

Effect of Invasive Pelvic Floor Management in Vaginismus among Reproductive Aged Females-A Case Study

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Abstract. Vaginismus is defined as condition which leads to involuntary vaginal muscle spasm leading to painful sexual intercourse. It is also classified as sexual pain disorder. It is one of the most common conditions prevalent among females who experience pain during vaginal intercourse leading to sexual pain disorder. The main objective of the study was to rule out the effectiveness of intra-vaginal management on patient with Vaginismus. Vaginismus is a sexual pain disorder in which female have difficulties in vaginal penetration during sexual intercourse due to number of reasons such as fear, involuntary muscle contraction, sexual abuse and pelvic pain etc. As per studies, it had been showed that vaginismus is also one of the main reasons behind Infertility among many females. Most of the females in North India are not aware regarding the pelvic floor examination or to consult the pelvic floor practitioner for their problems related to Infertility. In many cases, as per studies we had founded that most of the females are being focused to go for number of testing procedures but they are not being guided to undergo pelvic floor examination.

Keywords: Vaginismus, Infertility, Pelvic floor muscles, Invasive manual therapy, Intra-vaginal, Intercourse.

1 Introduction

Vaginismus is classified as sexual pain disorder. It is one of the most common conditions prevalent among females who experience pain during vaginal intercourse leading to sexual pain disorder. In medical terms it is defined as condition which leads to involuntary vaginal muscle spasm leading to painful sexual intercourse. Due to the above mentioned chief complaints by patient it leads to easy diagnose as well as treatment. As per literature, there are very few studies which supports that this condition is easy to diagnose as well as treat, as many patients hesitate to explain clear cut chief complaints to doctors, which lead to delays in diagnosis of this condition.

As per research data, there is no epidemiological study giving true value of prevalence of vaginismus. As many authors have mentioned that, the invasive pelvic floor examination is a stressful examination procedure which most of the patients try to avoid. As per different researchers the prevalence rate is different among most (1). Acc to Masters and Johnsons they concluded that vaginismus is an infrequent condition (2, 3). While other authors claimed that this is one of the most frequently occurring female psychosexual dysfunction (4, 5, 6, 7). As per studies 5-17% prevalence rate has been reported in clinical setting but overall population prevalence rate is not known (8). In one of the study by British's named Ogden and Ward they explained that most of the females who suffer from this condition mostly consult general practitioners for their problem but their followers reported the opposite result for the same (9). So, as per literature most of the women generally avoid seeking help for the problem. So, as per one study one one-third females really contact consultants for the problem (10). As per many patients, they feel hesitation, embarrassment and discomfort to discuss about their complaints with consultants which is one of the major reason for non-availability of help among patients.

There are many reasons behind this condition such as tight pelvic floor muscles, psychological problems, anxiety, sexual abuse etc. The diagnosis of this condition is quiet tough as it is very quiet challengeable to rule it out through various diagnostic techniques. So, that's why most of the pelvic floor rehabilitation expert tries to go for manual examination to rule out the condition. For manual examination instead of oxford grading Het's MMT grading is being used for pelvic floor muscles (As oxford grading gives the finding of only contraction stage but Het's MMT grading gives us grading for contraction as well as relaxation stage. Hets manual muscle testing grading 16 is being described as:-

Grade 0 -for baseline tone

Contraction Phase: - Grade 1-Mild contraction (from any side)

Grade 2-Grip with complete circumference

Grade 3-Strong upward and inward pull against resistance

Relaxation Phase: - Grade 1-Inability to penetrate

Grade 2-Symptomatic penetration

Grade 3-Asymptomatic penetration (easy penetration)

There are various therapies has been proposed for this condition such desensitization ,sex therapy but according to the studies and clinical management, Internal manual therapy techniques were found to be most effective, followed by patient education, dilatation exercises, and home exercises. Various Instruments also helps in the invasive management of this condition. Compared to the invasive and non-invasive treatment, Invasive treatment of pelvic floor muscles is considered to be more effective to overcome this problem (11).

2Case Description

A 35-year-old Punjabi female weighing 75 kg with height 5, 3", working as bank employer consulted female gynecologist for her primary infertility problem. As per female she has been married five years ago with no history of fertility till date after marriage. After complete history taking and examination gynaecologist advised her to undergo abdominal ultrasound. Female underwent abdominal ultrasound, with no abnormality in her reports .Again complete assessment of female was being taken and she was suggested to go for follicular study as advised. She went for the same also but again there was no sign of any positivity. Thereafter, after nearly eight months gynecologist advised her to meet pelvic floor rehabilitation expert.

