



OPTIMIZING RECOVERY: COMPREHENSIVE PHYSIOTHERAPY MANAGEMENT FOLLOWING WARD MAYO'S REPAIR AND HERNIOPLASTY: A CASE REPORT

Physiotherapy

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ABSTRACT

Background: An inguinal hernia is the protrusion of the contents of the abdominal cavity through the inguinal canal resulting in a bulge at the groin area. Whereas pelvic organ prolapse refers to descent of pelvic organs like the bladder, uterus or rectum due to the loss of anatomical supports. While uterine prolapse and inguinal hernia occur in different regions they share several common etiological factors, such as weakened connective tissue, increased intra-abdominal pressure, and the impact of pregnancy and childbirth. Understanding these links can help in the comprehensive assessment and management of patients who present with either condition. **Case presentation:** A 60-year-old Indian female with grade 3 uterine prolapse, cystocele, and an inguinal hernia presented with mixed urinary incontinence, nocturnal enuresis, lower back, and lower abdominal pain. She underwent hernioplasty and Ward Mayo hysterectomy. Post-operatively, she experienced pain at the surgical site, had expectorations, and felt anxious. The physiotherapy management for her was customized to address both short-term and long-term goals. This included breathing exercises, mobility exercises, core strengthening, and ergonomic guidance. **Results:** Following the intervention, the patient's functional independence measure improved from admission to discharge. Her hospital anxiety score decreased significantly from 7 to 3 out of 21, and her Oswestry low back pain disability questionnaire score reduced from 22 to 10. **Conclusion:** Early therapeutic exercise is beneficial in achieving early postoperative functional goals.

KEYWORDS

Physiotherapy, Ward mayo, Hernioplasty, Hernia, hysterectomy

INTRODUCTION

Pelvic floor dysfunction (PFD) can affect women of all age groups, but its occurrence increases as women age. PFD encompasses various conditions like overactive bladder, stress urinary incontinence, fecal incontinence, and pelvic organ prolapse, all of which can significantly impact a person's quality of life. Pelvic organ prolapse is a particularly important concern, often necessitating surgical treatment throughout a woman's life, even up to the age of 80. As life expectancy rises, it's anticipated that more women will seek treatment for this condition (Alkatout & Mettler, 2017). Several known risk factors for PFD include genetics, race, pregnancy, childbirth, constipation, smoking, obesity, and menopause. Unfortunately, due to cultural taboos and embarrassment, many women are hesitant to discuss these issues and might even consider them a normal part of aging. Segev et al. found a significant association between pelvic organ prolapse and hernias (Segev et al., 2009). In a study conducted in Udupi taluk of Karnataka, it was reported that 21% of females had pelvic floor dysfunction, with 19.02% experiencing urinary incontinence and 1.99% dealing with pelvic organ prolapse (Krishna Rao, 2015).

Case History :

A 60 year old multiparous (G₃P₃L₄A₀) woman, with a body mass index (BMI) of 29.9 kg/m² (considered overweight), and in a postmenopausal state, had been in her usual health until 15 years ago. At that time, she began experiencing issues with urinary incontinence, particularly urine leakage when straining and bed-wetting incidents. She managed this by using protective clothing that would get minimally wet. Around 12 years ago, she noticed a vaginal mass that would protrude and retract when she coughed or strained. However, she didn't seek any medical attention for this concern. About a year ago, she started experiencing a persistent, dull aching pain in her lower left abdomen and groin. This pain intensified when she bent over or coughed. Alongside this pain, she observed swelling in her lower left abdomen. She attempted ayurvedic treatment, which somewhat alleviated the abdominal pain but didn't resolve the swelling.

One week before seeking medical care, she noticed blood in her urine and experienced a burning sensation during urination. She visited a local hospital where preliminary examinations revealed that she was suffering from urinary infection & on scan she was diagnosed to have bilateral inguinal hernias. Surgery was recommended, and she was subsequently referred to hospital.

A week later, she came to the emergency department with severe abdominal pain. Comprehensive investigations were conducted, leading to a diagnosis of grade 3 uterine prolapse, cystocele, and inguinal hernias. She underwent open surgery to repair the left inguinal hernia, involving an incision above the inguinal crease and the placement of a polypropylene mesh. The external oblique aponeurosis was also divided during this procedure. On the same day, she underwent a Mayo's repair procedure, involving an incision at the

cervicovaginal junction, ligation of the uterosacral ligament and uterine vessels, and colpoperineorrhaphy to repair the posterior walls of the vagina and rectocele

Clinical findings:

Postoperative day 1: During a general examination, the patient was awake but appeared anxious, and their vital signs were within the normal range. On cardiorespiratory examination, air entry was found normal, but crepitus was present on the left lower lung fields. The patient was not able to produce sputum on coughing. Pain at the suture site was mildly irritable and scored 4 out of 10 on NPRS (numerical pain rating scale) and 2 on rest and got aggravated while changing position, and coughing. Additionally, they experienced lower back pain, which intensified during walking and prolonged sitting, scoring a 3 out of 10 during activity and no pain at rest.

