Section: General Surgery

Original Research Article

A CROSS SECTIONAL STUDY ON PRESENCE OF UNDIAGNOSED MALIGNANCY IN PATIENTS WITH UNPROVOKED DEEP VEIN THROMBOSIS

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Abstract

Background: The aim is to analyze the unusual occurrence of deep vein thrombosis (DVT) in patients and to correlate the occurrence of DVT to occult malignancies. **Materials and Methods:** The research comprise 50 patients between 25-70 years of age with diagnosis of unprovoked DVT. The patients are evaluated with clinical examination, venous doppler, USG abdomen, Chest X-Ray, ECG and coagulation profile and investigations pertaining to malignancy screening like sonomammogram for breasts, prostate examination, and prostate specific antigen if suspicious of malignancy in males, endoscopy and tumour markers as required. **Result:** Out of 50 patients 4 patients were diagnosed to have malignancy. Three patients had palpable abdominal mass; one patient had mass in per rectal examination. Endoscopy showed features of adenocarcinoma stomach in three patients which was proved by histopathological examination. One patient had mass per rectum 6 cm from the anal verge; proved to be carcinoma rectum. Of the three patients with carcinoma stomach, one had opacities in the left upper lobe in the chest x-ray. **Conclusion:** The result of this study shows that clinically and statistically significant association is present between unusual occurrence of DVT and hidden malignancies. Most of the cancers are asymptomatic in the beginning and becomes clinically detectable once deep venous thrombosis is diagnosed. Though the clinical implications of such an association is not precise, there exists a correlation between the presence of undiagnosed deep venous thrombosis and cancer.

INTRODUCTION

Thrombosis is the condition where there is a formation of an abnormal blood clot within the vasculature of the body from the elements of the blood. This when present in the deep veins is called deep venous thrombosis. The diagnosis of deep vein thrombosis is very essential for the treatment of the disease. Also, it will help to avoid acute and chronic complications in addition to avert unnecessary therapies which may lead to further complications. The DVT in the lower limb can be proximal or distal depending on the anatomical location of the DVT. The risk of chronic complications is higher with proximal DVT. The risk of cancer is high in proximal DVT. Case fatality is higher with proximal DVT. One of the challenges of proximal DVT is that it may be asymptomatic and may be missed in history or routine clinical examination. Some of the clinical features are not specific for DVT. Therefore, this study is important to understand if DVT is associated with underlying malignancy.

Several epidemiological studies have demonstrated the relationship between cancer and deep venous thrombosis.[1-14] The incidence of venous thrombosis was demonstrated to be higher in patients with malignancy than those who don't in surgical post operative patients.[15] Even in non-surgical patients, the incidence of pulmonary thromboembolism is higher in malignant subjects due to the activation of the coagulation pathways.[16,17] There have been numerous studies on small scale from time to time in cohorts with high possibilities of bias and errors.[18] This is due to the extreme short duration of abdominal neoplasms making it extremely hard to detect and follow up. In addition, presence of occult cancers is very hard to detect in patients with thromboembolic episodes if a detailed diagnostic evaluation plan has not been done. Post-mortem studies too tell a connection between malignancy and deep venous thrombosis.[19] Further studies say that around 10-20% of subjects with deep venous thrombosis being detected with cancer.

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MATERIALS AND METHODS

A cross sectional study was conducted at a tertiary care hospital. The research population consisted of patients with sudden onset of Deep vein thrombosis presenting at the outpatient department. The research comprises fifty patients aged 25-70 years of age with sudden onset of DVT. The trial excluded patients with age under 25 years and above 70 years, patients with prolonged surgeries, patients with history of recent abdominal surgeries, orthopaedic surgeries, urogynaecological major procedures, pregnant women, and women with history of oral contraceptive pill usage.

Methodology

Prior to data collection, the project obtained approval from the institutional ethics committee. The research obtained permission from the individuals in accordance with established protocols. The patients were evaluated with venous Doppler, Clinical Examination, USG Abdomen, Chest X-Ray, ECG and Coagulation profile. Investigations pertaining to the malignancies, sonomammogram for women with breast cancer, prostate specific antigen for males with carcinoma of prostate; oesophagoduodenoscopy (OGDscopy) , Colonoscopy, CEA, CA 125, AFP, and CA 19-9.

Statistical Analysis

The data input was performed using Microsoft Excel. The data was analysed using the Statistical Package for Social Sciences (SPSS) version 25.0 for MS windows. software analysis. Frequencies, percentages and inferential statistics were done. A p value below 0.05 is deemed statistically significant.

