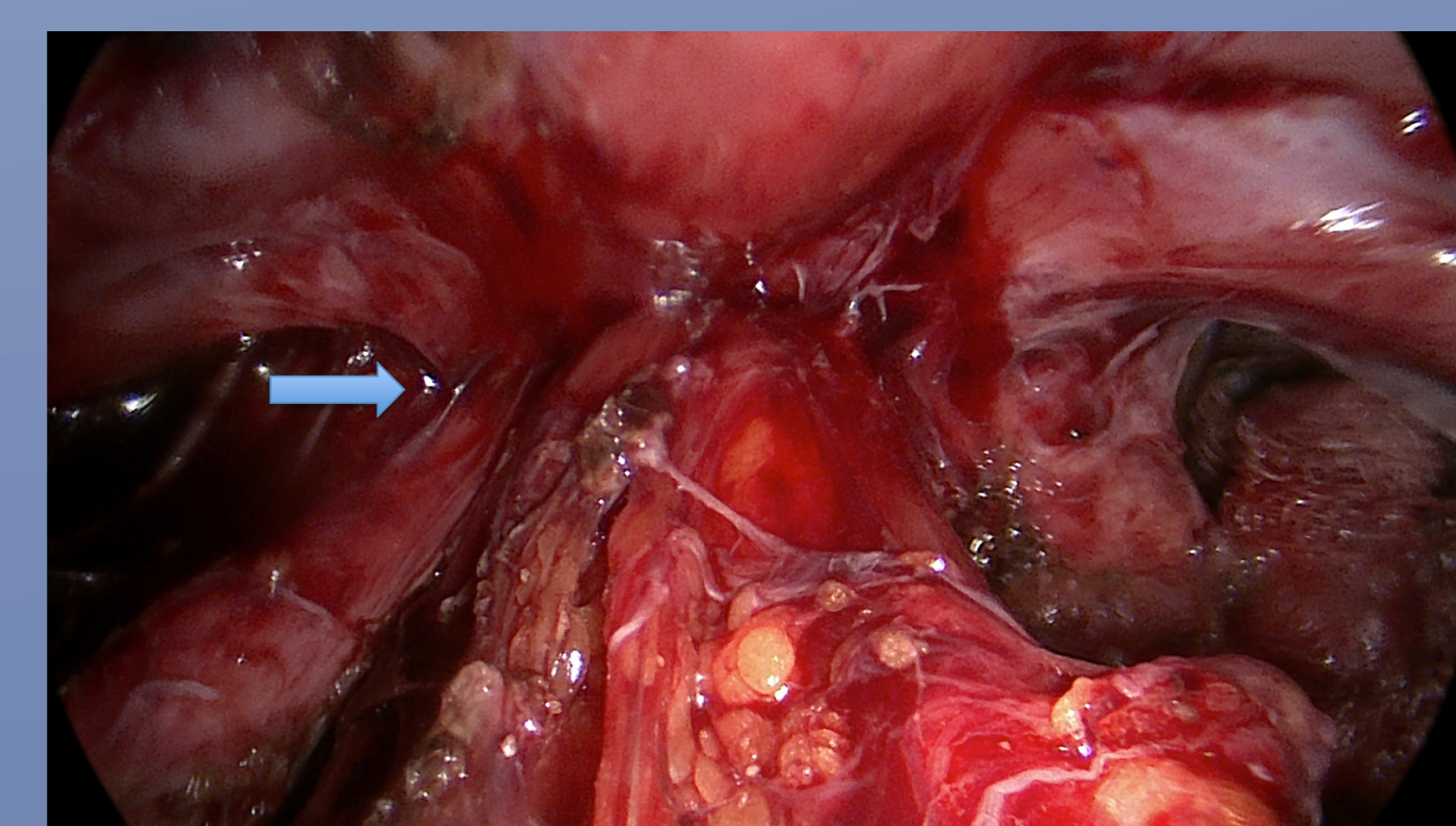
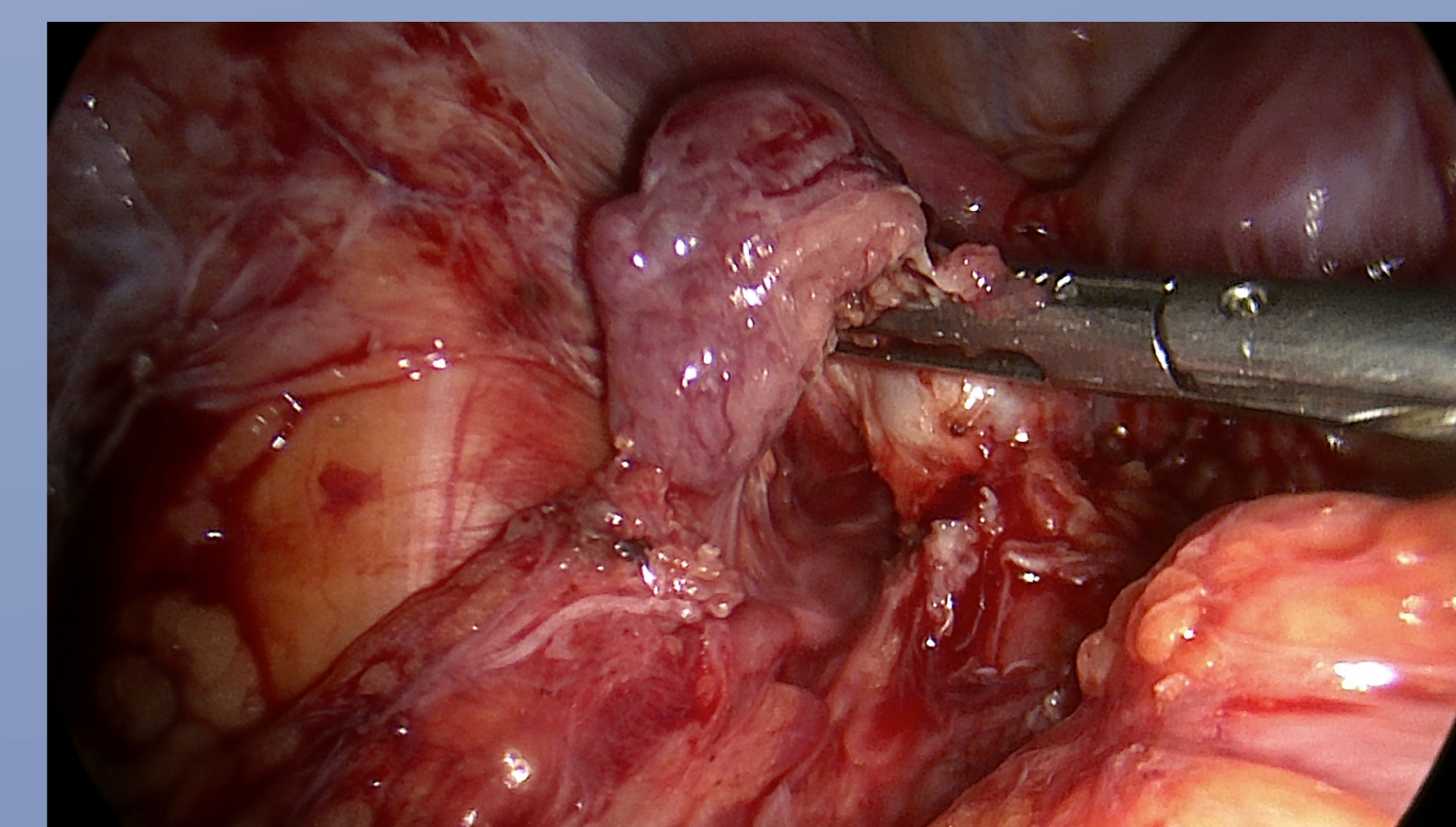
