Case Report

Venous Thromboembolism as Initial Presentation of Ovarian Malignancy and Primary Debulking Surgery Without Placement of Inferior Vena Cava Filter: A Case Report

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Abstract

Venous thromboembolism (VTE) affects up to 15% of all cancer patients. Mortality is increased in patients who have coexisting VTE with metastatic malignant disease, making it the second leading cause of death in these patients. The recommended management is primary debulking surgery with placement of inferior vena cava filter (IVCF) to prevent life threatening pulmonary embolism. This study presents a case of 66 years old lady, P4+2, known case of hypertension and asthma, developed acute swelling of right leg which was diagnosed as deep vein thrombosis (DVT) on colour Doppler ultrasound. A pelvic mass was suspected which later on revealed a huge heterogenous density adnexal mass on abdominopelvic ultrasound. CA -125 was 7522.3 U/ml. Ultrasound guided trucut biopsy of the pelvic mass revealed low grade serous papillary ovarian carcinoma. IVC filter could not be placed as the venogram showed complete thrombosis in the right common iliac vein as well as portal thrombus in the infrarenal IVC. Primary debulking surgery without placement of IVCF was done. Postoperative period was uneventful and patient was referred for chemotherapy. To conclude, malignancy should be suspected in patients whose initial presentation is venous thromboembolism. Primary debulking surgery without placement of inferior vena cava filter can be considered a feasible management option in patients of ovarian cancer with VTE who cannot get IVCF placement.

Keywords: Venous thromboembolism, vena caval, Solid Tumor, gynaecological cancers.

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Introduction

Venous thromboembolism (VTE) has long been associated with gynaecological cancers, affecting upto 15% of all cancer patients. Mortality is increased in patients who have coexisting VTE with metastatic malignant disease, making it the second leading cause of death in these patients.[1] Elevated levels of neutrophils which are recruited towards endothelium due to increased expression of soluble P-selectin (biomarker of cancer related VTE), increased platelets (due to hepatic thrombopoeitin production) and tissue factor positive microvesicles are involved in the pathogenesis of VTE associated with cancers.[2]

Previous studies have highlighted the negative consequences of thrombosis on survival of gynaecological cancer patients.[3] Surgery in these patients is another challenging situation. Anticoagulation prior to surgery leads to increased intraoperative hemorrhage whereas withholding anticoagulation may lead to further episodes of life threatening thrombosis including pulmonary embolism (PE). The expert opinion is to

anticoagulate these patients for atleast 4 weeks prior to surgery to reduce further episodes of VTE.[4] Inferior vena cava filter (IVCF) placement has been preferred in these patients before surgery to prevent the passage of emboli into the renal and pulmonary circulation, thus improving the outcomes of surgery. The majority of these patients further undergo chemotherapy, which itself has a thrombogenic potential, thus these patients get benefit from IVCF during chemotherapy sessions also.[5] IVCF is placed through the femoral veins below the renal veins to prevent renal vein thrombosis and pulmonary thombosis.

The present study highlights a case of lower limb/pelvic vein thrombosis with ovarian cancer, which underwent primary cytoreductive surgery without placement of IVCF due to extensive thrombosis of femoral and iliac veins. Even without IVCF placement, the outcome of surgery was good, without lethal pulmonary embolism. Also, an overview of published literature will be discussed here regarding the management of cancer associated VTE and outcomes associated with it as there is very few data available regarding clinical management of cancer associated thrombosis.

Case Report

Informed consent was taken for the use of photographs and other material for publication purposes.

A 66 years old lady, P4+2, known case of chronic hypertension and asthma for the last 10 years (controlled on medication), developed acute swelling of the left leg extending up to the thigh along with severe pain which persisted for 2 days. She consulted a doctor one and a half month back and the examination revealed hard, tender left lower limb with petechial hemorrhages over it. (Figure I)

Right leg was normal. She was advised colour Doppler ultrasound and baseline investigations with coagulation profile. Colour doppler ultrasound revealed thrombosis of all the deep veins of the left leg extending upto the iliac veins with soft tissue edema in left leg. Also a huge abdominopelvic mass was observed during ultrasound. Her coagulation profile (Prothrombin time, activated partial thromboplastin time, international normalized ratio and fibrinogen) and other baseline investigations were normal. Patient had no previous history of any immobilization, trauma, surgery, smoking, or hormonal intake. There was no history of thrombosis in the family. She was advised low molecular weight heparin 60mg S/C in BD dose. After consultation by a Gynaecologist, CT scan abdomen/pelvis with contrast was done which showed a large heterogenous density mass of 14.9*11.7*17.2cm with solid cystic components in the pelvis & lower abdomen, fat planes of the mass with the uterus, distal part of right ureter and peripherally displaced gut loops were indistinct, mass was displacing the right ureter with upstream hydronephroureter, and extensive thrombosis of common iliac/external & internal iliac and femoral veins was noted.