As suggested by gynaecologist, patient went to local female pelvic floor rehab practitioner. As per pelvic floor rehab specialist before any type of Investigation and Intervention the complete assessment of the patient has to be taken and after that some Intervention to be suggested to the patient as per diagnosis. Acc. to the patient she was married from last five years .Patient stated that there is no history of alcoholism, smoking or any other addiction. She is totally vegetarian .Her main concern was that she is not having pregnancy from last five years .As per patient she had never taken contraceptive pills to avoid pregnancy .She is a regular Yoga practitioner and regularly in habit of evening walk . She takes a lot of concern to manage balanced diet. In which she put lot of concern to take fiber intake and liquid intake. In regard to her sexual life, she stated that most of the time she is having painful vaginal intercourse. Due to which many times she start having low back pain too. All this makes her feels low, depressed, weak, stressful, anxious and very negative also. It is very challengeable for her to answer and face her family members when they discuss with her regarding her pregnancy. Along with this patient stated that her husband too has gone up with all test for himself to rule out the infertility problem in him too. But there was no any sign of Infertility among this husband as per reports. As per history of past illness patient was apparently well before her marriage with no gynecological problems. She had her menarche at age of 15 years and after that she used to have regular menstrual cycle of 3days after exactly 28 days. She never had Amenorrhea problem. As per patient before her marriage she had never indulge in any type of commitment or sexual act. After marriage she started having the fear of vaginal Intercourse as she was not mentally well prepared for the same. Acc.to the patient before her marriage some of her friends had discussed with her regarding the experience of having first time vaginal Intercourse .Most of them reported bad experience leading to pain in pelvic as well as in vagina which was set in the mind of the patient. Patient was not having any medical and surgical history. But sometime she suffer from dysmenorrhea problem for which sometime she consult the gynecologist as she was not able to bear the pain. Two to three times she was being advised abdominal ultrasound in which no dysfunction or abnormality was seen as patient was doubtful of having ovarian cyst or nabothian cyst. In context to personal history of patient, she is vegetarian and very conscious of her diet plan. She was not having any type of family history of Infertility. She is not having any history of any type of drug intake as well as any prior hospitalization too.

On observation, built of the patient was mesomorphic. Posture was normal as per assessment from anterior view, posterior view and lateral view. Gait was also normal with normal stride length, step length and cadence. There was no deformity in upper limb, lower limb and spine as per observation. Vitals of the patient were assessed before pelvic floor examination. In which we had checked BP, RR and temperature .All the vitals were normal during the time of assessment. The blood pressure reading was 120/70 mm Hg. The Respiratory rate was 18 breathes/minute and temperature was 97.5degree F.

After this **perineal observation** was performed. For which patient lies in crook lying position on examination couch, exposing the perineal region. The pelvic floor practitioner stands next to the examination couch wearing surgical gloves by sanitizing the hands .For perineal observation and examination proper privacy of the patient was being maintained .For which observation as well as examination was done in a proper privacy examination room with curtains ,no cctv camera and

male staff. After this perineal observation was assessed. In which we checked for the presence of any scar which was not present, scar at perineal body was also not present. Skin conditions was also normal, no extrusion, no protrusion, no bulge with presence of anus winks. Patient was able to draw perineal body up and in. (12)

Examination was done with the help of four techniques i.e. Self-examination-Hets self-test Finger test and Trans-Vaginal Examination. (13) At the start of examination; we explained the full procedure of Trans-vaginal examination to patient so that she can cooperate with us. But before the procedure was to be performed, patient got scared. So, to overcome her fear, she was first being advised to perform self-examination and after that Trans-vaginal examination was being performed.

For **self-examination** patient was being advised to lie down and maintain her privacy as well. Then she was being advised to bend her hip and knees and remove her trouser. After this she was being advised to sanitize her right hand completely and then insert her finger inside her vagina. Then she was being told to try to feel inside the vagina and squeeze her pelvic floor muscles as she is trying to hold urine. Then she was being advised to report the findings as per Hets MMT scale. As per patient she stated grade 2 of relaxation stage (Grade 2 defines she was able to penetrate only one finger inside her vagina which too was very painful and discomfort for patient) and Grade 1 of contraction stage which states Mild contraction (from any side). After self-examination when patient gained some confidence, pelvic floor specialist took the permission to perform Transvaginal examination. After the consent of patient the procedure was being carried by the specialist.

