

CASE STUDY**EFFECTIVENESS OF PELVIC FLOOR EXERCISES AFTER SUBTOTAL HYSTERECTOMY AND HAEMATOMETRA IN A 39-YEAR-OLD FEMALE WITH URINARY INCONTINENCE: A CASE STUDY**

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ABSTRACT

Hematometra is a rare condition that involves blood accumulation or retention in the uterus; caused by a structural obstruction of the cervical canal, which may be congenital or acquired. Amenorrhea or dysmenorrhoea in premenopausal women, pelvic pain, and urinary incontinence are common symptoms associated with this condition. In this study, a 39-year-old woman presented with a hematometra complaint associated with lower abdominal pain and urinary incontinence. After more USG and MRI studies, she underwent subtotal hysterectomy and hematometra draining, but after surgery, she started to feel pain in her left lower abdomen and urinary incontinence. The patient attended 12 days of therapy over the course of two weeks. Physical therapy including Kegel's exercises, breathing exercises, and instruction in relaxation techniques, postural advice, gait training, and a home program to training for the activity of daily living activities. The patient reported reductions in symptoms in the Pelvic Floor Impact Questionnaire (PFIQ-7) at the time of her physical therapy discharge, and was able to resume activities that she had not previously tolerated due to abdominal pain and urinary incontinence.

KEYWORDS: Hematometra, subtotal hysterectomy, urinary incontinence, kegel exercise, knack technique.

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INTRODUCTION

Hematometra is defined as a condition that involves blood accumulation or retention in the uterus.⁽¹⁾ Postoperative hematometra is estimated to occur in 1% to 2% of all women undergoing endometrial resection or ablation. It is a rare disorder most often associated with previous surgical procedures, causing genitourinary outflow tract obstruction. Hematometra commonly manifests as a cyclic, cramping pain in the lower abdomen. Urinary frequency and urinary retention are also common complaints among patients. Premenopausal women with hematometra are more likely to have irregular menstrual bleeding, such as dysmenorrhea or amenorrhea,⁽²⁾ whereas postmenopausal women are more likely to be symptomless.

Hysterectomy is one of the world's most popular procedures. Subtotal hysterectomy is a surgical procedure in which the fundus and body of the uterus are removed but leaving the cervix.⁽³⁾ When a subtotal hysterectomy is performed, women should continue to be screened for pelvic floor muscle damage and weakness. As a result, it could be a risk factor for pelvic floor dysfunction. According to Lukanovic and Drazic (2010), there were substantially higher incidences of post-operative complications, like urinary incontinence in the group who undertook hysterectomy. The risk of developing urinary incontinence increases to 60% in middle-aged women.⁽⁴⁾

According to the International Continence Society, Urinary incontinence (UI) is an involuntary loss of urine that affects 25% to 45% of women.⁽⁵⁾ Causes of UI include pelvic floor muscle weakness or injury, constipation, gynecological surgery, and pregnancy and childbirth because of pudendal nerve damage and/or trauma to the pelvic floor. Hysterectomy is also associated with UI.^{(3),(6)}

CASE DESCRIPTION

This case involves a 39-year-old female G₂P₂L₂A₀, resident of the rural village presented with complaints of Hematometra associated with lower abdominal pain which was radiating up to the vagina since 8 days; she also had urgency for urination after subtotal hysterectomy. She attained menarche at 12 years of age, had an irregular cycle of 15-20 days with dysmenorrhea and scanty flow of 2-3 days. Patient started experiencing pain over the lower-left inguinal area of the abdomen and radiating to the pubic area, which was gradual in onset, constant and dull aching with an intensity of 7/10 with activity on VAS, aggravated on activities, house and farm work. Patient had previous episodes of lower abdominal pain 4 years back for that she visited Sevagram with similar complaints where investigations such as CECT abdomen and pelvis, sonography of abdomen were done which revealed the multiple uterine fundal fibroids for that subtotal hysterectomy

was done on October 2018. After surgery, she experienced pain relief for a few days but then her pain deteriorated day after day and started urgency/ frequency for urination, so she came to AVBRH on date 22/01/2021 for the same complaints and admitted to the gynaecology department, ward unit 5A for further management.

