

Physiotherapeutic intervention in the rehabilitation post sex reassignment surgery male to female: a case report

A intervenção fisioterapêutica na reabilitação pós cirurgia de redesignação de sexo masculino para feminino: relato de caso

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ABSTRACT | CASE REPORT: This case report of a transsexual woman, 48 years old, with 15 years after sex reassignment surgery (SRS) without complaints. During the initial assessment, socio-demographic data, pain assessment using the visual analog visual scale (VAS), quality of life by SF-36, sexual function by QS-F were collected. The pelvic floor (PF) assessment was performed for inspection, palpation and strength following the PERFECT scheme. After the evaluation, vaginal stenosis, lack of perineal awareness, weakness of the pelvic floor muscles were identified and pain was reported during intercourse. **INTERVENTION:** An exercise program through vaginal dilators, behavioral therapy, and PF muscle training was suggested. The program aimed at 10 sessions of 40 minutes each, twice a week. At the end of the program, VAS, SF-36 and PF evaluation were collected following the PERFECT scheme. However, the QS-F was not applied at the end of the proposed program due to the patient's sexual inactivity for 3 months, including during the program period. **RESULTS:** After the final evaluation, the patient showed improvement in perineal awareness, vaginal penetration without discomfort, however, there was no improvement in the strength of the AP muscles. **FINAL REMARKS:** The SRS promotes anatomical alteration, which can cause urogenital and / or sexual dysfunctions. In this study, physiotherapy promoted improvement in perineal awareness and vaginal stenosis. However, more studies on physiotherapy are needed in this population, ensuring assistance and adequate follow-up during this process, reducing possible late complications.

KEYWORDS: Gender dysphoria. Sex reassignment surgery. Rehabilitation. Physiotherapy. Neovagine.

RESUMO | DESCRIÇÃO DO CASO: Este relato de caso de uma mulher transexual, 48 anos de idade, com 15 anos de pós cirurgia de redesignação sexual (CRS) sem queixas. Durante a avaliação inicial foram coletados os dados sociodemográficos, avaliação da dor através da escala visual analógica visual (EVA), a qualidade de vida pelo SF-36, a função sexual pelo QS-F. Foi realizada a avaliação do assoalho pélvico (AP) inspeção, palpação e força seguindo o esquema PERFECT. Após a avaliação foram identificadas estenose vaginal, falta de consciência perineal, fraqueza dos músculos do assoalho pélvico e a relatou dor durante a relação sexual. **INTERVENÇÃO:** Foi sugerido um programa de exercícios através dos dilatares vaginais, terapia comportamental, treino dos músculos do AP. O programa tinha por objetivo 10 sessões com 40 minutos de duração cada, duas vezes na semana. Ao final do programa foram coletadas a EVA, SF-36 e a avaliação do AP seguindo o esquema PERFECT. Entretanto, o QS-F não foi aplicado ao final do programa proposto devido a inatividade sexual da paciente por 3 meses, inclusive durante o tempo do programa. **RESULTADOS:** Após a avaliação final a paciente apresentou melhora da consciência perineal, penetração via vaginal sem desconforto, entretanto, não houve melhora da força dos músculos do AP. **CONSIDERAÇÕES FINAIS:** A CRS promove alteração anatômica, podendo ocasionar disfunções urogenitais e/ou sexuais. Neste estudo, a fisioterapia promoveu melhora da conscientização perineal e da estenose vaginal. Com tudo, são necessários mais estudos sobre a fisioterapia nesta população, garantindo assistência e acompanhamento de forma adequada durante este processo, reduzindo suas possíveis complicações tardias.

PALAVRAS-CHAVE: Disforia de gênero. Cirurgia de redesignação sexual. Reabilitação. Fisioterapia. Neovagina.

Introduction

Gender dysphoria comes from the individual's assurance, from irreversible feeling, and discontent of belonging to the birth designated gender, thus awakening a strong desire to change, in which many undergo a series of hormonal and surgical treatments, aiming to change their primary and secondary sexual characteristics to make the body as close as possible to the desired gender^{1,2,3}.

The Male-female sex reassignment surgery has different techniques, but the most widely used is orchidectomy, which consists of penile amputation, creation of the neovagina cavity, the lining of this cavity, reconstruction of the urethral hiatus, construction of the labia majora and labia minora, and clitoris formation^{4,5}.

