



A STUDY THE CLINICAL FEATURES AND ETIOLOGICAL FACTORS IN CEREBRAL VENOUS THROMBOSIS PATIENTS

Medicine

**Dr. Dattatraya
Hambire***

Director, Department Of Medicine Vishwaraj Hospital, Pune *Corresponding Author

**Dr. Rucha
Pachunde-Hambire**

Consultant, Sahyadri Hosp,Pune

Dr Sarang Barbind Consultant, Symbiosis Hosp, Pune

ABSTRACT

Background : Cerebral Venous Thrombosis (CVT) is a syndrome of Intra-cranial venous and sinus thrombosis. It may be aseptic or as a result of infection causing septic thrombophlebitis.. The advent of Computed Tomography and Magnetic resonance Imaging has revolutionized the diagnosis of CVT. CVT is a more common form of stroke in our country as compared to west. This requires a detailed study of patients to look for any unique etiological factors that may be responsible for its increased prevalence. **Aims And Objectives:** 1) To study the clinical profile of patients of CVT 2) To identify etiological factors in patients of CVT 3) To identify the value of CT, MRI and other laboratory parameters in the diagnosis of CVT 4) To observe the response of therapy in CVT **Material And Methods :** It is proposed to study at least 30 adult patients of CVT presenting to our hospital. The diagnosis of CVT will be based on clinical features, radiological features including CT, MRI and relevant investigation to exclude other causes. **Result And Conclusion :** We found that CVT affects all age groups irrespective of the etiological factor, but tends to affect predominantly the young adults (60%) in age group of 21-30 years. There were 17 females (56.6%) and 13 males (43.3%) female to male ratio being 1:30. Sub-acute presentation (56.6% of cases) is found to be the commonest mode on onset in this study. Headache, seizures and papilloedema were the commonest mode of presentation. MRV was found to be 100% diagnostic for cerebral venous thrombosis even when CT scan was normal. Most common etiological factor for thrombosis is found to be Idiopathic (43.3%).

KEYWORDS

Cerebral Venous Thrombosis, Headache, MRVenogram

INTRODUCTION

Cerebral Venous Thrombosis (CVT) is a syndrome of Intra-cranial venous and sinus thrombosis. It may be aseptic or as a result of infection causing septic thrombophlebitis. In pre-antibiotic era post-infective CVT was more prevalent while aseptic CVT is more common now. Thus the factors responsible for CVT and clinical profile of CVT have been changing over times.

The advent of Computed Tomography (CT Scan) and Magnetic resonance Imaging (MRI) has revolutionized the diagnosis of CVT.⁵

Heparin and Low molecular weight Heparin (LMWH) have been found to be very useful for management of aseptic CVT.³ Recently thrombolytic and fibrinolytics like streptokinase have also been found to be effective.⁶ Early clinical diagnosis, MRI studies and early institution of therapy has reduced the mortality from 50.6% to 10% in last 3 decades. CVT is a more common form of stroke in our country as compared to west. This requires a detailed study of patients to look for any unique etiological factors that may be responsible for its increased prevalence. It is proposed to study the clinical profile, identify etiological factors, diagnostic tests, response to therapy in patients of CVT presenting to our hospital.

Aims And Objectives

- 1) To study the clinical profile of patients of CVT
- 2) To identify etiological factors in patients of CVT
- 3) To identify the value of CT, MRI and other laboratory parameters in the diagnosis of CVT
- 4) To observe the response of therapy in CVT and identify the prognostic factors, if any.

MATERIAL AND METHODS

It is proposed to study at least 30 adult patients of CVT presenting to our hospital. The diagnosis of CVT will be based on clinical features, radiological features including CT, MRI and relevant investigation to exclude other causes. The patients will be managed with heparin or Low molecular weight heparin, antibiotics and supportive measures as required.