The consulted gynaecologist advised for the USG scan and MRI. The USG scan showing an Hematometra 15cc in vaginal post surgical scale and the MRI pelvis shows a hematometric partial residual uterus. On date 29 January 2021, the patient underwent drainage of 15cc of hematometra under spinal anaesthesia, after surgery; however, she continued to have pain in her left lower abdomen and vaginal area. Physiotherapy rehabilitation was started on 31/01/2021.

CLINICAL FINDINGS

The examination was carried out after the informed consent of the patient was obtained. On general examination, the patient was awake, cooperative, and well oriented with time, place, and person and was relaxed in a supine position. During the physical examination, the vitals were stable. On observation; the general condition of the patient was mesomorphic, Scar mark of previous surgery seen over the lower abdomen. Per abdominal examination revealed tenderness in the hypogastrium and left inginal area. Pelvic examination was limited due to pain.

Timeline Surgical and PT Interventions

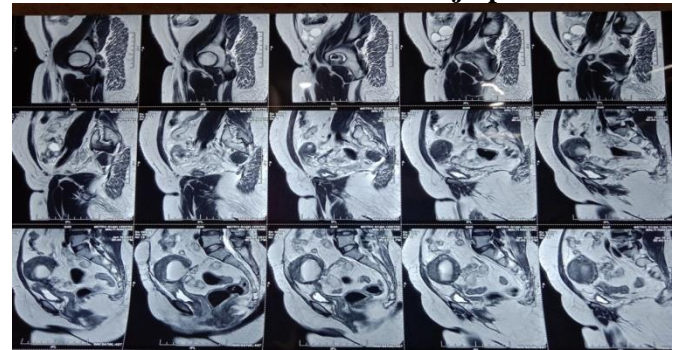
July 2002	lower section caesarean section
March 2006	lower section caesarean section
November 2007	unilateral tubal ligation
October 2018	Subtotal hysterectomy
January 2021	drainage of hematometra
January-February 2021	PT (12 visits)
February 2021	Discharge from PT

DIAGNOSTIC ASSESSMENTS

USG of the abdomen was done in which there is an irregular narrowing of the endo-cervical canal leading to Hematometra approx. 15cc in size post-operative vaginal stroma. MRI pelvis reveals well defined oblong lesion in the pelvis with an anterior wall and thinned out posterior wall and a central fluid-filled cavity may represent partial residual uterus with hematometra.

At the start of physiotherapy, the patient fill out a Pelvic Floor Impact Questionnaire - 7 which applies to assess the health-related quality of life and which is accurate and effective in evaluating the dysfunctional condition of the pelvic floor (PFD).

Pelvic floor impact questionnaire			
Patient scored	Bladder - 9.5	bowel/rectum - 0.0	vagina/pelvis- 66.7
scores ranging from 0-100 (100 indicate the highest score)			



MRI scan showing the hematometra

THERAPEUTIC INTERVENTIONS

Therapeutic measures are found to be effective to reduce the complications, to strengthen the pelvic floor muscles and improve outcomes of patient. Physiotherapy will concentrate on alleviating the symptoms from surgery and preparing the patient for speedy recovery and lessen the hospital stay.

Table 1: physiotherapy treatment protocol

Exercise protocol	Goal	Procedure	Duration and frequency
Breathing exercise	To improve the vital capacity of the lungs and to prevent respiratory complications.	Patient keep one hand on chest and other on her belly and ask to breathe in deeply through nose, hold for some seconds and slowly breathe out through the lip	10 repetitions; 3 times throughout the day
Cryotherapy	To minimize the pain of patient. Cryotherapy is more effective in reducing the pain levels	Application of ice pack over the lower abdomen	5 to 8 minutes