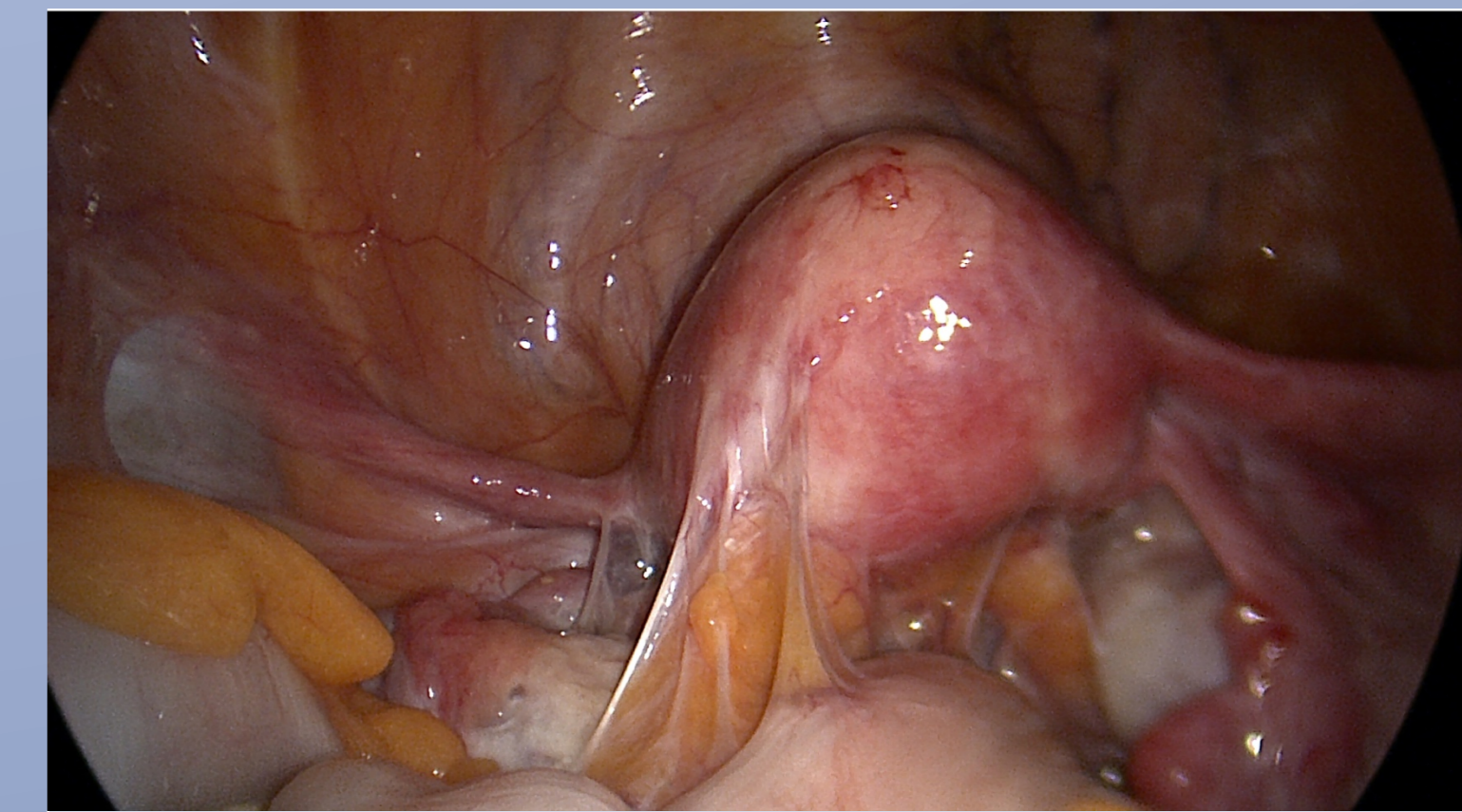
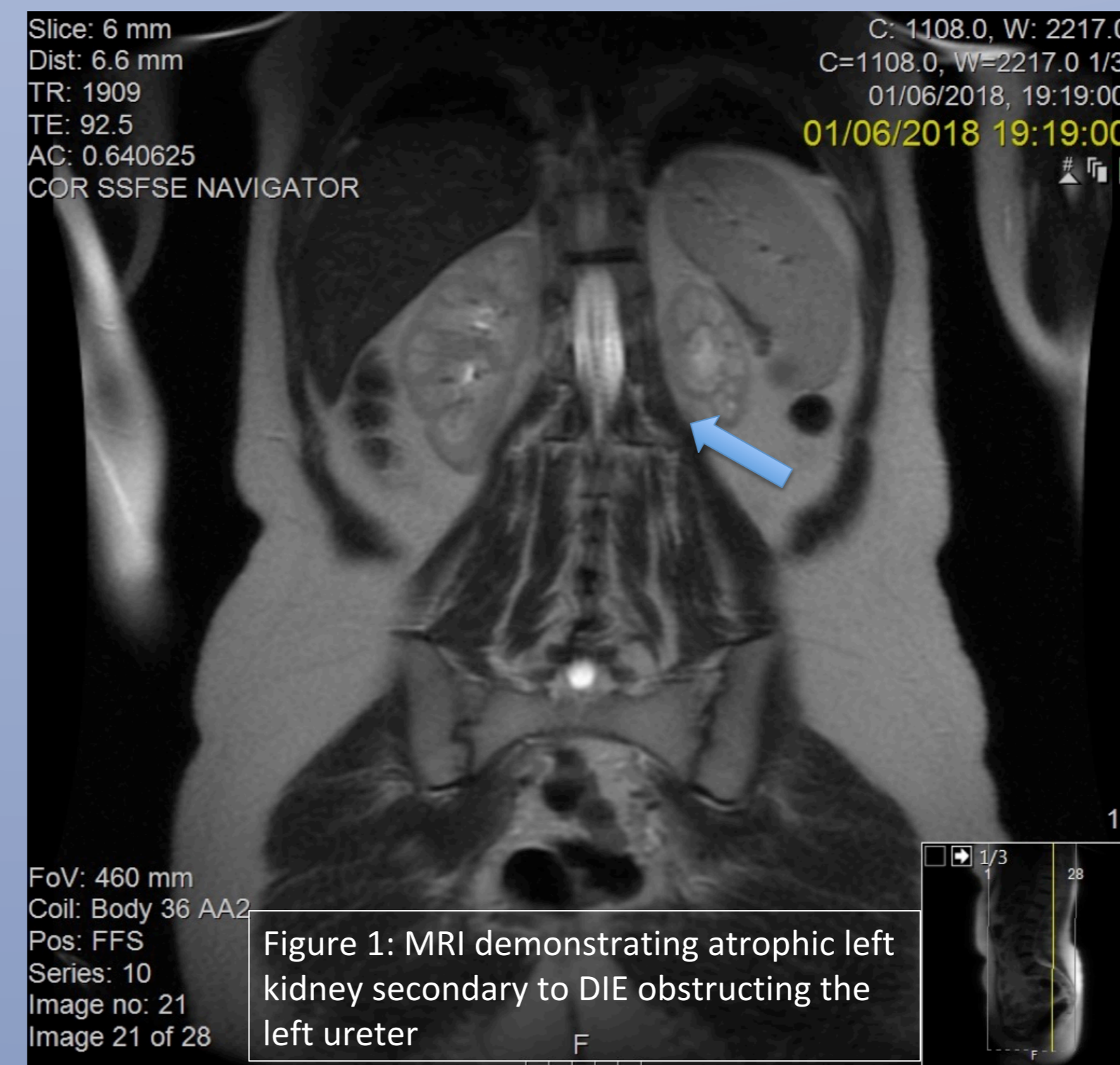
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OBJECTIVES

