

## MANAGEMENT AND OUTCOMES OF URINARY TRACT FISTULA REPAIR AT A SINGLE INSTITUTION

### Hypothesis / aims of study

Urinary tract fistulae are prevalent in developing countries following prolonged, obstructed labour. In the developed world however, the majority of fistulae are iatrogenic following pelvic surgery or radiotherapy. Repair poses significant challenges, with emphasis placed on the approach, timing and technique of surgery. Paramount to success is strict adherence to the principles of fistula repair and the appropriate use of well-vascularised interposition flaps. We describe the approach and outcomes of patients undergoing urinary tract fistula repair at our institution.

### Study design, materials and methods

67 consecutive patients undergoing urinary tract fistula repair in a single-centre by two surgeons over a ten-year period were reviewed. Gynaecological/colorectal surgery was an aetiological factor in 73% of patients, urological surgery (6%), radiotherapy (11%), with trauma, obstetric and benign conditions representing the rest. 68% of patients underwent a trans-abdominal repair for either a vesicovaginal fistula (44 patients), vesicouterine fistula (1 patient) or uretero-vaginal fistula (1 patient). The remainder underwent a trans-vaginal approach for either a neobladder-vaginal fistula (3 patients) or urethrovaginal fistula (18 patients). Patients undergoing a trans-abdominal repair received omental flap interpositioning where available and a peritoneal flap was used in 3 patients due to an absence of suitable omentum resulting from previous pelvic surgery. Unilateral Martius flap interpositioning was performed in patients undergoing a trans-vaginal repair. All patients received thromboprophylaxis during admission and oral antibiotics were continued until catheters were removed in the absence of contrast leak on the post-operative cystogram.

### Results

Mean patient age at time of repair was 48.8 years (range 21-82) and median time from original intervention to repair was 207 days (range 2 days – 25 years). 33/67 patients were referrals from other centres and 41% of these had undergone an initial repair at the referring institution. There was one case of post-operative death at 10 days resulting from an acute myocardial infarction, one case of pelvic haematoma that was managed conservatively and no cases of significant infection. All catheters were removed in the absence of contrast leak on post-operative cystogram within three weeks. 10% patients developed *de novo* overactive bladder symptoms that settled with anticholinergics alone, whereas 10/46 patients undergoing a trans-abdominal repair and 15/21 patients undergoing a trans-vaginal repair described stress incontinence at clinic follow-up. Of these, 20 patients underwent a sling procedure using autologous fascia (AFS) in the absence of raised bladder pressures on videourodynamic assessment and 66% of these patients remain completely dry. Overall, two patients further underwent cystectomy and ileal conduit urinary diversion for painful bladder syndrome. There were no cases of fistulae recurrence.

### Interpretation of results

90% of urinary tract fistulae occur following pelvic surgery and radiotherapy in this patient cohort. Appropriate interposition grafts are imperative and in the absence of an appropriate segment of omentum, a flap of peritoneum can be used during a trans-abdominal fistula repair.

Significant complications following fistula repair are uncommon, however SUI can develop in a large proportion of patients and a sling procedure can be successful in this context. Being a tertiary referral centre, we perform a high number of redo procedures and are referred a greater proportion of complex cases.

### Concluding message

Despite VVF repair representing a challenge, successful repair can be achieved in the majority of cases and well-vascularised interposition flaps should be used where available. SUI can occur post-operatively, particularly following low VVF or urethrovaginal fistulae and patients are counseled this can occur. Fistula repair should be performed in high volume centres by suitably experienced surgeons to ensure good outcomes for patients.

### Disclosures

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