

## Laparoscopic repair of rectovaginal fistula following diverting colostomy

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### Abstract

#### AIM

Aim of this study is to study feasibility of laparoscopic surgery for management of rectovaginal fistula following diverting colostomy.

#### MATERIAL AND METHODS

This is a case series of 30 patients of diverting colostomy followed by laparoscopic rectovaginal fistula repair from November 2003 to June 2014. Age of patients ranged from 42 years to 58 years (mean 48 years). These patients were followed up for a minimum period of 9 months assessing duration of surgery, feasibility, recurrence and morbidity due to urinary and sexual dysfunction. All patients were evaluated with gastrointestinal quality of life index questionnaire (GIQLI).

#### RESULTS

Duration of surgery was 186.6±10 min. All patients recovered with morbidity compared to any other laparoscopic surgery and there were no post op urinary or sexual dysfunction during the follow up period. There were no recurrences in follow up period. Median GIQLI score was 75 (ranged from 35 to 110) before treatment and 120 (ranged from 80 to 144) after treatment.

#### CONCLUSION

Diverting colostomy followed by laparoscopic surgery is a very safe and feasible method for management of rectovaginal fistula with minimum morbidity.

#### INTRODUCTION

Rectovaginal fistula as its name implies is an epithelium lined tract between rectum and vagina. It is a very troublesome problem for women as it severely affects her personal and sexual life. Obstetric trauma is the most common cause of rectovaginal fistula. Another important cause of rectovaginal fistula is Crohn's disease. Fistula can also

develop as a complication of abdominal and specifically pelvic surgeries like abdominoperineal resection, hysterectomy. With the advent of minimally access surgery, now rectovaginal fistula can be repaired laparoscopically.

## **MATERIAL AND METHODS**

This is a case series of 30 patients of laparoscopic rectovaginal fistula repair from November 2003 to June 2014. Age of patients ranged from 42 years to 58 years (mean 48 years). These patients were followed up for a minimum period of 9 months assessing duration of surgery, feasibility, recurrence and morbidity due to urinary and sexual dysfunction. Out of 30 patients, 22 patients had fistula following hysterectomy and 8 patients developed fistula following prolonged labour. All patients had high type of rectovaginal fistula as evidenced by transvaginal ultrasound and proctosigmoidoscopy. After doing diverting loop colostomy, patients were advised conservative management for 6 months in hope of spontaneous closure of fistula. Then the patients were advised to undergo methylene blue leak test. After confirmation of persisting rectovaginal fistula, patients were posted for laparoscopic rectovaginal repair.

## **OPERATIVE TECHNIQUE**

Under general anesthesia, patients were placed in modified lithotomy position, catheterization was done, pneumoperitoneum created with Veress needle. Two 10mm ports created, one 10 mm umbilical port for telescope, other 10 mm in left hypochondrium in mid clavicular line. Three 5mm ports created, one in left iliac fossa, other in right iliac fossa and one in midway between umbilical port and left iliac fossa port. Adhesiolysis between rectum and vagina done. Then the fistulous tract was identified and then divided and both the vaginal & rectal rents were repaired with Vicryl 2-0 in a single layer using intra-corporeal suturing technique and omentum was mobilized and omental interposition between rectum and vagina was done. A tube drain was placed in pelvis through left hypochondrium 10mm port. All ports were closed.

## **RESULTS**

Post-op period was uneventful. Patients were started on oral clear liquids on 2<sup>nd</sup> post-op day and stitches removed on 4<sup>th</sup> post-op day. Drain was removed on 5<sup>th</sup> post-op day and catheter was removed on 2<sup>nd</sup> post-op day. On follow up at 1 month and 3 months there was no recurrence of symptoms. Integrity of repair was confirmed by methylene blue enema, showing no leakage to vagina. Then colostomy closure was done and patients were again followed up for another 6 months showing no sign of recurrence in any patient as evidenced by methylene blue leak test. There were no urinary or sexual dysfunction in any patient during follow up period.

Median GIQLI score was 75 (ranged from 35 to 110) before treatment and 120 (ranged from 80 to 144) after 9 months of treatment ( $p=0.0001$ ).

**DISCUSSION**

Rectovaginal fistula can be of congenital or acquired type. Acquired type is more common and can be due to obstetric trauma, inflammatory bowel disease like crohn's disease, as a result of post-surgical procedures, radiation, carcinoma rectum etc. Most common cause of rectovaginal fistula is obstetric trauma due to prolonged obstructed labor, forceps delivery, episiotomy<sup>1</sup> etc. Patients mostly present with passage of flatus or feces through vagina. They can also present with recurrent urinary tract infection and foul smelling vaginal discharge. Rectovaginal fistula can be of low type and high type<sup>2</sup>. Low type is connection between lower third of rectum and lower vagina and high type is between mid-rectum and upper vagina. Evaluation of patient includes clinical examination including per-rectal and per-vaginal examination. Many a times fistula tract can be palpated per-rectally as an induration or by palpating between the two fingers placed in vagina and rectum. Next logical investigation is methylene blue leak test by giving methylene blue enema and putting a saline soaked gauze in vagina and checking staining of vaginal gauze. Proctosigmoidoscopy can also be done to visualize the fistulous tract. Manometry and rectal ultrasonography can also be done to confirm continence of rectum. Surgical management of rectovaginal fistula can be divided into low and high type. Low type of rectovaginal fistula is best managed by perineal approach using endo-rectal advancement flap<sup>3</sup>. High type of fistula is best managed by trans-abdominal approach. This approach involves adhesiolysis to create a plane between rectum and vagina, identification of fistulous tract, excision of fistulous tract and its repair, mobilization of omentum to be placed between rectum and vagina, and suturing it to pelvic floor. These steps can be achieved by open or laparoscopic technique. Laparoscopic method achieves this with minimum morbidity. There are only few reported cases of laparoscopic rectovaginal repair as it is very difficult to achieve a plane between rectum and vagina due to dense adhesions<sup>4,5</sup>. In our case a diverting loop colostomy was done in every patient. Then the laparoscopic repair was done. There were no complications in any patient. Therefore diverting colostomy may be vital to high success rate of laparoscopic rectovaginal repair.

**CONCLUSION**

Laparoscopic rectovaginal repair is a feasible technique to repair high rectovaginal fistula. Diverting colostomy is a key step for its high success rate. It can be applied to selective patients. This kind of repair is very demanding of skill of intracorporeal suturing and should be done by experienced surgeons skilled in advanced laparoscopic pelvic surgeries. Achieving a plane due to dense adhesions between rectum and vagina is a daunting task. Also sound anatomic knowledge of pelvis and its anatomical variation is required to achieve such a feat. But till now there are no clear guideline regarding selection of patients and the results of the repair cannot be predicted due to rarity of reported cases.

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