RECTOVAGINAL FISTULA AFTER GASTROINTESTINAL TRACT CONTINUITY RESTORATION USING A STAPLER – CASE REPORT

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The authors presented a case of rectovaginal fistula in a 40-year old female patient after gastrointestinal tract continuity restoration (Hartmann’s operation) performed because of iatrogenic rectal damage. The most likely cause of rectovaginal fistula development was the erroneous introduction of the stapler into the vagina and sigmoidovaginostomy during an attempt to reconstruct the continuity of the gastrointestinal tract. In order to reconstruct the continuity of the gastrointestinal tract the patient was subject to anterior rectal resection, sigmoidorectostomy, and closure of the fistula inside the vaginal wall by its duplication. Additionally, a double protective ileostomy was performed, which was subject to closure after three months.

Key words: rectovaginal fistula, stapler

Rectovaginal fistulas are pathological connections between the large bowel and vagina lined with epithelium. Those fistulas are usually manifested by winds passing through the vagina, and concomitant secretion of stool or mucous-purulent secretions. This is accompanied by frequent urinary tract or reproductive system infections, psychological discomfort, sexual function disturbances, dyspareunia or perineal pain.

The criteria for the division of fistulas consider their location, size, and etiology. Type of fistula implies management and therapy.

The so-called low fistulas are located between the lower part of a rectum (1/3 low part) and lower part of a vagina – the above-mentioned may be approached from the perineum (transvaginal, transperineal, transrectal); high fistulas are located between the middle and upper part of a rectum, and posterior wall of a vagina. Their correction usually requires the transabdominal approach (1).

Considering the size of fistulas they can be divided into small (<0.5 cm), medium (0.5-2.5 cm), and large (>2.5 cm).

The causes of rectovaginal fistulas are as follows (descending frequency):
1) perinatal injuries (88% of cases),
2) intestinal inflammatory diseases (mainly Crohn’s disease) – nearly 9% of cases,
3) post-radiation fistulas (tele/brachytherapy adjuvant to cervical, endometrial, vaginal, and vulvar carcinoma),
4) neoplasms (anorectal and minor pelvic tumors),
5) perioperative injuries, iatrogenic fistulas (transvaginal hysterectomy, anterior resection of the rectum – 0.9-10%),
6) infections (tuberculosis, lymphogranuloma venereum, Bartholin’s gland abscesses, HIV, HPV, CMV, and schistosomiasis) (2).

Rectovaginal fistulas are rare complications following restoration of a continuity of the gastrointestinal tract, resulting from a technical error in the use of a stapler.

CASE REPORT

A 40-year old female patient was admitted to the Department of Surgery for planned treatment of a rectovaginal fistula.
In the past the patient underwent a laparotomy, due to a left ovarian cyst with uterine extirpation in addition to the left appendages. During the procedure rectal perforation occurred. Hartmann’s procedure was performed. The histopathological examination of the removed structures showed a left ovarian endometrial cyst. The excised rectum showed endometriosis foci with coexisting inflammation.

Seven months later the patient was qualified for gastrointestinal tract continuity restoration. After the procedure the histopathological examination evaluated tissue collected from the stapler; the distal tissue ring demonstrated the presence of a stratified non-cornifying vaginal squamous epithelium. On the fourth day after gastrointestinal continuity restoration the patient observed fecal leakage and gases from the vagina nonetheless, she was discharged from the hospital. Due to the persistence of these symptoms she was readmitted and conservative treatment initiated. On the basis of colonoscopy and the gynecological examination she was diagnosed with a rectovaginal fistula.

After yet another seven months she was admitted to the hospital for treatment. She continued to complain of fecal leakage and gases from the vagina. On admission, the patient was in good general condition. During the vaginal examination the posterior wall of the vagina was location to an ostium, the size of a finger lesion with presence of feces. The “per rectum” examination was normal. Rectoscopy demonstrated (12-14 cm from the edge of the rectum) a closed rectal stump. Below, 7 cm from the rectal line one observed a fistula opening, 1 cm in diameter (fig. 1).

On the basis of the medical history, physical and gynecological examinations, and rectoscopy the patient was diagnosed with a rectovaginal fistula, which was probably a consequence of the improper restoration of the continuity of the gastrointestinal tract.

