CASE REPORT

A Rare Complication Following Vaginoplasty Surgery with Polypropylene Mesh

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ABSTRACT

Introduction: **Pelvic organ prolapse is common among multiparous and postmenopausal women. Nowadays, more and more procedures are being performed to improve the quality of life among women suffering from genital abnormalities. Various implants are quite often used in this type of procedure. Polypropylene mesh has found its way into vaginal plastic surgery and is used most frequently in postmenopausal women. Vaginoplasty using polypropylene mesh is described as minimally invasive.**

Case report: **A 69-year-old female patient was admitted to the Department of Gynaecology on an emergency basis due to urinary and faecal incontinence, lower abdominal pain and elevated body temperature. Ten days earlier, she had undergone a transvaginal sacral-spinal fixation using polypropylene mesh procedure to treat prolapse of the reproductive organs. Empirical antibiotic therapy with levofloxacin was implemented due to high inflammatory parameters. A follow-up MRI of the pelvis was performed, which showed an abscess extending from the vaginal wall to the gluteus maximus muscle and extraperitoneally to the level of the great vessels. The patient underwent drainage of the abscess and a laparotomy to evaluate the retroperitoneal space for the presence of purulent lesions.**

Conclusions: **Every surgery carries the risk of complications. Unusual signs and symptoms reported by patients after surgery require careful diagnosis and checking the exact source of the complaints. A seemingly minimally invasive procedure can also result in a severe complication, which is why post-operative follow-up with patients is so important.**

KEY WORDS

polypropylene mesh, vaginal plication, vaginal prolapse, vaginal mesh

INTRODUCTION

Worldwide, many women suffer from lowered reproductive organs. This problem affects young women, but it particularly affects multiparous women over the age of 50. This condition is so distressing because it hinders daily functioning and hurts the quality of sexual life[1)]. The characteristic symptoms occurring in patients with uterine prolapse are mainly incontinence, a feeling of pushing on the bladder, a feeling of incomplete defecation, and soreness during intercourse. The severity of the symptoms increases over time, leading to an increasingly poorer functioning of the patient[2,3)]. Uterine prolapse is a condition that menopausal women, multiparous women, women with diseases that increase abdominal pressure or women with chronic constipation are most prone to. These factors weaken the muscles and ligaments responsible for supporting the vagina, rectum and bladder, resulting in outward vaginal protrusion and feelings of discomfort[4,5)]. Genital static disorders are a complication that is very common among obese women. Conservative treatment and, in particular, changes in lifestyle and dietary habits are believed to be most beneficial in these patients. Pelvic floor muscle training is used in treatment, as is postnatal rehabilitation, which has become increasingly popular among young mothers[6-8)]. In non-advanced forms of uterine prolapse, intravaginal pessaries are placed but are recommended for women who plan to become pregnant in the future. Pessaries placed in the woman's reproductive tract correct and slow down the lowering of the reproductive organ, and are considered an alternative surgery method[9)].

The main aim of treatment is to relieve the pain experienced by the patient and to restore normal anatomical relations. Surgical treatment is used in patients in whom conservative treatment has failed and the symptoms still hurt the patient's quality of life. Currently, the most commonly used procedure is transvaginal hysterectomy with vaginal cuff suspension[10,11)].

Modern medicine is increasingly using a special polypropylene mesh in the operation for uterine prolapse, which lifts the uterus upwards, eliminating the previous problem. Transvaginal access surgery is considered to be minimally invasive as the abdominal integuments are not disturbed, and the patient recovers more quickly and can return to her daily activities[12)].

Vaginal plastic surgery using vaginal mesh has many advantages. Among the most important are rapid recovery after surgery, improvement in the statics of the reproductive organ without its removal and a rare risk of complications[13)]. The procedure, performed from transvaginal access through the natural orifices of the body, reduces the risk of scarring. However, any surgical intervention carries a risk of complications. The most commonly reported is pain during implantation or exposure to the mesh. Rarely, do patients report recurrent lower urinary tract infections, fistulas, bleeding, erosions or vaginal scarring[14-16)]. Implant-assisted vaginal plastic surgery is considered a relatively safe procedure with extremely rare postoperative complications, with mesh implant-re-

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lated infections estimated to affect less than 1 % of those operated on. However, infection is more common in patients operated on via transvaginal access than via abdominal access. This is due to contamination of the mesh during insertion, which is greater during transvaginal access. The risk of infection is an inherent risk of any implant surgery[17,18].

It is therefore necessary to use mesh with caution and to pay attention to possible complications that may occur. The aim of our work is to show that even a seemingly minimally invasive procedure can have serious consequences that affect the functioning of the whole body.