Figure I. Deep vein thrombosis of lower limb.

CA -125 was 7522.3 U/ml. Ultrasound guided trucut biopsy of the pelvic mass was done which revealed low grade serous papillary ovarian carcinoma. Surgery was planned so IVC filter placement was suggested but venogram showed complete thrombosis in the right common iliac vein as well as portal thrombus in the infrarenal IVC, so IVC filter could not be placed. She was refused for sugery due to high risk for pulmonary embolism. Also she was

refused from oncology centres for chemotherapy due to its thrombogenic potential. She presented in the Obs/Gynae outpatient department of Kahuta Reasearch Laboratories (KRL) hospital, Islamabad on 2nd July, 2018 and she was admitted for detailed evaluation. She was vitally stable. Abdominal examination showed a fixed mass of 20 weeks size in the hypogastric and umbilical region, hard in consistency, irregular margins and lower limit was not reachable, shifting dullness & fluid thrill were negative. Bimanual examination reinforced these findings. Left leg was hard, non-tender but with petechial hemorrhages over it. Right leg was normal. According to multidisciplinary approach, a detailed discussion of Gynaecologist with Anesthetist, Medical Specialist and Surgeon was done. After counselling of the patient and her family, staging laparotomy and debulking surgery was planned. Pre-operative preparation was done and Inj. Clexane was stopped 24 hours before surgery. Per-Operative D.J stenting was done. Peritoneal washings were taken. A complex, hemorrhagic, right ovarian mass of 14*12cm was found in the middle of peritoneal cavity which was removed [Fig II].

Figure II: Ovarian mass

Uterus was very small in size, atrophic and buried behind the bladder. Left fallopian tube was convulated, adherent to the uterus and ovary was not separately visualized. Omentum was unhealthy with metastatic deposits and infracolic omentctomy was done. Seedlings of metastatic tumor deposits were found all over the peritoneal cavity. All the samples were sent for histopathology. She remained stable during post-operative period. Early mobilization and compression stockings were advised. Inj. Clexane was restarted after 24 hours of surgery after testing for coagulation and blood count. She was discharged on 3rd post-op day on oral warfarin. Her post-operative recovery was unremarkable. Histopathology showed high grade serous papillary ovarian carcinoma and she was referred to oncologist for chemotherapy.

Discussion

The risk of VTE is increased by 4-7 times in cancer patients than the general population. UK statistics have shown the incidence for ovarian cancer at 31/1000 (95% CI 27 to 36), uterine cancer at 11/1000 (95% CI 9 to 14), and breast cancer at 9/1000 (95% CI 8 to 10).[6] According to RISTOS project, the incidence of enhanced thrombosis was 2% after surgery for gynaecological malignancies and the cause of death was thrombosis in around 50% of those patients undergoing debulking surgeries.[7] This case highlights that malignancy should be suspected in those patients who present with VTE initially as our patient was diagnosed as VTE before the diagnosis of ovarian malignancy.

Ovarian cancer, which is one of the commonest gynaecological cancers, is linked with VTE and primary debulking surgery followed by chemotherapy is the standard of treatment in these patients. However, in large inoperable tumors, neoadjuvant chemotherapy followed by interval debulking surgery can also be employed. Advanced age, high grade/stage malignancy, pelvic surgery, immobilization and chemotherapy are all independent risk factors for VTE. 1 in 10 patients of VTE ultimately progress to pulmonary embolism and the prognosis is worse for those patients who have thromboembolic disease associated with malignancy.[8] Our patient also had these risk factors which include advanced age, high grade & advanced stage of malignancy and later on, she underwent pelvic surgery.

The consensus guidelines suggest to anticoagulate these patients with LMWH at least 4 weeks before surgery, though some studies have shown that immediate surgery was not associated with increased major morbidity.[4,9] Our patient was already on LMWH even before the diagnosis of malignancy and plan of surgery. To reduce further episodes of thromboembolism after debulking surgery; compression stockings, early mobilization and LMWH are recommended in these patients. All of these effective strategies were implemented in our patient too.