At the end of the surgical procedure, a foam rubber mold coated with a condom will be placed. The local edema is usually accentuated in the first week. The vesical catheter is maintained until the seventh post operative day and the mold must be used for at least two months, with vaginal intercourse being released after this period^{6,7}.

The sex reassignment surgery can present major problems concerning the pelvic floor (PF), since several important structures of the PF are submitted to shreds so that they fit "perfectly". Among the complications related to SRS they range from the surgical act to the post operative period, either immediately or late. Among them, we highlight vaginal stenosis, urethral stenosis, vaginal prolapse, perforation of the vaginal wall, dyspareunia, and weakness of the vaginal wall^{8,9,10,11}.

The incorrect use or non-use of the vaginal mold, which is placed after the surgical process can cause changes in elasticity, vaginal lubrication, significant closure or narrowing of the formed vaginal canal, dryness, and the pain that can get worse or generate sexual dysfunctions (dyspareunia, chronic pelvic pain, and anorgasmia)¹².

The role of physiotherapy is given through techniques aimed to treating pelvic floor dysfunctions, therapeutic proposals can be created to adapt the pelvic musculature to its new insertion and new function; guidelines and exercises for maintaining the vaginal canal, resensitization and sensory adaptation, promoting the functional increase of this new muscle insertion or aiming to minimize complaints related to the consequences of the post operative period¹².

Given the low number of male to female sex reassignment surgeries, the lack of follow-up in the post operative period, the lack of professional preparation, the lack of empathy and especially the lack of scientific production on the intervention of physiotherapy in the post operative period of sex reassignment surgery. This case study aims to verify the intervention of physiotherapy after surgery for male/female sex reassignment, thus encouraging and awakening the interest of scientific research by professionals in this population.

Result measures

Pain was measured using a one-dimensional scale, Visual analogue scale - VAS which is the most used in clinical practice according to its speed and clinical application that is easy to understand in most individuals. The VAS consists of a 10 cm long line, which starts at its scale on 0 (no pain), and at the end of its scale on 10 (maximum pain). The function is marked on the line with a point where it represents your pain. Subsequently, the distance between the beginning of the line and the marked point is measured in centimeters, obtaining a numerical classification. The higher the score, the greater the intensity of pain.

The assessment of life quality - SF36, which is composed of a multidimensional questionnaire formed by 36 items, with 8 domains (functional capacity, physical aspects, pain, general health, vitality, social aspects, emotional aspects, and mental health) with its end score obtained by calculating the Raw Scale from 0 (worst general health status) to 100 (corresponds to the best health status).

The sexual function Q-SF, is a questionnaire of easy understanding and self applied that cover in its evaluation several domains (desire, arousal, orgasm, and the irrespective psychophysical correlates) related to the woman's sexual functions. The questionnaire consists of 10 questions with answers from 0 to 5 points, being classified according to the intensity in the categories¹³.

Chart 1. Classification of the answers to the Q-SF questions according to the score

| POINTS | CATEGORIES |
|--------|--------------------------------|
| 1 | Never |
| 2 | Rarely |
| 3 | Approximately 50% of the Times |
| 4 | Most of the Times |
| 5 | Always |

Source: ABDO, 2006.

The result is obtained by adding the answers of the 10 answers, multiplying their total by two, which results in an index ranging from 0 to 100. Calculation of the end Score: sum of the scores of questions 1, 2, 3, 4, 5, 6, 8, 9 and 10 + (5 - score of question 7); multiply the result of this sum by 2¹³.

Chart 2. Final score / Result / sexual performance standard Q-SF

| POINTS | RESULT |
|-----------|------------------------|
| 82 to 100 | Good to Excellent |
| 62 to 80 | Regular to Good |
| 40 to 60 | Unfavorable to Regular |
| 0 to 20 | Null to Bad |

Source: ABDO, 2006.

The assessment of pelvic floor is performed with the individual in a gynecological position through palpation to observe the vaginal walls (sore points, muscletone, scars, etc.), and the pelvic floor muscles-PFM. Strength was assessed using the modified Oxford scale (which is a subjective scale that classifies the degree of muscle strength of the PFM according to voluntary contraction), through the PERFECT scheme (a scale that evaluates muscle contraction, its intensity, time of sustain, number of repetitions of sustained contractions and how many quick contractions you can perform).