CASE REPORT

The patient had a history of vaginal plication with the placement of Splentis mesh a fortnight ago. During initial surgery, the vaginal wall was incised and the arms of the mesh were inserted through the sacrospinous ligaments. The operation went without complications and the patient was discharged home in good condition. The patient, aged 69 years, was admitted as an emergency to the Department of Gynaecology due to urinary and faecal incontinence and an elevated temperature. On admission, the patient reported persistent lower abdominal pain for several days, accompanied by a sub-febrile state. The patient urinated involuntarily during admission. It was decided to place a bladder catheter and more than 2 litres of cloudy urine was drained. Bacteriological smears were performed. Laboratory tests revealed a high procalcitonin level of more than 422 ng/ml and an elevated CRP (C-reactive protein) of up to 160 mg/l. Empirical antibiotic therapy with levofloxacin together with meropenem was initiated. Urine, blood and vaginal discharge cultures were then performed. In the urine, Escherichia coli was found, which was sensitive to the antibiotic therapy implemented, so the given treatment regimen was maintained. Imaging studies were ordered. On chest X-ray, slight shadowing corresponding to scanty parenchymal thickening was noted in the inferior suprapleural fields of both lungs. In other imaging studies, no abnormalities. The patient continued to be hospitalised due to urosepsis and persistently high inflammatory parameters. A haematology consultation was ordered, due to abnormal morphology results. Based on the test results and the patient's current condition, reactive thrombocytosis PLT- 509 000 / mm3 was diagnosed, resulting from an active inflammatory process. Due to the lack of improvement in clinical state and laboratory results, mainly inflammatory markers, and the emerging anaemia,the patient's synthetic material - the previously implanted Splentis mesh was removed. The operation took place on day 16 of the patient's hospitalisation. The polypropylene mesh was removed in its entirety without the preparation of the peripheral tissues. A small amount of serous fluid escaped during the procedure. A bacteriological swab was taken. The loins were then rinsed with microdacin solution and sutures were placed. The procedure went without complications. Wound cultures yielded Klebsiella Pneumoniae ESBL(-) bacteria and Candida glabrata yeast. Under anaerobic conditions, the growth of Bacteroides fragilis was obtained. Targeted antibiotic therapy was implemented according to the results of intraoperative cultures. A post-operative contrast-enhanced follow-up pelvic MRI was performed, in which a cavity in the anterior superior vaginal wall, was observed. In the upper third of the vagina and the cervix, the present purulent content was described, penetrating between the anterior wall of the uterus and the posterior wall of the bladder through the vaginal defect, forming a thick-walled abscess-like fluid reservoir. It extends by approximately 15 cm, upwards reaching the level of the L3 vertebrae, above the aortic bifurcation, and downwards reaching the lower third of the vagina. At the level of the vagina, it extends posteriorly along the uterosacral ligament on the right side of the upper rectus fascia, penetrates through the piriformis muscle into the gluteus maximus muscle on the right side, where it forms a multi-chambered abscess approximately 15 x 10 x 15 cm in size. In addition, inflammatory changes, swelling and soft tissue enhancement around the pus reservoirs, especially between the bladder and the uterus and the upper vagina, were described. Abscess drainage was performed along with a laparotomy to assess the retroperitoneal space for the presence of purulent lesions. During the procedure, abdominal swabs were taken. No independent pathology detected. Palpation and macroscopic excluded the presence of fluid reservoirs in the retroperitoneal space. An abdominal revision was performed with the opening of the retroperitoneal spaces at the site of the described lesions on imaging, and no lesions, inflammatory infiltrates or fluid reservoirs including abscesses were found. Subsequently, under ultrasound (US) guidance, the buttock abscess was incised and drained. Approximately 300 ml of purulent contents were obtained. Cultures were taken, and then the reservoir was flushed with Microdacin. A drain was placed. After the procedure, the patient was in good general condition. Inflammatory parameters remained consistently high in the postoperative period. A follow-up pelvic MRI performed two weeks after the abscess drainage procedure visualised a repeated accumulation of pus content in the right gluteus maximus muscle. The presence of a fluid reservoir approximately 2 cm thick, smaller than the previous 12 x 9 cm was described. As before, the reservoir is connected? by a narrow band of tissue to the vagina forming a fistula. No abscesses were found in the small pelvis. Re-drainage of the abscess contents and lavage of the locus with microdacin solution was performed. During the following days of hospitalisation, the patient experienced a feeling of dyspnoea, chest pain with an episode of fainting without loss of consciousness. In addition, she reported a pulsating sensation in her neck and pressure. The patient was consulted several times by cardiology. ECG (electrocardiography) showed atrial tachycardia with a rate of approximately 130 /min. No features of dyspnoea, hypotension, or chest pain. On ECHO (echocardiography) of the heart, a slightly enlarged left atrium. Left and right ventricular systolic function is normal. Minor mitral and tricuspid regurgitation. Administration of amiodarone by slow intravenous infusion under close ECG monitoring was ordered. In addition, a CT (computed tomography) scan of the chest for pulmonary embolism was ordered. Contrasted pulmonary artery conus, left and right pulmonary arteries, as well as the lobar and segmental arteries of both lungs, showed no presence of contracture defects or areas of tissue thrombus. The patient was qualified for electrical cardioversion after an unsuccessful attempt at pharmacological moderation. Sinus rhythm was restored. The patient had another follow-up pelvic MRI scan after a further week on the ward due to persistently high titres of inflammatory parameters. Again, an abscess in the right gluteus maximus muscle was visualised, comparable in size to the previous examination. The fistula between the fluid reservoir and the vagina was found to be atrophied. As before, no abscesses were found in the pelvis minor. The patient was qualified for an abscess revision procedure again, yielding a negligible amount of serous-pleural discharge. The procedure proceeded without complications. Targeted antibiotic therapy was continued, resulting in a normalisation of inflammatory parameters one week after the last drainage. As her general condition improved, the woman was discharged home after more than one month of hospitalisation.