RESULTS

A substantial proportion of patients fell within the age group of 40- 60 years (80%). Those below 40 years and above 60 years were 6% respectively The average age was 50.28 years with a standard deviation of 7.17 years.

The study population had 52% females and 42% males. Examination of abdomen revealed palpable mass in three patients. Bilateral breast examination was normal in all the patients.

Oral cavity examination was normal in all the patients

In per rectal examination, mass was felt in only one patient

Per vaginal examination was normal in all the patients.

Diagnosis revealed that one patient had carcinoma rectum while three of them had carcinoma stomach. Four of the fifty patients had malignancy. The doppler study showed presence of popliteal vein DVT in 4 patients, femoral vein DVT in 6 patients, femoral and popliteal veins DVT in 38 patients and involvement of iliac vessels in 2 patients.

The ultrasound abdomen showed no significant abnormality in 92% of patients. Four percent patient had stomach wall thickening and 2% had ascites.

Chest x-ray showed opacities in the left upper lobe of one patient while the others had a chest x-ray with no significant abnormalities.

In the female patients, breast screening with sonomammogram showed no significant finding in all the subjects.

The oesophagoduodenoscopy showed abnormality in three patients. all three of the patients had suspicious lesion in the stomach which turned out to be adenocarcinoma on histopathological examination.

Colonoscopy was performed in the patient with mass per rectum. There was an ulceroproliferative lesion 6 cm from the anal verge. Biopsy from the lesion was found to be adenocarcinoma grade 2.

Tumour markers were examined in patients proven to have malignancy. CEA was found to be elevated in 4% of the patients.

Table 1: Gender and Age of the Patients

Gender	Number	Percent
Male	24	48
Female	26	52
Age group (years)		
Below 30	0	0
30-40	2	4
40-50	33	66
50-60	14	28
60-70	1	2

Table 2: Clinical examination of abdomen

Finding	Number	Percent
Mass palpable per abdomen1	3	6
Normal finding	47	94

Table 3: Per rectal examination findings

Finding	Number	Percent
Mass per rectum	1	2
Normal finding	49	98

Table 4: Osophagoduodenoscopy Findings

Finding	Number	Percent
Gastritis	4	8
Peptic ulcer	2	4

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Malignant lesion	3	6
Normal study	41	92

Table 5: venous doppler findings

Finding	Number	Percent
Femoral vein	6	12
Popliteal vein	4	8
Both femoral and popliteal	38	76
Involvement of iliac veins	2	4

Table 6: ultrasound abdomen findings

Finding	Number	Percent
Stomach wall thickening	2	4
Ascites	1	2
No significant abnormality	47	94

DISCUSSION

The current study aimed to see any association between venous thrombosis and the incidence of cancer. The primary objectives were to analyse the unusual occurrence of deep vein thrombosis in patients and to correlate the unusual occurrence of DVT to hidden malignancies among patients in the age group of 25-70 years.

The age distribution of the participants was mean age of 50.26 (S.D=7.717, N=50). Majority of them were females (52, n=26). Examination of the abdomen revealed that three patients had palpable mass in the abdomen. Bilateral breast examination was normal in all the patients. Oral cavity examination was normal in all the patients. In per rectal examination, mass was felt in only one patient. Per vaginal examination was normal in all the female patients. Four of the fifty patients were found to have malignancy.

The result of this study shows that clinically and statistically significant association is present between unusual occurrence of DVT and hidden malignancies. Most of the cancers are asymptomatic in the beginning and becomes clinically detectable once deep venous thrombosis is diagnosed. Selection bias was avoided by using consecutive sampling based on evidence of venous thrombosis in patients who did not have clinically detectable signs of overt cancer at time of presentation. Observation bias was excluded by looking for cancer in all patients with deep venous thrombosis.

Trousseau in 1868 did the initial study correlating cancer and thromboembolism. Since then, there have been many studies to study this connection between cancer and thromboembolism.

Cancer patients are in a prothrombotic state which may be a cause of deep vein thrombosis in these patients. the mechanism is not fully understood. It is estimated that 4-20% of cancer patients will experience venous thrombosis at some stage. Cancers of pancreas, lung, stomach, brain, kidneys, and uterus are found to be commonly associated with increased risk of venous thrombosis. Also, cancers with advanced stages pose greater risk for deep vein thrombosis.

CONCLUSION

Any patient with unprovoked sudden onset of deep vein thrombosis must also be evaluated for malignancy. Though The result of this study shows that clinically and statistically significant association is present between unprovoked deep vein thrombosis and hidden malignancies, a large-scale randomised control trial is necessary to have definitive conclusions.

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