Original Article

Physiotherapy Approach In Meigs Syndrome: A Case Report

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Abstract

Meigs syndrome is the triad of ascites, pleural effusion and benign ovarian tumour which usually resolves after resection of the tumour. Meigs syndrome is rare. The surgical treatment of choice is exploratory laparotomy with surgery and staging. Fibroma account around 3 % of all ovarian tumours and Meigs syndrome for 1-2% of those. There is a risk of severe adverse outcomes in Meigs syndrome patients which could lead to hampered quality of life. Collaboration between medical intervention and early and sustained comprehensive Physiotherapy rehabilitation play an important role in patient recovery from acute care to discharge. Physiotherapist, who play an important role in multidisciplinary treatment contribute majorly to improve patient's lung, functional capacity and prevention of post operative complications. Thus, improving overall quality of life after the surgery.
Case Description: A 25-year-old female diagnosed with Meigs syndrome who underwent debulking surgery focusing on the role of Physiotherapy in collaboration with medical management and outlining the pathway of recovery from ICU to discharge.
Intervention: Physiotherapy intervention protocol consisted of deep breathing exercises, thoracic mobility exercise, forced expiratory technique, TENS for incisional pain, effleurage technique and ambulation was given to patient for 30 sessions.
Conclusion: The physiotherapy management post-surgery has significant in Meigs syndrome with complications like breathlessness, pedal edema, fatigue, and reduced functional capacity.

Keywords: Meigs syndrome, Pleural effusion, Fatigue, Acute care, post-surgical physiotherapy

INTRODUCTION

Meigs' syndrome is diagnosed based on a triad of ovarian fibroma, pleural effusion, and ascites. It resolves spontaneously after the resection of the fibroma. Meigs' syndrome accounts for about 1% of ovarian tumours, and ovarian fibroma is found in 2–5% of surgically removed ovarian tumours. About 10–15% of women with an ovarian fibroma have ascites, and 1% have hydrothorax. Approximately 70% of pleural effusions are right-sided, 15% left-sided, and 15% are bilateral(AJUM-15-29, n.d.). Although cases have been reported in women before their third decade, Meigs syndrome is sporadic in women younger than 30. The syndrome is much more common in postmenopausal women, especially those around 50 years, and its peak incidence is in women in their seven-decade (Mohammed SA, Kumar A. Meigs Syndrome)
The signs and symptoms of Meigs' syndrome are generally typical. Dyspnoea, chest pain, evidence of fluid in the chest on physical examination, abdominal swelling and pain, and oedema of the legs are all findings that should make the observer consider this syndrome. Neck vein distention, mediastinal shift, hepatomegaly, incontinence and frequency of urination, abnormal uterine bleeding of all types, and uterine prolapse have been reported as associated findings(Budicin et al., n.d.)

Unrecognized and untreated patients will be subjected to multiple thoracenteses and paracenteses Mohammed SA, Kumar A. Meigs Syndrome). Unlike ovarian malignancies, Meigs' syndrome involves a benign ovarian tumour curative by surgical resection. Given the curative treatment of the disease, it is important to consider Meigs' syndrome in the differential when approaching patients with ovarian tumours with pleural effusion, ascites, or both (Shih et al., 2019)
Due to lack of available data on significance of physiotherapy in Meigs syndrome. Thus, Role of Physiotherapy in patients with Meigs syndrome during the period of early intervention for this condition pre- and post-surgery leads to a better prognosis and good quality of life. Hence, this case report will help in adding to the literature about the role of physiotherapy in Meigs syndrome.

CASE PRESENTATION

A 25-year-old female patient is a farm labourer by occupation. She had a history of intermittent abdominal pain, increased abdominal girth, abnormal uterine bleeding, and significant weight loss for almost 5 months. The patient consulted a local clinic where she was prescribed NSAIDs and proton pump inhibitor for five days and advised to go for further investigation. However, due to the financial constraints the patient did not follow-up. The symptoms in the preceding course of days aggravated, and along with it, the patient developed dyspnoea, fatigue, and dry cough. There was no history of trauma or episodes of bleeding. The patient's menstrual cycle was regular but characterized by menorrhagia.

Due to the mentioned complaints, the patient was admitted to Female Medicine Ward, Nims Multispeciality Hospital on 3rd April 2022. Further, based on detailed history along with a physical examination, Uterine cancer was provisionally diagnosed. Later Patient underwent USG of the Abdomen and pelvis, Chest x-ray, Biopsy, and blood investigation. USG of the Abdomen and pelvis was suggestive of heterogeneously hyperechoic mixed solid cystic mass lesion noted in the left ovary measuring 12 x 7 cm while 6 x 4 cm on the right side, and there was the gross amount of free fluid noted in the peritoneal cavity with few internal echogenic debris suggestive of complex ascites. Biopsy revealed the ovarian cancer FIGO staging - Stage 3C. The chest x-ray confirmed the presence of gross left-sided pleural effusion, and a mild tracheal shift to the right. The diagnosis was based on prominent conditions such as, ascites, gross left pleural effusion, and bilateral benign ovarian mass, and it was suggestive of Typical Meigs Syndrome.