For **Trans-vaginal examination**, patient lie down on couch, while exposing the pelvic region. Patient was being advised to bend her hip and knees. After this pelvic floor specialist sanitize the hands and wore the surgical gloves on right hand. To carry out the examination gently and smoothly specialist lubricated the gloves with the help of ultrasonic gel and then insert her first one finger inside the vagina to examine inside and after one finger she tries to insert two fingers but patient didn't allow for same as she stated feeling discomfort and pain. So, the procedure was stopped after insertion of one finger. As per pelvic floor expert she reported Grade 1 of contraction state and Grade 2 of relaxation state. So, at last it was concluded that patient as well as expert came up with the same findings.

Pain evaluation was also done as per response from patient based on her last experience of having sexual Intercourse. Acc. to patient she was having dull pain around the vagina region and inside the vagina which was continuous in nature. Pain was on both sides i.e. on right as well as left side. Patient reported she was having continuous pain for atleast two hours after sexual Intercourse. Aggravating factors were pain during sexual Intercourse and she gets relieved by taking pain killers and rest. On numerical pain rating scale patient reported she usually has pain with intensity nine during sexual intercourse and after two hours score is five and after that slowly slowly with time pain disappears.

After pain evaluation, sensory examination around perineal region was done with the help of cotton ball. In which we examined only superficial sensation around the perineal region, in which we assessed touch, temperature, pain and pressure. As per examination all superficial sensations were Intact. Touch was assessed by instructing the patient to close their eyes. Then practitioner touches the perianal region and ask for the placement which was Intact. To assess temperature two test tubes were taken. One test tube was filled with luke warm water and other with cold water. Then one by one both tubes were placed around the perineal region to test the sensation. As per assessment temperature were also intact. Pain was assessed by pinching around the perineal region which was also intact. Pressure was assessed with the help of cotton balls around perineal region which too was Intact. Deep and cortical sensation was not assessed.

After this patient was advised to go for Trans-abdominal ultrasound. In which no underlying pathology was ruled out such as presence of any nabothian cyst, PCOD or any other pathology. Based on history taking, observation, examination we diagnosed that patient is suffering from vaginismus problem. So, after diagnosis Intervention for the same was planned as per patient requirement.

3Intervention:- Two month of Intervention was advised to patient in which patient has to visit the pelvic floor specialist at her clinic five times a week. So, total of 20 sessions of treatment in a month was advised to the patient. Total 40 sessions of treatment was given in three stages. Stage 1; Stage 2 and Stage 3. Stage 1 consist of first three weeks. Stage 2 consists of next three weeks and Stage 3 consists of last two weeks. After all the three stages of treatment patient will undergo examination of pelvic floor musculature to rule out the changes. Before the start of Intervention the main focus was on patient education, so that patient can understand her problem and will fully cooperate in the invasive treatment. So, for this she was being educated with the help of model of pelvic bone regarding the procedure of treatment. Along with this the family members especially the male partner of female was being educated for the same.

Wow Vagina-Dilate Treatment was implemented in three Phases. Phase A, Phase B and Phase C. Phase A-Beginners Phase: - In this phase vaginal dilator with minimal width was chosen and lubricated with ultrasonic gel. Then it was inserted inside the vagina of the female and gentle to and fro motions with that was performed with 15-20 repetitions. Phase B-

Intermediate Phase:- In this phase vaginal dilator with minimum to moderate width was selected and inserted inside the vagina and gentle to and fro motions was performed with 15-20 repetitions. Phase C-Functional Phase: - In this phase vaginal dilator with maximum width was lubricated and inserted inside the vagina. Along with this thrusting activities was being performed with the dilator with 15-20 repetitions.(14)

Stage 1:- For first three week of Intervention cryotherapy, vulvular ultrasound and wow vaginal dilate treatment phase A was implemented for treatment.

Position of patient was crook lying position .We started the treated with the cryotherapy in which frozen peas were filled in the condom and then ultrasonic gel was applied over the same .After that it was inserted into the vagina of the female to provide coolant effect in the vagina to decrease the effect of spasm of pelvic floor muscles.Cryotherapy was being advised for atleast 10 to 15 minutes to patient. Then after fifteen minutes it was being removed and disposed.

After cryotherapy, we gave vulvar ultrasound on the perineal region. The method of application for vulvular ultrasound was glove filled with normal water was kept over the vulvular region of female and then ultrasound was applied over the same in continuous mode with 1.5 w/cm2 for 3 minutes. After cryotherapy and vulvular ultrasound, wow vagina-Dilate treatment was implemented on the patient with Phase A. This Intervention continues for three weeks.

Along with the above mentioned treatment ,we will suggest some stretching exercises of lower limb such as Integrated Stretching Exercise-Hamstring, Integrated stretching exercise-tensor fasciae latae, Integrated stretching of Hip adductors, Happy Baby pose, Integrated deep frog stretch, Integrated half pigeon stretch, Integrated reclined bound stretch, Deep side lunge stretch etc.(15). All these exercise two times a day with 5-7 repetitions.After three weeks of Intervention patient will go for pelvic floor examination.