To review the presentation, diagnosis and management of women with complex deep infiltrating endometriosis (DIE) requiring ureteric resection and reimplantation, or nephrectomy secondary to ureteric obstruction by DIE.

METHODS

A retrospective review of all patients with DIE requiring ureteric resection, re-implantation or nephrectomy. Patients were identified via computerised theatre records (Theatreman) and cross-referenced against our centre's British Society for Gynaecology Endoscopy (BSGE) endometriosis database. Non-endometriosis re-implantations were excluded. The search covered 2011 to April 2019.



RESULTS

Over 8 years, 5 patients were identified with DIE of the ureter requiring resection, re-implantation or nephrectomy. Four patients underwent resection and re-implantation of the ureter, and one patient required a nephrectomy.

Diagnosis

All cases were diagnosed laparoscopically with stage III/IV endometriosis prior to being seen by our endometriosis centre, and all were asymptomatic of their ureteric involvement. In 4 cases, the hydronephrosis was diagnosed on imaging (1 on USS, 3 on MRI). The 5th case was diagnosed by finding hydronephrer at laparoscopy, and confirmed on subsequent imaging (MRI). In all patients renal biochemistry was normal. Two patients had a MAG 3 renal scan, showing reduced renal function on the affected side, with one also having marked atrophic changes on her MRI.