On 7th April, the Patient underwent left lung Thoracocentesis and 470 cc serosanguineous fluid was tapped. Post tapping an intercostal drainage tube was placed at the 5th ICS and the vitals were recorded stable. Patient was prescribed Antibiotics, Proton pump inhibitor and intravenous opioids. According to the information provided by the patient, there was no significant medical and family history in context to the diagnosed medical condition. As Thoracocentesis gave only temporary relief to her dyspnoea, on 10th April, under all aseptic conditions, ICD insertion was done at the left 5th ICS, 650 cc of haemorrhagic fluid were drained, and the procedure was uneventful. The pleural fluid cytology reports confirmed the presence of no malignant cells in the pleural exudate. Thus, the surgery was planned, and patients underwent bilateral surgical debulking of ovarian fibroma and midline incision is taken. After which the patient was referred for physiotherapy.

PHYSIOTHERAPY EXAMINATION:

On POD-1, the physical examination revealed a lean-built woman in respiratory distress with mild pallor (Hb: 10.2 gm/dl) and vitals were as follows - PR: 88 Bpm, RR: 24 breaths/minute, BP: 130/80 mmHg and 93% SPO2 on 4.5 litres oxygen support via oxygen mask. A thorough Cardiopulmonary physiotherapy assessment derived that patient has pain over the incision site (NPRS: on rest: 3 and on activity: 6), dyspnoea (MMRC grade: 2), reduced chest expansion (axilla: 2 cm, nipple: 2 cm, xiphoid process: 1.5cm), asymmetrical chest excursion (the chest movement at the left side was reduced) while mediate percussion showed stony dull note. A reduced vesicular breath sounds over the mid and lower zones of left hemithorax consistent with pleural effusion, reduced Left shoulder ROM (Flexion: 0- 70, Abduction: 0- 60, External rotation; 0-65), Bilateral Pedal oedema Present (Grade:2+), reduced functional capacity (6 MWD: 180 m). The fatigue level reported by patient on Traditional BORG scale was (RPE: 13).

PHYSIOTHERAPY INTERVENTION:

The Physiotherapy treatment commenced on the first postoperative day. The therapeutic sessions were performed twice a day for fifteen days. Six days of Physiotherapy treatment yielded distinct improvement, and the Intercostal drainage tube was removed on POD-6th. Patient was weaned off from oxygen support entirely on POD-10th, and patient maintained 96% SPo2 on room air at rest. After 15 days of treatment, a significant return of functions was observed in all aspects. The 30th session was the last one, and the Home Physiotherapy program was advised to the patient. A follow-up assessment was taken three months after the discharge date, and the follow-up x-ray did not show any sign of pleural effusion. The patient confirmed recovery.

TREATMENT & OUTCOME

The Physiotherapeutic management comprises deep breathing exercises (diaphragmatic and segmental breathing), thoracic mobility exercises (within pain-free range at left shoulder), forced expiratory technique, TENS, effleurage technique along with vigorous active ankle pump exercise and ambulation program.

Vital signs (PR, BP, RR, SPO2 and Body Temperature) and auscultation were done pre- and post-intervention. Initial treatment protocols were administered with three sets of all the exercises, wherein a 3-minute rest period was given between each exercise. Each set consisted of 4-5 Reps with 2 minutes rest period between the sets. The TENS was given twice a day till POD- 7th. The parameters set were as follows frequency: 80 Hz, Pulse width:100, Time:20 minutes and the electrodes were placed around the incision site. From the 6th POD, the ambulatory program commenced.

Initial ambulation was done with Physiotherapist's assistance at 200m x 2 Reps. Pre and Post Spo2 were 92% and 97%, respectively. In progression, upper limb strengthening exercises using 1.5kg dumbbell, dyspnoea self-management techniques, and trunk stability exercises were added to the initial treatment protocol. After ground level walking, the patient progressed to stair climbing and then slope walking. On the 15th POD, a post-treatment assessment reflected improvements in the patient's health. The incisional pain decreased from 0 on rest to 1 on activity on the NPRS scale. The breathing pattern and rhythm improved. There was a significant difference in the level of dyspnoea (MMRC grade

reduced to zero). The chest symmetry improved whereas the pedal oedema was completely resolved. The resonant percussion notes and adequate vesicular breath sounds were present over the mid and lower zones of the left lung on auscultation. The chest expansion showed noticeable improvement (Axilla: 3.5cm, Nipple: 3.5 cm, Xiphoid process: 3cm). Thus, there was a difference of 1.5 to 1 cm from baseline values. The full and free ROM was achieved at the left shoulder joint. On the Traditional BORG scale, the RPE decreased to score nine from the previous reading. Hence, a decrease in fatigue levels was observed. There was a significant improvement in 6MWD, and the patient could walk for 320 m. The patient was functionally independent at the point of discharge. Patient was advised to perform home exercises daily. In the follow-up session, three months after discharge, no significant complaints were reported by the patient.