Table 1:- Pre and post Intervention Hets manual MMT grading during stage 1.

S. No.	Stage	Before Intervention (Contraction)	Before Intervention (Contraction)	After Intervention (Contraction)	After Intervention (Contraction)
1	1	1	2	2	2

The manual examination of PFM, after stage 1 Intervention reveals that contraction grade was 2 as per Het’s grading and grade 2 for relaxation.

Stage 2:- For next three weeks patient will be given same treatment as given in stage 1 .Only with a difference that in stage 2 ,we will set Phase B for wow vaginal dilator treatment instead of Phase A.Again after three weeks of treatment in stage 2, patient will undergo pelvic floor examination.

Table 2:- Pre and post Intervention Hets manual MMT grading during stage 2.

S. No.	Stage	Before Intervention (Contraction)	Before Intervention (Contraction)	After Intervention (Contraction)	After Intervention (Contraction)
1	2	2	2	2	2

The manual examination of PFM, after stage 2 Intervention reveals that contraction grade was 2 as per Het’s grading and grade 2 for relaxation.

Stage 3:- For next two weeks patient will be given same treatment as given in stage 2 .Only with a difference that in stage 3 ,we will set Phase C for wow vaginal dilator treatment instead of Phase B. After this patient will go again go for pelvic floor examination to rule out the changes after treatment. (16-17)

Table 3:- Pre and post Intervention Hets manual MMT grading during stage 3.

S. No.	Stage	Before Intervention (Contraction)	Before Intervention (Contraction)	After Intervention (Contraction)	After Intervention (Contraction)
1	3	2	2	3	3

The manual examination of PFM, after stage 3 Intervention reveals that contraction grade was 3 as per Het's grading and grade 3 for relaxation.

Result :- The result of the Intervention was being evaluated after all the three stages of Intervention individually i.e. after Stage 1, stage 2 and stage 3 with manual Het's MMT grading system with both contraction phase as well as relaxation phase.[18]

Table 4:-Pre and Post Intervention Hets manual MMT grading

S. No.	Stages of Intervention	Before Intervention (Contraction)	Before Intervention (Relaxation)	After Intervention (Contraction)	After Intervention (Relaxation)
1	1	1	2	2	2
2	2	2	2	2	2
3	3	2	2	3	3

As per findings, before stage 1 Intervention patient was being assessed with relaxation grade 2 and contraction grade 1 as per Manual het's MMT grading system and after treatment with grade 2 for contraction and grade 2 for relaxation.[19]

Similarly, before stage 2 Intervention patients was being assessed with relaxation grade 2 and contraction grade 2 as per Manual het's MMT grading system and after treatment with grade 2 for contraction and grade 2 for relaxation.[20]

Lastly, before stage 3 Intervention patients were being assessed with relaxation grade 2 and contraction grade 2 as per Manual het's MMT grading system and after treatment with grade 3 for contraction and grade 3 for relaxation.[21]

As per our findings, the result of the treatment was significant for the patient in improving her problem for vaginismus.[22]

4Discussion: - Through this case study we had made an attempt to make females understand the importance of pelvic floor examination .Those females who have penetration problem, pain after or during sexual intercourse or problem of Infertility, by properly educating them regarding this condition. It is one attempt to make subject understand her problem and properly manage the problem of female suffering from vaginismus. We as clinicians & Pelvic floor rehab specialist, first of all must put some importance in understanding the main reason behind this condition i.e. whether this is due to fear, some sexual abuse, sexual harassment or due to some trauma. Identifying the reason behind the problem that whether patient is exactly suffering through this problem or some other underlying cause is there, will help the practitioner to proper assessment and examine the patient for her problem. It is necessary to educate the subject regarding her problem and examination procedure so that subject can fully co-operate the examiner. Along with this it is very important to explain the complete Invasive treatment procedure to subject before the start of the Intervention to seek her fully cooperation and support. Treatment will be based on electrotherapy which includes vulvular ultrasound, Invasive pelvic floor treatment via means of vaginal dilators, cryotherapy, counseling and educating the subject for the same.

5 Limitation of the study: - The follow up of patient was not taken for her pregnancy. Only treatment for vaginismus was being provided to the patient.

6 Future scope of study: - In future, more studies could be done while taking follow up of patient for her pregnancy while treating vaginismus conditions.