Postoperative day 3: On postural examination, it was found that the patient had a depressed and anteriorly tipped scapula, forward head, and increased anterior pelvic tilt. The abdominal scar examination was done using the Manchester scar scale. The scar was approximately 20cm long and was healthy without any oozing. On palpation trigger points were present on the right upper and middle trapezius. Active range of motion was found to be within the normative values. Manual muscle testing was done for the upper limb using MRC grading and was also within the normative values. A 2-minute walk test was performed in a 15-meter pathway using modified dyspnoea Borg scale. She had very light dyspnoea at the end of the test. The problem list was generated according to the ICF format for better understanding. Abdominal and hip muscles could not be assessed as the suture was not removed.

Therapeutic Intervention:

Table 1 : Therapeutic Intervention Given

	Therapeutic intervention
Postoperative day 1	• Bed transfer techniques • Breathing exercises: Diaphragmatic breathing and Thoracic expansion were installed along with guided imagery. • Huffing and coughing techniques • Bed mobility exercises: Ankle-toe movement and heel slides • The patient was then encouraged to walk for short distances.
Postoperative days 2-3	continue the same exercises along with active cycles of breathing techniques (ACBT) followed by forced expiratory techniques which consisted of forced expiration or huffs.
Postoperative days 4-6	Pelvic Muscles and pelvic floor muscles strengthening: • Static contraction of gluteal muscles • hip clam exercises, pelvic tilting exercises

- Tanzberger exercises - strengthening of transverse abdominal muscles <i>On postoperative day 6, the patient complained of no back pain and suture site pain and was confident enough to carry out activities of daily living independently.</i>

Table 2. Outcome measures used:

SCALES	FUNCTIONAL INDEPENDENCE SCALE	HOSPITAL ANXIETY SCALE	OSWESTRY LOW BACK PAIN DISABILITY QUESTIONNAIRE
INTERPRETATION	50/126 (pod 1) 121/126 (pod 2) BLADDER MANAGEMENT: improved from admission to discharge (catheter was removed)	7/21 (pod1) 3/21 (pod6)	22.2% (pod1) 10% (pod6)

Table 3. Suggestions

Do's:	- Promote the consumption of fiber and fluids to prevent constipation - Engage in light household activities after 1-2 weeks - Take short walks outdoors - Ensure proper hygiene practices - Persist with your exercise routine
Don'ts:	- Refrain from lifting heavy objects for a period of 4 weeks. - Avoid extended periods of sitting

DISCUSSION:

Hysterectomy is a surgical procedure that involves the removal of the uterus with or without the cervix, fallopian tube, and ovaries. The first hysterectomy was performed as a vaginal hysterectomy and dates back to the time of Soranus of Ephesus (Alkatout & Mettler, 2017). In India, the prevalence of hysterectomy operation was 3.2%, the highest in Andhra Pradesh (8.9%) and the lowest in Assam (0.9%). Rural India had higher a prevalence than urban India (Singh & Govil, 2021). It was also seen that the likelihood of undergoing a hysterectomy is relatively high among women of age between 45-49, multiparous, very young at the time of marriage, obese, and illiterate (Shekhar et al., 2019). Physical therapy interventions aim to ameliorate abdominal surgery's deleterious effects, especially post-operative pulmonary complications (PPC). Thus proper prehabilitation, postoperative, and post-discharge rehabilitation is required to improve the quality of life (Reeve & Boden, 2016). Deep diaphragmatic breathing exercises can lead to widespread inhibition of neuronal firing and other areas of the brain like the cortex and amygdala. Also, it can facilitate the shift from sympathetic to parasympathetic dominance (Jerath et al., 2015). Slow and deep breathing requires good concentration which helps to modulate pain perception as well as to regulate autonomic activity (Busch et al., n.d.). It was also evident that deep breathing exercises helped to reduce anxiety and had no side effect (Chen et al., 2017). Previous literature has shown that guided imagery is an easy and cost-effective intervention for postoperative pain and anxiety (Álvarez-García & Yaban, 2020). Active cycles of breathing help to promote airway clearance by the removal of copious secretions (Lewis et al., 2012). Specific exercises like clamshells, isometric hip, and monster walk using resistance bands to target the hip external rotators were found to be useful to enhance the intravaginal squeeze pressure in older women (Tuttle et al., 2019). A systematic review by Irene et al., 2020 explains the possible physiotherapeutic interventions like PFM training, biofeedback, electrostimulation, magneto stimulation & vibration training for preparing the patient for surgery as well as to increase the success rate of surgery. And also to improve the quality of life of women suffering from urinary incontinence (Mazur-Bialy et al., 2020). Ergonomic guidance further supported the patient's return to daily activities with reduced strain on her healing tissues. Overall, this case illustrates the essential role of physiotherapy in the multidisciplinary management of patients with concurrent pelvic organ prolapse and inguinal hernia, promoting comprehensive recovery and improved quality of life.

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