Pelvic bridging exercise	To strengthen the pelvic floor muscles	Patient in crook lying position and ask her to lift your hip up by squeezing your gluteus and pelvic floor muscle hard.	10-15 repetitions of 5 seconds hold, 3 times throughout the day and resting of 30-60 seconds between the sets
Kegel exercise with ankle dorsiflexion	help to strengthen the pelvic floor muscles and avoid issues like urinary incontinence	Patient in crook lying position with ankle dorsiflexion and ask her to contract her pelvis muscle, as you're trying to hold the urine.	10 repetitions of 5-10 seconds hold 3 times throughout the day
Knack technique	help to maintain and support pelvic floor	Before lift, bend, sneeze, cough and all movements, contract pelvic floor muscles And During the urination, ask the patient to urinate in breaks, hold the urine for 3 seconds then 2 seconds then 1 second	
Static Back Exercise	To reduce pain , to increase back strength	Patient in supine position with the towel roll just under her back and ask to press the towel down.	10 repetitions with 5 seconds hold for 2 times the day
Hip adductor strengthening ⁽⁷⁾	To strengthen the hip adductor muscles	Patient is in side lying position, ask the patient to raise the top leg without moving the rest body. Repeat on other side.	10 repetition with 2 seconds of hold
Walking	To facilitate a gradual return to previous daily activities, the pelvis and other core muscles must be challenged.	she walk only on the flat surfaces	6 minutes, up to 5 times in a day
Postural advice	To reduce the risk of low back pain during moving and lifting.	We advised the patient on how to maintain a good posture to reduce additional stress on the abdominal muscles. instructions was given to the patient regarding weight lifting as that she can lift light loads only after six weeks.	

- Treatment was conducted 12 days and exercise was conducted under supervision. After 12 days QUID and PFIQ were used to test the patient.

Follow-up and Outcomes

Table 2: pre-treatment and post-treatment outcome measure

Outcome Measure	Initial Evaluation	Discharge
Pain rating (VAS)	7/10	0-1/10
PFIQ-7	66.7	28.7
UIQ (100% = better pelvic floor functioning)	78	98

DISCUSSION

Hematometra is the blood collection or retention in the endometrial cavity.⁽¹⁾ In the diagnosis of many conditions related to gynaecological diseases, trans vaginal sonography (TVS) has produced a high reward. Medical, surgical, or both may be needed.^{(8),(9)} Physiotherapy management was required after surgical management.

Pelvic floor muscle (PFM) training and other physiotherapy interventions are crucial in the treatment of urinary incontinence. Nearly 420 million people's having urinary

incontinence affects their quality of life. According to numerous reports, severe UI necessitates surgical procedures as well as pre- and post-operative physiotherapy. Pelvic floor muscle training approach has been suggested as the first line of conservative UI treatment.⁽¹⁰⁾ In 1948, Arnold Kegel introduced PFM exercises as a behavioural approach in the treatment of UI.⁽¹¹⁾ According to study, approximately 30%–40% of women are unable to perform the proper voluntary PFM contraction despite instruction, and this figure rises to 70% in the population of women with pelvic floor dysfunction. PFMT may be done to improve strength muscles.^(7,12-14) This study shows that daily PFMT reduces urinary loss and improved quality of life.



We have given the home therapy exercises with the audio based guidance to the patient with all the exercises instruction. Many reports on the efficacy of pelvic floor exercises are conducted but this study differs from the kegel exercise performed with the ankle dorsiflexion and the audio home exercise protocol. Voice training exercises are more effective than conventional ones.^(15,16) While this study gives advice on how to perform the best kegel exercises with ankle dorsiflexion, we get a greater and more powerful contraction of the pelvic floor during ankle dorsiflexion.

CONCLUSION

This case suggests that early physiotherapy rehabilitation with mobility exercises and pelvic and back core strengthening protocols with advanced way helps to achieve effective treatment for weakened pelvic floor muscle and improve women's quality of life, for urinary incontinence after subtotal hysterectomy and hematometra.

CONFLICT OF INTEREST: None

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INFORMED CONSENT

Informed consent was obtained from participant in the study, both in writing and orally.

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