DISCUSSION

Meigs syndrome is a rare clinical entity. The confirmatory diagnosis of this syndrome depends on the resolution of ascites and pleural effusion following the surgical removal of ovarian thecoma fibroma (28322-Article Text-16131-1-10-20080515 (1), n.d.). It is typically present with serous transudative effusion, but haemorrhagic cases have also been reported (Meigs, 1954). Few symptoms of ovarian tumours are abnormal uterine bleeding and endometrial neoplasm in adults, whereas precocious puberty in children. Other symptoms related to the tumour are abdominal distension due to a large tumour, uterine prolapse, pleural effusion, urinary incontinence, fatigue, weight loss, and pedal oedema. Symptoms related to pleural effusion includes dyspnoea, dry cough, and pleurisy Mohammed SA, Kumar A. Meigs Syndrome). Tunnelled drainage catheters are designed for patients with malignant pleural effusion and ascites. In a retrospective study comparing patients, who underwent abdominal pleura catheter placement and repeated large volume paracentesis, the complication rates were similar. Pleura catheter placement provides greater patient satisfaction, as observed in our patients(Riker & Goba, 2013). Physiotherapists have a significant role in managing symptoms of Meigs syndrome to enable higher functional status and quality of life.

The patient in this case report had almost all the medical manifestation of Meigs syndrome. Patients must undergo abdominal surgery to recover from Meigs syndrome. Abdominal surgery is prone to breathing complications such as secretions, atelectasis and pneumonia. Chest Physiotherapy helps to prevent such complications and even resolve breathing complications(Munhoz et al., 2008). In pleural effusion, physiotherapy combined with medical treatment results in reduced length of hospital stay. This is because physiotherapy helps improve lung volume and chest wall expansion(Valenza-Demet et al., 2014). Deep breathing along with walking is a treatment commonly used by chest physiotherapists, in assisting patients with drained and non-drained pleural effusion(Santos et al., 2020). Physical activity in the form of aerobic exercises, yoga, Pilates, taichi, and resistance exercises have proved to be effective in cancer survivors experiencing fatigue, psychological factors, and improving quality of life (Chopde, 2016). The use of range of motion exercises, skin care, compression wrapping, comprehensive decongestive physiotherapy, specialized manual lymph massage, and drainage is effective in pedal oedema (Treatment of Edema- American Family Physician, 2005). Physiotherapy treatment is indicated for female urinary incontinence (Berghmans et al., 2020). Hence, physiotherapy has significant contribution in speedier recovery of patients, suffering from Meigs syndrome. The home physiotherapy protocol consists of technique like the utilization of correct body mechanics, pacing of activities, and coming up with comfortable rest periods are helpful (Mehandiratta & Gugnani, 2020).

CONCLUSION

The available literature reports on Meigs syndrome focused on diagnostics, differentiation, and pharmacological treatment. This literature most presented cases of Meigs syndrome with typical presentation of ovarian tumour, ascites with pleural effusion, whose manifestation was primarily resolved with surgical intervention, along with the additional use of paracentesis and thoracocentesis procedure. Physiotherapy management plays an integral part in caring for patients having clinical manifestations of Meigs syndrome. The outcome achieved after physiotherapy treatment supports these types of intervention protocol. However, our findings could not be compared with any previous reports due to the lack of available literature on the course and outcomes of Physiotherapy Rehabilitation in patients with Meigs syndrome. This report highlights the positive impact of physiotherapy on this rare condition, further studies would help explore the potentials of physiotherapy in patients with Meigs syndrome.

Qualitative Response: On the day of discharge patient reported she is having complete relief from all the complaints, and she was confident enough to resume to her daily life.

Study implication: Using the above protocol a patient suffering from Meigs syndrome with complications like breathlessness, fatigue, pedal edema, and reduced functional capacity can be resolved resulting in improving the condition of the patient. This protocol will help all the practitioners in treating the patient of Meigs syndrome successfully.

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Ethics consideration: The patient in this study has understood and agreed to the use of his personal medical records related to this writing of scientific articles. The patient consciously gave informed consent regarding the data obtained for the preparation of the article to be published in scientific journals.

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