• Other Investigations Done Will Be:

- a) Haemogram including platelet count
- b) Urinalysis
- c) RFT/LFT
- d) Lipid profile
- e) Blood sugar

- f) Investigations for identifying the thrombophilic states as far as possible, for example Protein C, Protein S, Antithrombin III, Factor V mutation and Lupus anticoagulant.
- g) Doppler UGS (ultrasound) of lower limbs and cranium will be done.
- h) X-ray chest (Postero-Anterior view)

RESULT

Table no. 1 : Clinical Profile according to the Etiological Factor

CLINICAL FEATURE	Pregnancy and Puerparium (n=7)		Idiopathic (n=13)		Secondary (n=10)	
	n	%	n	%	n	%
Headache	5	71.4	11	84.6	8	80
Seizures	4	57.1	3	23	2	20
Vomiting	4	57.1	7	53.8	6	60
Focal Neurological Deficit	2	28.5	3	23	1	10
Fever	1	14.2	0	0	2	20
Altered Sensorium	1	14.2	1	7.6	1	10
Papilloedema	4	57.1	2	15.3	2	20

Table no. 2 : Predisposing Factors (n=30)

Predisposing Factors	Number of Patients (30)	Percentage (%)
Pregnancy and puerparium	7	23.3
CSOM/ Mastoiditis	4	13.3
Dehydration	2	6.6
Oral Contraceptive pills	1	3.3
Diabetic Ketosis	1	3.3
Hyperhomocysteinemia	3	10
APLA/Factor V/II mutation/ Protein S,C **	0	0
Antithrombin III	1	3.3
Idiopathic	18	43.3

DISCUSSION

Analysis of the data of present study revealed that all age groups are affected. The age group of 21-30 years formed the maximum number of cases (60%). This study matches the reports of Parikh¹⁰ et al. where 55% of the cases belong to the age group of 21-30. When we consider age group depending on the sex we find that in cases of females almost 82% of cases are seen in age group 21-40 years, the higher

preponderance than males in this age group is being due to reproductive age group and also use of oral contraceptives to some extent. Sub-acute presentation is found to be the commonest mode on onset in this study with 56.6% of cases belonging to this group irrespective of the etiological factor responsible for this disease. Higher percentage of patients presenting with headache. However, the frequency of seizures and papilloedema is much higher in the pregnancy and puerperium group as compared to others. In this study MRI venogram was done in 27 (90%) out of 30 patients patient was already subjected to CT venography before getting admitted to our hospital. Rest 2 patients were subjected again to CT due to non-affordability for MRI venogram. MRV was found to be 100% diagnostic for cerebral venous thrombosis even when CT scan was normal.

In this study we found that the no etiological factor for thrombosis could be found in patients which accounted for 43.3% of cases. This high rate of idiopathic cause in this study may be due to the fact that only few patients were subjected to genetic analysis or acquired prothrombotic states due to non-affordability. This study was conducted in a large public hospital where majority of the patients were from low socio-economic group. Second etiological factor in frequency in this study was found to be infection of ear (CSOM, Mastoiditis). Third etiological factor in frequency is pregnancy and puerperium in this study.

In this study all patients were managed medically with Low Molecular Weight Heparin in spite of the presence or absence of hemorrhage on presentation.

Outcome

Prognosis was found to be good in most cases 26 out of 30 patients showed complete recovery (86.6%) and 3 patients recovered with residual neurological deficit (10%). 1 patient succumbed to the illness.

Summary

- As per previous belief, females are affected more frequently than males in cerebral venous thrombosis. Male to Female ratio is found to be 1:1.30. All age groups are affected with predominance for age group 21-30 years (60%)
- The mode of presentation was sub-acute in 56.6% acute in 33.3% and chronic accounted for only 10% of cases.
- Headache, seizures and papilloedema were the commonest mode of presentation. There was no difference in symptomatology of patients with different predisposing factors.
- MRV was found to be the useful imaging technique with high positive result even in cases of normal CT scan.
- Sagittal sinus was the most frequently affected sinus with 63.3% of cases.
- Most common etiological factor for thrombosis is found to be Idiopathic (43.3%).
- Infection was found to be responsible for 13.3% which is quite low as compared to previous studies due to earlier detection of infection and judicious use of antibiotics.
- Low molecular weight heparin was widely used in present study and found to significantly reduce mortality to 3.3%.

CONCLUSION

- Cerebral venous sinus thrombosis affects both sexes and all age groups with slight female predominance and more common in adult age group.
- Headache, vomiting, seizures and papilloedema are the most consistent clinical features followed by focal deficit and cranial nerve involvement irrespective of the etiological factor and location of thrombus.
- MRV is superior to CT scan and should be the investigation of choice even when CT scan is normal and clinical suspicion is high.
- Prothrombotic factor should be assessed in patients with relevant clinical background.
- Low molecular weight heparin is helpful and safe in patients irrespective of presence or absence of hemorrhage.
- The prognosis of cerebral venous sinus thrombosis is usually favorable.

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