Management

All of the cases were discussed in our endometriosis MDT, and surgery was planned as joint surgical cases with Urology due to the high likelihood of ureteric resection, re-implantation and/or potential nephrectomy. 4/5 (80%) patients were treated with resection and re-implantation of the ureter, 1/5 (20%) with nephrectomy. 4/5 (80%) also had rectal involvement. Three patients received surgical treatment for rectal disease with 2/3 requiring a rectal shave and 1/3 a segmental resection. There were no intra-operative complications or conversions. Endometriosis was confirmed histologically in all cases.

Outcomes

Follow up ranged from 4 months – 7 years. Pre- and post-operative standardised questionnaires were given to the 4 patients eligible for the BSGE national database. 'EQUVAS' best imaginable health scores improved in 75%, by an average of 18.8, and there was a tendency to improvement in premenstrual, menstrual, non-cyclical and bladder pain alongside deep dyspareunia. Cyclical and non-cyclical dyschezia, low back pain, difficulty passing urine, bowel urgency and constipation showed worsened average scores. Hydronephrosis improved in all patients with re-implantation, and there have been no recurrences of ureteric disease.

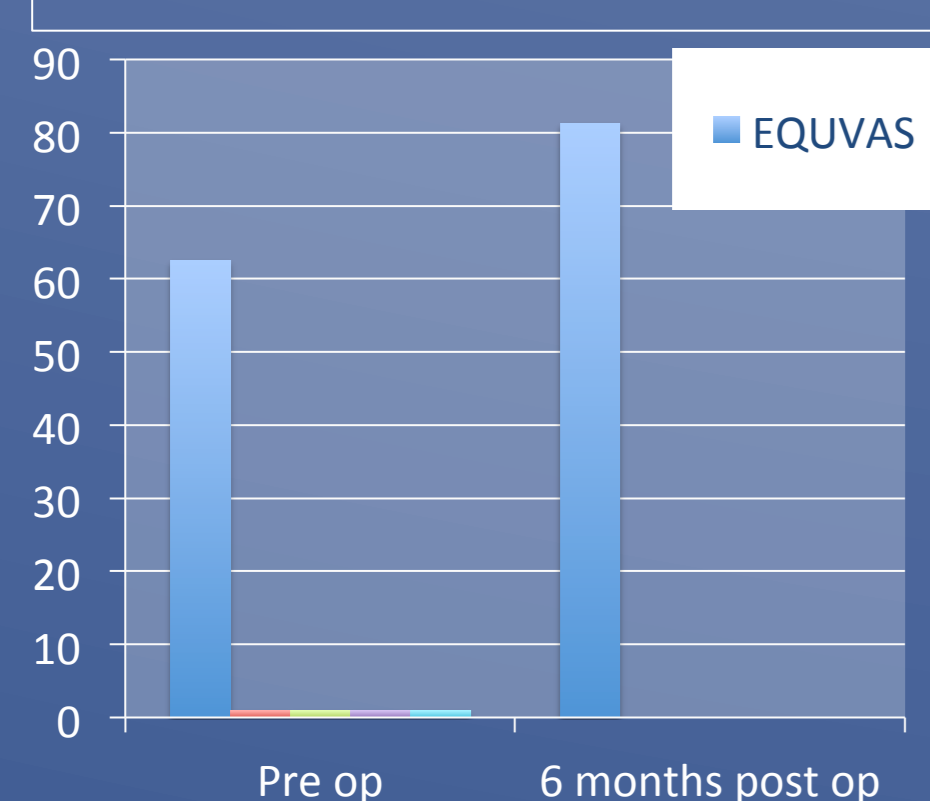