Chart 3. PERFECT scheme for subjective functional assessment of the adapted pelvic floor

| | | |
|------------------------------------|--|--|
| P = Power | It is evaluated by maximum voluntary contraction and graded using the Modified Oxford Scale on a scale of 0 to 5. | |
| | DEGREE | DEFINITION |
| | 0 | Lack of muscular response |
| | 1 | Flicker of non-sustained contraction |
| | 2 | Presence of low intensity contraction, but that doesn't sustains |
| | 3 | Medium contraction, felt like an increase in intravaginal pressure, compressing the fingers of the examiner with small cranial elevation of the vaginal wall |
| | 4 | Satisfactory contraction, compressing the fingers of the examiner, with elevation of the vaginal wall toward the pubic symphysis. |
| | 5 | Strong contraction, firm compression of the examiner's fingers with a positive movement toward the pubic symphysis |
| E = Endurance (maintenance) | Maintenance of contraction: corresponds to the time, in seconds, with the voluntary maintained and sustained contraction, result of slow muscle fibers. Record the time reached (at most 10s) | |
| R = Repetitions | Repetition of maintained contractions: corresponds to the number of contractions with satisfactory support, after a period of rest between them. The number without compromising the intensity is recorded (at most ten repetitions) | |
| F = Fast | Number of rapid contractions: corresponds to the measure of contractility of fast muscle fibers determined after 2 minutes of rest. The number of rapid contractions of 1s is noted, without compromising the intensity. (at most 10s) | |
| E = Every (many) | Monitoring of progress by timing contractions. | |
| C = Contractions | | |
| T = Timed | | |

Source; Bo andLarsen, 1990.

Treatment devices

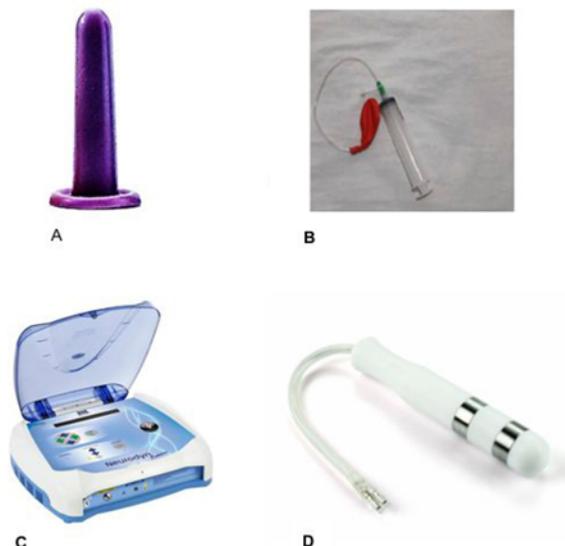
The following instruments were used for the treatment: Absoloo Vaginal Dilator: 2.5 cm in diameter; length: 10.9cm; weight: 0.57g; material; Abs and Silicone. (image 1) Handmade cuff: a syringe that has a No. 14 enteral probe attached to a balloon in its nozzle (image 1), and transvaginal electrotherapy with the IBRAMED Neurodyn Evolution model N54 (image 1), which has an Ibramed intracavitary tube: model: Vaginal tube; material: Teflon; shape: cylindrical; dimensions: 21.0 cm x 2.5 cm x 2.5 cm (L x W x H) for individual use, composed by two metal plates (image 1), in which a layer of water-soluble gel was placed to conduct the current and then the electrode was introduced into the vaginal canal by the researcher.

A conduction of the rectangular balanced symmetrical biphasic pulsed current was carried out; non-polar, at the motor level. frequency (F) = 30Hz, Pulse width (T) = 450us, Rise time = 1, descend time = 1, ON = 4s, OFF = 4s, stimulation time = 20 minutes, for tonic fibers.

The amplitude of the current was increased according to the patient's sensation, in which it was reported verbally by the patient, starting at 13mA and ending at 40mA. At the end of each session, the intracavitary electrode was cleaned with antibacterial soap and subsequently stored in a ziplock bag.

Electrotherapy was used from the first to the last session, associated with simultaneous contraction between the patient. The cuff was only used in the 2nd and 3rd sessions to teach and train PFM contraction. The dilator started to be used from the 4th session.