The patient was qualified for laparotomy. During the procedure we observed a wide anastomosis between the fornix of the vagina and sigmoid colon; just below one observed a fistula between the posterior wall of the vagina and anterior wall of the rectum (1 cm in diameter). The rectal stump closed by means of a linear stapler was located 8-10 cm above the rectovaginal fistula (fig. 2).

In this case, the sigmoid colon was severed from the vagina, and the rectum was prepared from the vagina, 2 cm below the lower fistula. The rectal opening was closed by means of a TA-45 stapler and the rectal stump was subject to resection. The vaginal stump was closed by means of a double layer of sutures with wall duplication. The rectal stump was subject to tension-free sigmoidorectostomy using an EEA 28 stapler. A double protective ileostomy was exteriorized nearly 12 cm from Bauhin’s valve. Redon’s drain was placed into the minor pelvis. A fragment of the pedunculated omentum was
introduced between the vaginal stump and the sigmoidorectostomy. The abdominal integu-
ments were closed by means of layered sutures. The postoperative course proved uneventful.
On the fifth postoperative day the patient was discharged from the hospital in good general
condition.

Control gynecological and endoscopic ex-
aminations showed no presence of the fistula. The wide sigmoidorectoscopy was patent. After
three months the patient was once again ad-
mitted to the department, in order to manage
the ileostomy. The procedure was performed
according to qualifications without complica-
tions. The patient was discharged from the
hospital in good general condition on the third
postoperative day.

DISCUSSION

The most common cause of rectovaginal
fistula development after gastrointestinal tract
continuity restoration using the stapler meth-
od is the retraction of the posterior vaginal
wall into the anastomotic line. Sigmoidovagi-
nostomy, as a result of the erroneous introd-
uction of the stapler into the vagina is the subject
of isolated study reports (3, 4).

The occurrence of the above-mentioned
complication is correlated with the experience
and skills of the operating team. Technical
errors most often include the inadequate dis-
section of the posterior vaginal wall from the
rectal stump, or during maneuvering of the
stapler, which leads towards improper sigmoi-
dorectoscopy. Other reasons include inade-
quate visualization, due to difficult anatomical
(narrow minor pelvis anastomosis) or technical
conditions (such as the illumination of the
operating room) (5).

In order to prevent the development of fis-
tulas during reconstruction of the continuity
of the gastrointestinal tract it is recommended
to retract the vagina from the anastomotic line,
and perform a per vaginam examination di-
rectly before the use of a stapler. It is also
important to prepare the bowel for anastomo-
sis—a poorly dissected bowel, thick distally lo-
cated tissues lead towards incomplete incision
and anastomosis.

Considering the presented case the rectum
was closed 12-14 cm from the anal orifice, fol-
lowed by erroneous introduction of the stapler
into the vagina, which lead towards rectovag-
inal fistula development.

Thus, the presence of symptoms which oc-
curred on the fourth day after the operation,
after complete mobilization of the gastrointes-
tinal tract (in case of typical rectovaginal fis-
tulas symptoms usually develop in the distant
future (average – 23 days) (6, 7).

It is not entirely clear, what is the reason
for the development of the lower fistula (be-
tween the posterior vaginal wall and rectal
stump). The occurrence of the above-mentioned
thanks to the retraction of the anterior rectal
wall into the stapler line is unlikely, due to the
distance between the fistula and suture line.
The fistula might have been created in connec-
tion with the patients’ initial complaints (en-
dometriosis with inflammation of the rectal
wall) or as a consequence of the effect of the
feces on the vaginal wall and “penetration” to
the rectal ampulla.

Management in case of rectovaginal fistu-
las depends on their location and size. Con-
sidering the presented study case, the correc-
tion of the erroneous anastomosis required
laparotomy, excision of the sigmoid colon from
the vagina, and resection of the rectal stump
and proper sigmoidorectostomy. The vaginal
stump was closed using double-layered su-
tures with duplication of its wall. The anas-
tomotic line was separated from the sutured
vaginal wall by means of the pedunculated
omental flap.

It seems that in such cases it is reasonable
to perform protective stomy, which was done.

It is regrettable that corrective surgery was
performed after seven months since the occur-
rence of complications, after unsuccessful ob-
servation attempts and troublesome conserva-
tive treatment.

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