DISCUSSION

Despite medical advances, complications associated with polypropylene mesh still pose a significant problem for clinicians. A study by Gert Naumann et al. included 103 women who underwent uterine suspension surgery using a mesh implant. After 17 months of follow-up, they noted the effectiveness of the procedure in 89.2 % of the women who underwent the operation. Which is an extremely satisfying result that speaks for a high success rate[19]. During long-term follow-up among the 1121 women, only 0.4 % of the required mesh removal was due to reported complications. One of the largest randomised trials, PROSPECT, which studied 1,348 women, found that complications of vaginal mesh placement occurred in 4% of them. This required reoperation, most often resulting in the removal of the mesh[20]. Long-term studies and observations of patients after mesh implantation support a low recurrence rate. A high level of satisfaction and a relatively low complication rate are reported among operated patients. It is estimated that complications after surgery occur in 0-8% of the women studied. For this reason, mesh surgery is considered relatively safe. Women return to normal function very quickly after such surgery[21,22].

In addition, there are messages that after implantation of the mesh, which is a foreign material, its integrity with the body tissues may be disrupted. This results in the rejection of the mesh implant and the development of a defence mechanism, against it. Lack of integrity with body tissues can lead to infection and inflammation, which, if not recognised in time, can result in sepsis. For this reason, it is particularly important to observe patients who present with atypical postoperative symptoms[17,23].

In addition, studies have shown that transvaginal mesh surgery is more often associated with post-implantation pain, pain during intercourse as well and pain during defecation, compared to the same surgery performed with transabdominal access. A common complication is mesh exposure, which involves surgery to excise the exposed fragment. Surgery for partial excision of the exposed piece allows the remaining part of the mesh to be preserved, which performs its function equally well[24].

Current expert opinion suggests that the benefits of these operations still outweigh the risks. In our case, the patient underwent vaginal plication with Splentis mesh placement from transvaginal access. There were no contraindications that would disqualify the patient. The operation was successful and the patient was discharged home in good condition. Despite the belief that the operation was associated with a low risk of complications, the patient developed an infection, which in time developed into urosepsis. The above case demonstrates that even a small, seemingly easy-to-perform procedure can prove fatal or result in a rare complication. Nevertheless, it is always worth being vigilant and not underestimating the reported symptoms.

CONCLUSIONS

Vaginal plasty using splentis mesh has a relatively low complication rate. It is considered a relatively safe and minimally invasive method. However, it is worth remembering that the mesh is a foreign body placed inside the patient's body. People should be monitored after the procedure to react in time in case of complications. Although the procedure is considered minimally invasive, it should not put our vigilance to sleep. Rare complications can also affect patients, so a comprehensive approach to the problem, a careful analysis of symptoms and the ordering of imaging tests, which in this case proved to be invaluable in the diagnostic process, are crucial when treating those affected by postoperative complications. Only the pelvic MRI examination performed on the patient revealed the core of the problem and the cause of all complaints. Underestimating and downplaying the severity of the problem can have tragic consequences.

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