Figure 1. Treatment devices. (A: Absuolo Vaginal Dilator; B: Handmade cuff; C: Neurodyn Evolution; D: Vaginal Tube)



Case description

This study was carried out following the ethical standards of the National Health Council regarding research involving human beings provided for in Resolution 466/2012, of December 12th, 2012. It was approved by the Ethics and Research Committee of Faculdade Estácio - FAL, under opinion number 2,752,542, CAEE 91940018.7.0000.5012 on 07/03/2018.

The sample consisted of a 48 year-old transsexual woman, bisexual, brown, 5.5ft in height and 141lb, high school graduated, divorced, born in Rio de Janeiro / RJ and from Rio Largo / AL, Military in reserve duty, without complaints, only reported that the gynecologist said that the vagina was atrophied. In 2003 he performed SRS in the state of São Paulo, whose surgical technique was orchidectomy. During the post operative period, she used a vibrator for three months with the aim of not closing the vaginal canal or reducing the length, after that period she reported that she made extreme physical effort when lifting a plant pot feeling the laceration in the surgery area, however, he didn't go to the doctor or perform a secondary procedure. Also, ratifies that hasn't gone to the gynecologist for more than 1 year and that hadn't had sexual relations or vaginal penetration for months.

After being informed of the study, and the contribution of physiotherapy in the rehabilitation of pelvic floor dysfunctions, she accepted to take part in the research and signed the Free and Informed Consent Term, being referred to the Clinic School of Estácio's College of Alagoas, in the city of Maceió / AL, which offered appropriate resources for the development of the research from September to November 2018.

The variables evaluated in this case report were: pain, sexual function, and muscle strength of the pelvic floor and life quality. Initially, she presented: VAS 2, QS-F 58. In the initial physical examination of the pelvic floor, the patient presented: anovular distance of 3 cm, anocutaneous reflex present, absence of scarring, vaginal dryness, vaginal stenosis, lack of perineal consciousness, contraction of the pelvic floor muscles with the use of accessory muscles (abdominal, adductors, and gluteal) and apnea. Regarding to the evaluation of the pelvic floor muscles, it presented an initial PERFECT of 2/4/5/10. He didn't present any sexual dysfunction (anorgasmia, vaginismus, dyspareunia). After the evaluation and explanation of the vaginal stenosis found, the patient said that felt pain on the last sexual relations and that couldn't have a deeper penetration. The evaluations were carried out by a researcher who works in the field of physiotherapy of women's health.

According to this evaluation and diagnosis of vaginal stenosis and muscle weakness of the pelvic floor, the patient's goal/expectation was to have a functional vagina, therefore, a protocol of ten intervention sessions was proposed, with two sessions per week with electro stimulation and kinesiotherapy, and dilation through vaginal dilators. However, the patient attended 8 sessions out of 10 proposals, due to her time, the sessions were held once a week, lasting 40 min each, focusing on vaginal stenosis due to the patient's objective.

On the first session, an interview for collecting patient's data, anamnesis, pain evaluation using the visual analogue scale (VAS), life quality by SF-36, and sexual function by QS-F were made. Afterwards, a physical examination was performed with the patient in a gynecological position, to observe the vaginal walls, tender points, muscle tone, atrophy, scars, and the strength of the PFM (measured using the modified Oxford scale, following the PERFECT scheme), the middle and index fingers were introduced into the vaginal introitus doing palpation. To measure the contraction force of the pelvic floor muscles, the examiner's fingers were prone positioned and abducted, asking the participant for a voluntary contraction of the pelvic floor muscles, and the use of accessory muscles (gluteal, abdominal, and thigh adductors) was also assessed during the contraction.

In the second session, the PFM contraction training started with the patient in the supine position: breathing exercises; cuff with 40 ml of iced water asking the patient to contract at the command of the examiner, and electro stimulation associated with the patient's contraction. Due to the length of the patient's vaginal canal being reduced, the vaginal tube was expelled, requiring the therapist to hold it until the end of the electro stimulation (image 3).

The third session continued the PFM contraction training.

In the fourth session, vaginal stretching was started through the dilator, within 15 minutes. The exercises were started with a mold measuring 21.0 cm of length and 2.5 cm of diameter, with only 5.0 cm being introduced, which was supported by the patient. Initially, the sides of the vaginal wall were elongated for 1 (one) minute each side, afterward, the dilator was inserted exerting a cranial pressure in the vaginal introitus until the point of discomfort without pain, after that it was retracted 2 cm, and then completely inserted until supported by the patient. This movement was done for 1 minute, with a 1 (one) minute rest until everything started again. The dimensions of the molds progressed successfully, according to the evolution of the vaginal tunnel. The patient was instructed to do the stretching at home once a day for 15 minutes.