PE, being the cause of mortality, has led to the introduction of IVCF placement before surgery. This filter helps in trapping and preventing the migration of thrombus to the pulmonary vasculature. The filter is placed before surgery, and is kept there, even during chemotherapy sessions, as chemotherapy itself is associated with acceleration of thrombosis. The morbidity associated with IVCF is low which includes IVCF thrombosis, filter dislocation or infection and catheter fracture. Case fatality rate is 0.16%.[10] Indications for IVF placement in those having ovarian malignancy with VTE include: primary debulking surgery, neoadjuvant chemotherapy, contraindicated or failed anticoagulation, heparin induced thrombocytopenia and CNS malformation.[11]

The management of this case was different from other published studies in which diagnosis was made with laparoscopy and IVFC was placed before surgery.[12,13] Due to the extensive thrombosis of the femoral and iliac veins, IVCF couldn't be placed in our patient and primary debulking surgery was done without it. Our patient didn't develop pulmonary embolism or any other complications after surgery, which strengthens the previous limited data in this prospect of management.[14]

Conclusion

Malignancy should be suspected in patients whose initial presentation is venous thromboembolism. Primary debulking surgery without placement of inferior vena cava filter can be considered a feasible management option in patients of ovarian cancer with VTE who cannot get IVCF placement

References

1. Montoya TI, Leclaire EL, Oakley SH, Crane AK, Mcpencow A, Cichowski S, Rahn DD. Fellows' Pelvic Research Network of the Society of Gynecologic Surgeons. Venous thromboembolism in women undergoing pelvic reconstructive surgery with mechanical prophylaxis alone. Int Urogynecol J. 2014; 25(7): 921-6
2. Hisada Y, Mackman N. Cancer-associated pathways and biomarkers of venous thrombosis. Blood. 2017; 130(13): 1499-1506.
3. Peedicayil A, Weaver A, Li X, Carey E, Cliby W, Mariani A. Incidence and timing of venous thromboembolism after surgery for gynecological cancer. Gynecol Oncol. 2011; 121(1): 64-9.
4. Orr JW, Kelly FJ, Roland PY. Perioperative care. In: Gershenson DM, McGuire WP, Gore M, Quinn MA, Thomas G, editors. Gynecologic Cancer. Controversies in Management. Chapter 48. Philadelphia, PA: Elsevier; 2004. pp 631–48.
5. Adib T, Belli A, McCall J, Ind TE, Bridges JE, Shepherd JH, Barton DP. The use of inferior vena caval filters prior to major surgery in women with gynaecological cancer. BJOG 2008; 115: 902–907.
6. Walker AJ, Card TR, West J, Crooks C, Grainge MJ. Incidence of venous thromboembolism in patients with cancer - a cohort study using linked United Kingdom databases. Eur J Cancer 2013; 49: 1404–13
7. Agnelli G, Bolis G, Capussotti L, Scarpa RM, Tonelli F, Bonizzoni E, Moia M, et al. A clinical outcome-based prospective study on venous thromboembolism after cancer surgery: the @RISTOS project. Ann Surg 2006; 243: 89–95
8. Sallah S, Wan JY, Nguyen NP. Venous thrombosis in patients with solid tumors: determination of frequency and characteristics. Thromb Haemost 2002; 87: 575–9.
9. Adib T, Belli A, McCall J, Ind TE, Bridges JE, Shepherd JH, Barton DP. The use of inferior vena caval filters prior to major surgery in women with gynaecological cancer. BJOG. 2008; 115(7): 902-907
10. Miyahara T, Miyata T, Shigematsu K, Deguchi J, Kimura H, Ishii S, Nagawa H. Clinical outcome and complications of temporary inferior vena cava filter placement. J Vasc Surg 2006; 44: 620–4.
11. Lee JK, So YH, Choi YH, Park SS, Heo EY, Kim DK, et al. Clinical course and predictive factors for complication of inferior vena cava filters. Thromb Res. 2014; 133: 538–543.
12. Hurtt CC, Cliby WA, Weaver AL, McGree M, Martin J, Bakkum-Gamez JN. Management of epithelial ovarian cancer in the setting of concomitant venous

thromboembolism. Obstet Gynecol. 2014; 123(Suppl 1): 183S–184S.
13. Ha JE, Lee YS, Lee HN, Park EK. Diagnostic laparoscopy of patient with deep vein thrombosis before diagnosis of ovarian cancer: A case report. Cancer Res Treat. 2010; 42: 48–52.
14. Shen H, Shang J, Niu G, Liu J, You Z, He S. Optimal cytoreductive surgery for underlying ovarian cancer associated with deep venous thrombosis without placement of inferior vena cava filter: A case report and literature review. Oncology letters. 2015; 10(4): 2579-83.