

## THE TREATMENT OF PRIMARY VESICOVAGINAL FISTULA REPAIR WITH BLADDER MUCOSAL FLAP– A REPORT OF INITIAL CASE SERIES

### Hypothesis / aims of study

Vesicovaginal fistula (VVF) is a disease that has been known for a long time. Whilst prolonged labour is the major cause of the disease in developing countries, hysterectomies, obstetric trauma due to oncological surgeries, infectious and inflammatory diseases and radiotherapy are the leading causes in developed countries. Most cases require surgical treatment with an abdominal, vaginal or in some cases a combined approach. In this study, we describe our own technique with a transabdominal approach that includes repair of the VVF with a mucosal flap prepared from the bladder.

### Study design, materials and methods

**Patients:** A total of 7 cases, classified as Type 1 according to Waaldijk classification, were operated at between December 2011 and November 2013. Gynaecological surgery or delivery was the suspected cause of the fistulas. **Fistula repair:** A Phannenstiel incision was made to approach the bladder. The bladder was opened with a longitudinal incision and the fistula opening from the interior surface of the bladder was identified and the diameter of the defect was measured. Subsequent to fistula identification 4 charriere (ch) ureteral catheters were introduced in both ureters. This was followed by removal of the whole fistula tract down to the vagina together with the neighbouring approximately 0,5cm healthy tissue. After removal of the fistula tract the vaginal wall was sutured with 2/0 sutures from the abdominal exposure gained. The bladder wall was closed with 3/0 polyglactean sutures. At this stage of the operation, the internal surface of the bladder defect was closed. This was done by preparing a flap from the neighboring mucosal area of the defect visualize. The prepared flap was inverted on the defect and sutured to the accompanying parts of the mucosal defect. For this purpose 4/0 sutures were used. In summary the approach allowed a 4 layer closure. Urethral catheters were removed on the postoperative 10<sup>th</sup> day and all patients were externalized within  $3.7 \pm 1$  days. All patients were scheduled for follow-up on the 1<sup>st</sup>, 3<sup>rd</sup> and 6<sup>th</sup> months. **Clinical data collected:** All demographic data of patients were collected in addition to their clinical history. Treatment outcomes were assessed on the 1<sup>st</sup>, 3<sup>rd</sup> and 6<sup>th</sup> postoperative months. Treatment associated complications and newly developing urinary symptoms were also recorded.

### Results

Seven patients with a mean age of  $30.2 \pm 6.2$  years were operated with the defined technique. Mean operation time was  $72 \pm 14,3$  minutes. Mean follow-up time: 9-24 months. Postoperative dyspareunia developed in 1 patient and this was not resolved on the 6<sup>th</sup> month check-up. None of the patients had urgency, urinary incontinence or any other associated urinary tract symptom during the follow-up times. All patients on the 6<sup>th</sup> month follow-up had no recurrence of the fistula. No patient was lost to follow-up.

### Interpretation of results

Management aim of VVF is to restore the physiologic urine storage and voiding function and avoid the diverted urine flow. Although there are various techniques defined for the management of VVF no one of them has been attributed as the gold standard of management. In order to achieve the desired successful outcomes some principals have been defined for the management. Removal of ischemic tissue and utilization of a well-vascularized flap are important. Sutures put in on each layer should not overlap and be void of tension. Although the success rates of a simple VVF is very high the rates in patients with a recurrent fistula or a fistula that developed due to radiotherapy or a malignancy are much less. Vaginal repair is regarded as a procedure with low morbidity, fast recovery and favorable cosmetic outcomes. However, fistulas that are large, at the back wall of the bladder or close to the ureters require a larger surgical field. In these cases an abdominal approach is usually preferred. In our study the technique we utilized is inspired from the hypospadias repair technique that involves a turn-over flap. This approach does not require to place a flap in between the bladder and vagina as defined in the O'Connor technique. This allows us to work out of the peritoneum for harvesting an omental flap and avoiding associated complication such as ileus and peritonitis. We think that having a short operation time, not using additional tissue for interpositioning, using the native bladder tissue for interpositioning and a small incision to the bladder decrease the morbidities associated with surgery.

### Concluding message

This study which was conducted with a limited number of patients indicates that VVF repair can be an efficient and reliable method when executed with a technique similar to the over flap technique frequently preferred in hypospadias fistula repair. Future randomized prospective studies conducted with higher number of participants should provide more conclusive results.

### Disclosures

**Funding:** none **Clinical Trial:** Yes **Public Registry:** No **RCT:** No **Subjects:** HUMAN **Ethics not Req'd:** - **Helsinki:** Yes **Informed Consent:** Yes