In the fifth and sixth sessions, vaginal stretching was repeated, and afterward the dilator was placed in the vaginal canal, exerting cranial pressure in the vaginal opening to the point of discomfort without pain. The pressure was maintained for 20 minutes without making movements.

From the sixth session, the patient was instructed to sleep with the dilator daily, with the help of a micropore tape (antiallergic) to keep the dilator inside the vaginal canal. Starting with the 10.09 cm long and 2.5 cm in diameter.

In the 7th and 8th sessions, the conduct remained the same as in the 5th session and the orientation to use the dilator during the night sleep period.

The program lasted a total of eight weeks and the patient didn't report any discomfort or difficulty using the device. At the end of the program, all variables, described in Table 2, were evaluated again.

Result

The treatment program proposed to treat vaginal stenosis conservatively through vaginal dilators for a total of 8 weeks / 8 sessions obtained satisfactory results, which can be seen in Table 1.

Table 1. Data related to vaginal length before and after treatment

| Table 1: SESSIONS | BEFORE | AFTER |
|-------------------|--------|---------|
| 4th Session | 5 cm | 6.0 cm |
| 5th Session | 5 cm | 7.7 cm |
| 6th Session | 5.5 cm | 10.9 cm |
| 7th Session | 5 cm | 10.9 cm |
| 8th Session | 5.8 cm | 10.9 cm |

Table 1 shows all measurements of the patient's vaginal canal length. Measurements were performed before and at the end of the session using a vaginal dilator. The dilator was inserted until a resistance was found, after that it was removed and measured using a measuring tape.

We can see that before the sessions, the length of the vaginal canal is 5 cm, and that only in the 6th and 8th sessions can we see a change in values before the physical therapy conduct. This increase was due to home exercises performed by the patient. Therefore, on the week in which the patient performed the exercises, there was a distensibility in the length of the vaginal canal. Then, with the eight sessions, the values of 5.0 cm and 10.9 cm were obtained as an initial and final response, an increase of 5.9cm. However, these values do not show a satisfactory evolution since these values are verified during the session using vaginal dilators.

Figure 2. Measurement of the depth of the vaginal canal. (A: Initial Depth 5cm; B: During the treatment 7.7cm; C: End depth 10.9cm)

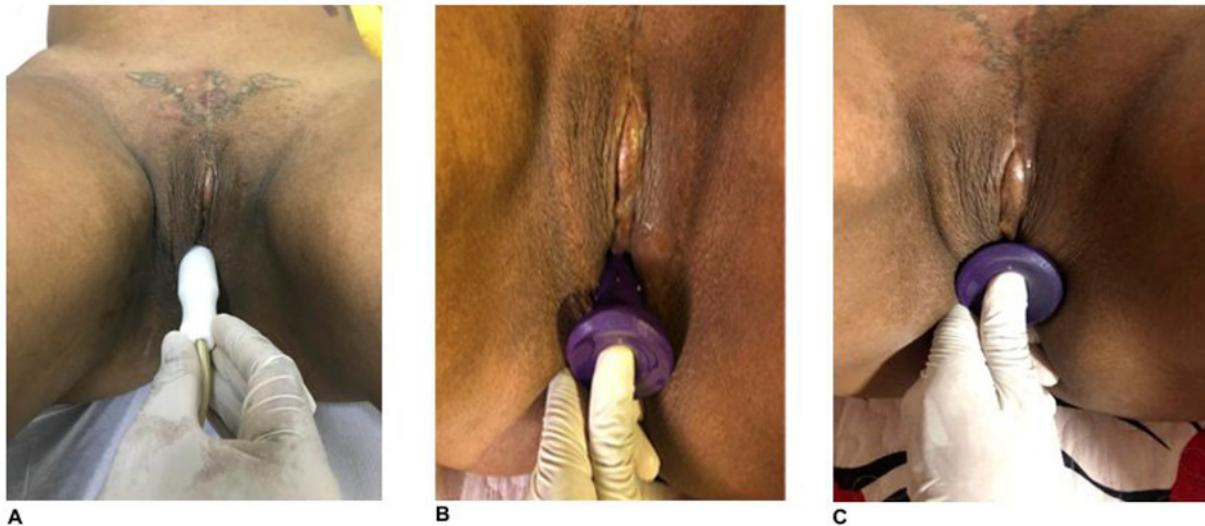


Table 2. Initial and End Variables

| RESEARCH DATA COLLECTION | INITIAL | END |
|--------------------------|-----------|----------------|
| EVE | 2 | 0 |
| QS-F | 58 | Sexual absence |
| PERFECT | 2/4/5/1/0 | 2/4/5/1/0 |