7 Conflict Of Interest: - Author has no conflict of Interest

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9References:-

1. Marie-Andree et al. Vaginismus: A Review of the Literature on the Classification/Diagnosis, Etiology and Treatment: Women's Health (2010) 6(5), 705–719 available on <https://journals.sagepub.com/doi/full/10.2217/WHE.10.46>
2. Masters WH, Johnson VE: Human Sexual Inadequacy. Little, Brown, Boston, USA (1970).
3. Schmidt G, Arentewicz G: Symptoms. In: The Treatment of Sexual Disorders: Concepts and Techniques of Couple Therapy. Schmidt G, Arentewicz G (Eds). Basic Books Inc., NY, USA 123–146 (1982).
4. Simons JS, Carey MP: Prevalence of sexual dysfunctions: results from a decade of research. Arch. Sex. Behav. 30, 177–219 (2001).
5. Crowley et al. Recommendations for the management of vaginismus. BASHH special interest group for sexual dysfunction. Int. J. STD AIDS 17, 14–18 (2006).
6. Kabakci and batal. Who benefits from cognitive behavioral therapy for vaginismus? J. Sex Marital Ther. 29, 277–88 (2003)
7. McGuire H, Hawton KKE: Interventions for vaginismus. Cochrane Database Syst. Rev. 2, CD001760 (2001).
8. Spector I, Carey M: Incidence and prevalence of the sexual dysfunctions: a critical review of the empirical literature. Arch. Sex. Behav. 19, 389–396 (1990).
9. Ogden J, Ward E: Help-seeking behavior in sufferers of vaginismus. Sex Marital Ther. 10(1), 23–30 (1995).
10. Shifren JL, Johannes CB, Monz BU, Russo PA, Bennett L, Rosen R: Help-seeking behavior of women with self-reported distressing sexual problems. J. Women's Health 18 (4), 461–468 (2009).
11. Hartman LM. Relationship factors and sexual dysfunction: implications for assessment and treatment. Canadian Journal of Psychiatry 1980; 25:560-3.
12. Huws R. Non-attendance at a marital and sexual difficulties clinic: a controlled intervention study. International Journal of Social Psychiatry 1992; 38:304-8
13. Mathews A, Bancro O J, Whitehead A, Hackmann A, Julier D, Bancro O J, et al. The behavioral treatment of sexual inadequacy: a comparative study. Behavior Research & Therapy 1976; 14:427-36
14. Mathews A et al. Psychological and hormonal factors in the treatment of female sexual dysfunction. Psychological Medicine 1983; 13:83-92
15. Zukerman et al. Treatment of vaginismus with the Paula Garburg sphincter muscle exercises. Harefuah 2005; 144(4):246-8.
16. Het Desai et al. Het's Manual of Pelvic Floor Rehabilitation .Book chapter Assessment of pelvic floor muscles .2020; 1st Edition: pp. 27-63
17. Wani, Atif Khurshid, et al. "Targeting apoptotic pathway of cancer cells with phytochemicals and plant-based nanomaterials." Biomolecules 13.2 (2023): 194.
18. Darwish, M.A., Trukhanov, A.V., Senatov, O.S., Morchenko, A.T., Saafan, S.A., Astapovich, K.A., Trukhanov, S.V., Trukhanova, E.L., Pilyushkin, A.A., Sombra, A.S.B. and Zhou, D., 2020. Investigation of AC-measurements of epoxy/ferrite composites. *Nanomaterials*, 10(3), p.492.
19. Bashir, S., Sharma, V., Lgaz, H., Chung, I.M., Singh, A. and Kumar, A., 2018. The inhibition action of analgin on the corrosion of mild steel in acidic medium: A combined theoretical and experimental approach. *Journal of Molecular Liquids*, 263, pp.454-462.
20. Trukhanov, A.V., Astapovich, K.A., Turchenko, V.A., Almessiere, M.A., Slimani, Y., Baykal, A., Sombra, A.S.B., Zhou, D., Jotania, R.B., Singh, C. and Zubar, T.I., 2020. Influence of the dysprosium ions on structure, magnetic characteristics and origin of the reflection losses in the Ni–Co spinels. *Journal of Alloys and Compounds*, 841, p.155667.
21. Prakash, C., Singh, S., Pruncu, C.I., Mishra, V., Królczyk, G., Pimenov, D.Y. and Pramanik, A., 2019. Surface modification of Ti-6Al-4V alloy by electrical discharge coating process using partially sintered Ti-Nb electrode. *Materials*, 12(7), p.1006.
22. Bharany, S., Sharma, S., Badotra, S., Khalaf, O.I., Alotaibi, Y., Alghamdi, S. and Alassery, F., 2021. Energy-efficient clustering scheme for flying ad-hoc networks using an optimized LEACH protocol. *Energies*, 14(19), p.6016.