Chart 1: Median EQUVAS scores

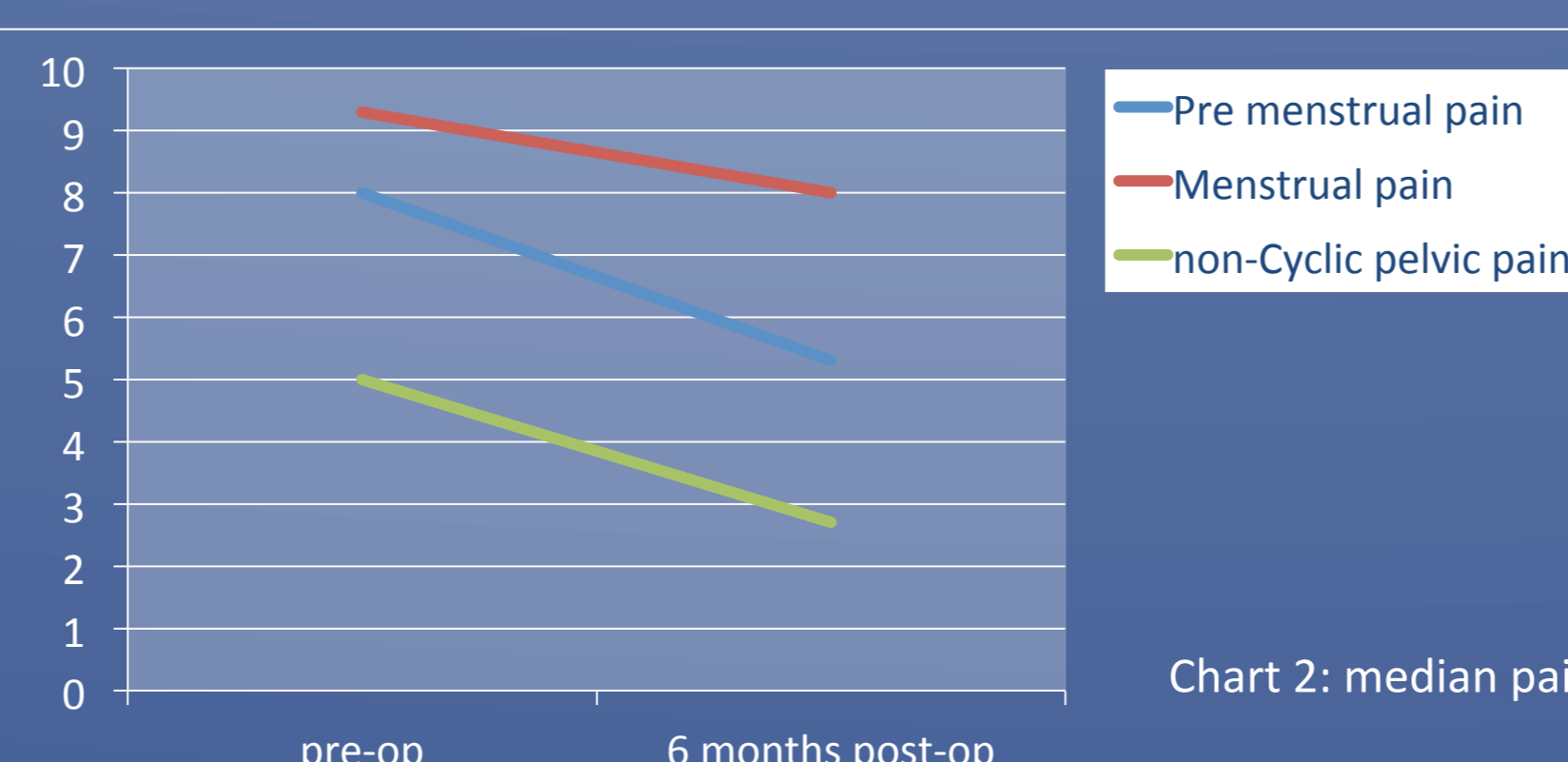


Chart 2: median pain scores

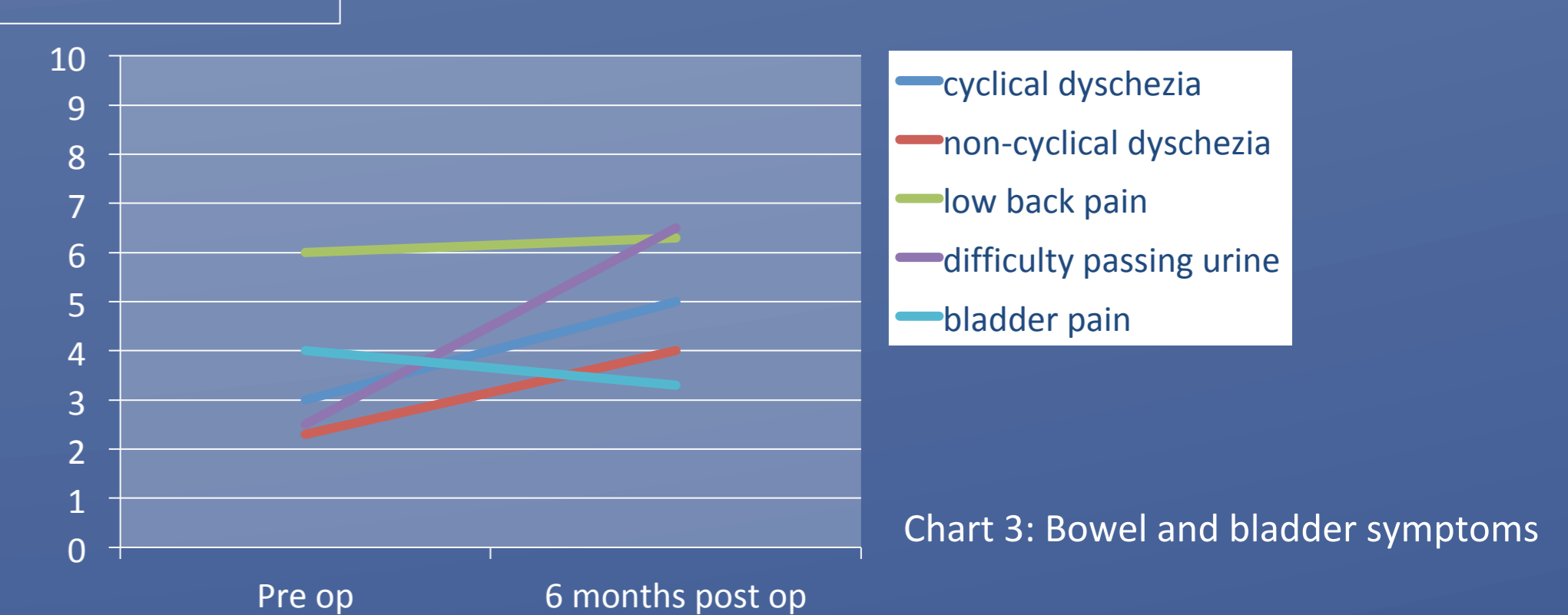


Chart 3: Bowel and bladder symptoms

DISCUSSION

Endometriosis is a common condition, affecting up to 10% of reproductive-aged women. Pelvic endometriosis involving the urinary tract is less common, affecting around 1% of cases. Whilst the bladder is most commonly affected, and the urethra the least, ureteral endometriosis accounts for approximately 10% of genitourinary involvement.¹ The surgical options of ureterolysis, ureteral re-anastomoses, ureteral re-implantation or nephrectomy are tailored to the individual patient's circumstances and the need to relieve obstruction, avoid disease recurrence and minimise morbidity. It is recognised that a non-functioning kidney (<14% on kidney scintigraphy) is unlikely to recover its function once the obstruction is relieved, and is a risk factor for vascular hypertension and recurrent pyelonephritis.^{2,3} In one series, 24% of patients with ureteric obstruction required nephrectomy due to silent loss of renal function.⁴

In our nephrectomy patient, the initial hope had been to preserve her affected kidney (18% function). However, it became apparent intra-operatively that to relieve her ureteric obstruction would require resection and re-anastomosis of the ureter (with an adjacent bowel anastomosis) in order to fully excise her DIE. This double anastomoses would increase her risks of surgical morbidity, and as the kidney was already atrophic with only 18% function (insufficient to keep her off dialysis should she lose her healthy kidney) it was decided, as per our prior endometriosis MDT discussions with Consultant Urologist, to proceed to a simple nephrectomy to reduce her risk of complications from the irreversibly damaged kidney. The patient had been counseled pre-operatively for this eventuality.

CONCLUSIONS

- Ureteric obstruction by endometriosis is an infrequent but important complication of the disease
- The ureteric obstruction may be asymptomatic, even when the obstructive uropathy causes a progressive loss of renal function and therefore it is important to maintain a high index of suspicion
- Imaging is more helpful to identify the hydronephrosis than renal biochemistry which may remain normal due to the compensation by the healthy unaffected kidney
- Treatment requires a timely individualised approach, utilising the expertise of the multidisciplinary team to remove disease and relieve obstruction in order to avoid irreversible damage to the kidney

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