During the exercises, it was identified that the pain was related when the patient attempted deeper sexual penetration. During vaginal dilation exercises, the patient reported discomfort/pain, which was tolerated by her, and was relieved after the exercises. The pain was measured according to VAS with the result of 2. At the end of the program, the patient had a total decrease in pain (table 2), due to an increase in vaginal length (table 1).

Regarding the assessment of the patient's sexual function, a fundamental aspect of the present study, which is assessed using the QS-F, was initially obtained with a score of 58 points (Table 2), which according to the Sexual Function Questionnaire itself means good to excellent. However, in the end, evaluation, the questionnaire was not applied at the end of the treatment due to the patient's sexual inactivity for more than 6 months, specially during the treatment program (table 2).

As for the assessment of quality of life (Table 3), the components of the SF-36 questionnaire are assessed using scores ranging from 0 to 100, in which 0 is the worst state and 100 the best. After treatment, we observed indexes that indicate improvement, especially related to social aspects and general health status, which reached 100%, the domains "emotional aspects" and "physical aspects" remained with maximum score both at the beginning and at the end of the treatment of the SF-36. Another aspect that we can observe improvement was the pain, there was a decrease in relation to the pre-treatment, whose the initial score for the item reached 61%, with a reduction of 11% compared to the pre-treatment. However, there was a decrease in the patient's vitality (-30%) and mental health (-8%) scores.

In the present study, there were no side effects in relation to the resources used.

Table 3. Data related to the quality of life before and after treatment

| Items | Pre-Treatment (%) | Post-Treatment (%) |
|-----------------------|-------------------|--------------------|
| Functional capacity | 85 | 90 |
| Physical aspects | 100 | 100 |
| Pain | 72 | 61 |
| General health status | 52 | 100 |
| Vitality | 85 | 55 |
| Social aspects | 88 | 100 |
| Emotional aspects | 100 | 100 |
| Mental health | 68 | 60 |

Discussion

The levels of evidence referring to SRS are very low, however the surgical complications in this type of intervention are numerous and very frequent, being well described in the studies carried out by Franco et al.⁷ Krege⁵. Chaudhary¹⁴. in which they state that among the late complications related to sexual reassignment surgery, those related to the genital region, the urinary tract, gastrointestinal events, healing disorders, and nonspecific events stand out, with vaginal stenosis being the most common. This way according to the study carried out by Neto et al.¹⁰ in which he found that loss of vaginal length was found in 25 cases that correspond to 8% and that women were asked to go through a new surgical intervention.

Silva et al.¹⁹ consider vaginal stenosis as the narrowing and/or shortening of the vaginal canal, interfering with the use of tampons, sexual function, gynecological/physical examination. Deans et al.²⁰ assert that a neovagina must have an adequate diameter and length to allow penetration, Neto et al.¹⁰ Chaudhary et al.¹⁴ ensures that this length is around 12-14cm.

In the present study, it was found that the patient had difficulty in contracting the pelvic floor with the verbal command of the physiotherapist, even though she was encouraged ("c'mon you can do it", "that's it", "contract, keep the contraction, relax", "breathe", "Pull the anus upwards", "contract as if you were going to hold a fart"), with this, it is necessary to use the cuff and electrotherapy to help the patient learn to contract the PFM.

Denton and Maher.¹⁷ claim that it is relatively common to find women who do not know how to contract the pelvic floor muscles, both young and adults, are unable to do so spontaneously due to the lack of synesthetic awareness in this region. Moreno¹⁸ states that within the resources of physiotherapy there is electrotherapy, which is an important component for strengthening PFM and also as a stimulus to awaken body awareness of the correct way to contract, a function that is often used during the evaluation, especially in women who are unable to contract these muscles by verbal command and guidance from the physiotherapist.

According to a study by Piassarolli et al.¹⁵ Assessing the effect of pelvic floor muscle training (kinesiotherapy) in 26 women diagnosed with sexual dysfunction, excitement, orgasm, and dyspareunia, who underwent ten sessions (once or twice a week, lasting 50 minutes), being evaluated before treatment, after five sessions and at the end of treatment by evaluated by vaginal digital palpation, palpation (evaluation of muscle strength using the PERFECT scheme), intravaginal electromyography, and assessment of sexual life quality using the female sexual function index. The study concluded that the pelvic floor muscle training improves muscle strength (69% of women scored 4 or 5 at the final assessment), and total improvement in sexual complaints. So it was possible to obtain through PFM training an improvement in sexual function, in PFM strength.

Although it isn't possible to obtain studies in the literature that shows or reports the role of Physiotherapy in an immediate or late way in rehabilitation after male/ female sex reassignment surgery, so few studies that describe or evaluates the physical, social and emotional aspects after the surgical process. Franco et al.⁷ Freitas et al.¹² Corroborate that there are several complications associated with these procedures that are similar to those currently treated by physiotherapy in a satisfactory way.

The proposed therapy to treat vaginal stenosis was conservatively through the use of vaginal dilators, the purpose of which is to treat vaginal stenosis by creating an anatomical and functional vagina that provides an active sex life and satisfactory psychological well-being, through progressive stretching and dilation of the canal. This method was used in other studies by Piazza²¹. Chaudhary et al.¹⁴ and Gupta²². In which ratifies that the Frank method (a method used to treat vaginal stenosis conservatively, which consists of performing daily exercises through dilators associated with compressive and dilating maneuvers on the vaginal opening for at least 15 minutes, between one and three times daily, thus producing progressive pressure and increasing the flexibility of the vaginal wall allowing it to increase in length and width) it is effective to treat vaginal stenosis, gaining length and diameter through the dilators, these are progressively increased, being possible in a few weeks to obtain a vagina deep enough for the patient to activate her sexual life.

Carvalho et al.² evaluated in their study that 7 patients (25%) evolved with early neovagina stenosis attributed to the inappropriate use of vaginal mold in the initial post operative period, 6 of them were submitted to a new surgical intervention and one patient chose not to undergo the intervention, and in the first 4 months, a patient lost continuity on the post operative period, evolving a shortening of the neovagina (3.0 cm) and dyspareunia, being instructed to perform pressure exercises with the dilators by the Frank method. Also according to Marin et al.²³ analyzed ten women who underwent treatment with dilators by the Frank technique, and confirms the effectiveness of the dilation technique in vaginal stenosis, obtaining a result of initial length of 2.4 ± 2.0 cm, and after treatment with 6.9 ± 1.1 cm, $p < 0.0001$.

Corroborating even more with the benefits of physiotherapy and the effectiveness of the dilation technique using vaginal dilators in vaginal stenosis, a systematic review carried out by Denton and Maher.¹⁶ on interventions performed by physiotherapists, in vaginal stenosis, after pelvic radiotherapy in the treatment of cervical cancer, the benefits of two techniques applied by physiotherapists (dilators and manual therapy, specifically digital pressure) were found, the authors state that the dilation technique twice a day for four to eight weeks promotes the reduction of stenosis, facilitating the return of women to their sexual activities, thus improving their self-esteem and self-confidence.

In the present study, the volunteer was informed about the importance of performing stretching exercises at home on the neovagina and the use of dilators during the night sleep period for good progress and results, as well as the importance of being motivated and enthusiastic for a good technical progress.

However, although it is always being remembered, guided and followed personally and by WhatsApp about the importance of dilation exercises to keep the vagina functional, to perform home exercises, if you had doubts about performing home exercises, if you were performing home exercises or was performed on the day, the same due to her daily activities (work, children, and housework) reported that didn't perform the exercises daily because she was out of time, tired to carry out the activities in

addition to the physiotherapeutic treatments and that she sometimes forgot to perform the home exercises, with this, only performed stretching and dilation exercises for only 2 days lasting 20 minutes due to forgetfulness and lack of time. The use of the dilator to sleep was used only on the days that the medical assistance was performed (starting from the sixth session) since she had no one to put the dilator on to sleep during the week, and she was trained to put the dilator on.

The volunteer was also referred to a psychologist for better monitoring and understanding for the treatment adherence (if she was doing it on her will, if it was for her partner, etc.) Due to the results of the technique it is also associated with the patient's commitment and dedication. She reported that it was not necessary and that she wouldn't be available to go to medical check.

Fisher et al.²⁴ Corroborates that this non-adherence may be related to three main factors: information, motivation, and behavior. In a study conducted by Bakker et al.²⁵ evaluating quantitative reports regarding the determinants of patients regarding the use of vaginal dilators after pelvic radiotherapy, two recent studies seek to solve the barriers to the use of the dilator. In a study of 30 women, in which they recommended the use of vaginal dilators, patients report lack of time or privacy, forgetfulness or fatigue as reasons for non-adherence, also negative emotions, whether due to the rigid plastic design of the dilator, anticipated fear of pain, were determiners for the use.

Gupta²² states that the treatment of neovagina stenosis can be administered by the patient when it is correctly oriented, however the positive result of the technique will depend on the patient's motivation to perform the proposed activities, and that about 90-96% of the patients achieved the anatomical and functional success due to vaginal dilation. Vaginal length will only be maintained/increased if the individual continues dilatation at home or has sexual intercourse at least twice a week with penetration into the neovagina, if the dilation is stopped, it will not be hurt in a sexual intercourse, but may need to resume dilation before sexual activity in the future.

There is a lack of studies in the literature that assess the life quality of people who have undergone sexual reassignment surgery, both pre and post-treatment, however, we know that this process is something expected by many transsexuals, in which many feel repudiation for their organ biological genital, thus interfering in their physical, mental health and interpersonal relationships.

The strong expectation and anxiety regarding SRS ends up interfering in the patient's life quality, either positively or negatively, however, the surgery can present complications (during the surgical actor in the post operative period), in which other interventions are necessary surgical or physiotherapeutic treatment, thus breaking with the patient's expectations and hurting their life quality. Neto et al.¹⁰ affirms that the post-surgical repercussions hurt the mental and sexual health of transsexuals.

Therefore, it is necessary for health professionals and researchers to provide a humanized service, with qualified auscultation for the expectations of these patients, thus, giving them explanations about the surgery, possible complications and offering help to provide an even better follow-up in the post surgery, evaluating the life quality of these patients both before and after surgery.

Because of our results, we can observe that there was a 48% improvement in the patient's general health status, with this, we can conclude that the sexual function is far beyond the functional being necessary to always evaluate all physical, social and mental aspects.

Another aspect observed was the pain reported by the patient during sexual intercourse, this happened when the partner tried a deeper penetration, the same happened during the dilation exercises, as the patient made progress, she reported discomfort, but according to her it was a bearable pain (VAS 2) and that wasn't even close to the pain caused by the partner.

At the end of the treatment, the patient reported being overjoyed, excited and motivated with the possibility of having a functional and active vagina again, and

that she would always try to make time for her to go to the gynecologist and perform the exercises, since she won the kit with dilators. The patient was once again informed about the need and importance of carrying out the exercises daily and oriented on how to perform them and that we would be available for any questions.

I also emphasize the importance of carrying out studies that assess the association between the use of dilators, vaginal length, and sexual function, hinder an even more robust discourse.

The study has limitations such as the fact that it is a case report, in which it is not possible to exclude some existing confounding variables. Another limitation is that an imaging exam, for example: magnetic resonance imaging, could be used to accurately assess the depth\anatomical length of the patient's vaginal canal. The patient's lack of time to perform home exercises was another limitation found, as it could be observed more precisely if the gains would be maintained.

This case study corroborates that physical therapy can and should act in the post operative period of SRS. Since the physiotherapist through his techniques and resources makes use of the vaginal, electrostimulation, behavioral therapy in other pathologies similar to complications of SRS. The present study brings good results on the treatment of vaginal stenosis with the use of progressive dilation, obtaining a 5.9cm distensibility in the vaginal length.

Conclusion

This case study shows clinical improvement and compensation for possible late post-SRS complications. Despite the positive results of the study, showing that physiotherapy through its resources can act positively in these complications, further studies on physiotherapy in this population are needed, ensuring assistance and adequate monitoring during this process, reducing its possible late complications.

Author contributions

Both authors contributed equally to all stages of this report.

Competing interests

No financial, legal or political competing interests with third parties (government, commercial, private foundation, etc.) were disclosed for any aspect of the submitted work (including but not limited to grants, data monitoring board, study design, manuscript preparation, statistical analysis, etc.).

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