



ORIGINAL RESEARCH PAPER

Neurology

A STUDY OFF PROFILE OF CEREBRAL VENOUS SINUS THROMBOSIS ADMITTED IN A TERTIARY CARE HOSPITAL IN SOUTH TAMIL NADU

KEY WORDS: CVT-Cerebral venous sinus Thrombosis DCLD-Decompensated chronic liver disease SLE-systemic lupus erythematosis.

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ABSTRACT

Background and Aim: CVT is an infrequent Neurovascular disorder with variable presentations. There are various ethologies causing Thrombosis of different segments of vein leading to concordance of symptoms and signs useful in diagnosis and Treatment. The study aims to study the profile of CVT patients admitted in a tertiary care hospital in south Tamil Nadu. **Methods:** The study includes all the patients diagnosed as CVT among inpatients in Govt.Rajaji hospital Madurai. The study was conducted during the period of 15 months from jan 2021-March 2022 **Results:** Among the total patients 32 were males and 68 were females. Puerperium was found to be most common cause of CVT (28%) in the study. A total of 56 patients belong to the age group of 21-40 yrs. 38% of patient had thrombosis in the superior sagittal sinus.

INTRODUCTION

The CVT is a rare neurovascular disease comparing to that of arterial disease¹. It varies from 0.5% to 3%² of all types of strokes, affecting commonly young people with an estimated incidence of 3-4 per million among adults and 7 per million among children's. Puerperium associated CVT has been established to be 11.6 cases per 1,00,000 deliveries³.

Knowledge about neurovascular anatomy is vital in analysing the signs and symptoms based on location of Thrombus presentations with Jugular foramen syndrome when jugular bulb is involved and with multiple cranial nerves in cavernous sinus thrombosis.

MATERIALS AND METHODS

This was a cross sectional study done over a period of Months among patients admitted in Govt Rajaji hospital Madurai. Tamil Nadu

Inclusion criteria

All CVT patients diagnosed with proper clinical evaluation and confirmed with MR venogram were taken in our study

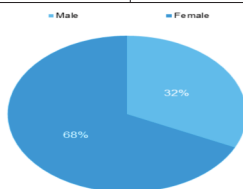
Exclusion criteria

- 1. Old CVT and Recurrent CVT

Analysis

A total of 100 patients were selected for the study of which 32 were males 68 were females According to hospital age of the patients 6 patients were in the age group of less than 20 years, 56 patients belongs to the age group of 21-40 yrs of age, 29 patients belongs to age group of 41-60 yrs and 9 patients were above 60 yrs of age

AGE DISTRIBUTION	
Age in years	No. of cases
<20	6
21-40	56
41-60	29
>60	9
Total	100



Sex Distribution:

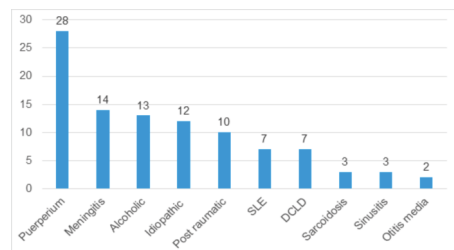
Etiology:

Table: Age and sex wise distribution of participants.

Age group (In years)	Male		Female		Total	
	N	%	N	%	N	%
< 20	2	6.3	4	5.9	6	6
21-40	16	50	40	58.8	56	56
41-60	10	31.3	19	27.9	29	29
>60	4	12.5	5	7.4	9	9

Aetiology Of Stroke

Among the aetiologies of stroke puerperium was the most common cause of stroke 28% followed by meningitis 14%, Alcoholic 13%, idiopathic 12%, post traumatic 10%, SLE 7%, DCLD 7%, Sarcoidosis 3%, Sinusitis 3%, Otitis media 2%.



Site Of Thrombus

The most common sinus involved was superior sagittal sinus (38%) followed by right transverse sinus (21%), left transverse sinus (17%), sigmoid sinus 15%, deep cerebral veins (7%), and least among Great vein of Galen (2%)

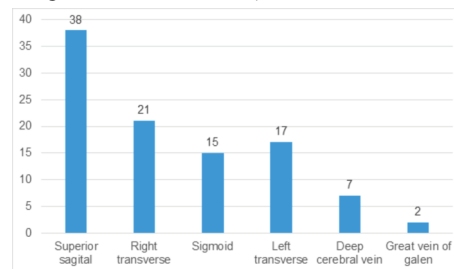


Fig: Bar chart showing distribution according to the site of thrombus among the participants

Among males 11 patients had superior sagittal sinus thrombosis 06 patients had sigmoid sinus thrombosis, 5 patients with left transverse sinus thrombosis 7 patients with Right transverse sinus thrombosis and 2 patients with deep cerebral vein thrombosis. Among females 27 patients had superior sagittal sinus thrombosis, 14 patients had right

transverse sinus thrombosis, 12 patients with left transverse sinus thrombosis 9 patients with sigmoid sinus thrombosis, 5 patients with deep cerebral vein thrombosis and 2 patients with Great vein of Galen thrombosis.

Table: Distribution of causes with regard to age and sex.

Cause	Age group (in years)							
	< 20		21-40		41-60		>60	
	Male	Female	Male	Female	Male	Female	Male	Female
Puerperium	0	4 (14.3)	0	22(78.6)	0	1(3.6)	0	1(3.6)
Meningitis	0	0	2(6.7)	4(36.4)	1(33.3)	6 (54.5)	0	1(9.1)
Alcoholic	0	0	6(50)	0	5(41.7)	1(100)	1(8.3)	0
Idiopathic	0	0	1(50)	4(40)	0	4(40)	1(50)	2(20)
Post traumatic	1(16.7)	0	3(50)	3(75)	1(16.7)	1(25)	1(16.7)	0
SLE	0	0	0	6(85.7)	0	1(14.3)	0	0
DCLD	0	0	3(42.9)	0	3(42.9)	0	1(14.3)	0
Sarcoidosis	0	0	0	0	0	3(100)	0	0
Sinusitis	1(100)	0	0	1(50)	0	1(50)	0	0
Otitis media	0	0	0	0	0	1(50)	0	1(50)

Percentages depicted were within sex percentage for each cause.

Among males 13 were alcoholic CVT (40.6%) compared to that of 1 female patient DCLD (21.9%). post traumatic 6 patients (18.8%), meningitis (9.4%), sinusitis 1 patient (3.1%) idiopathic 3 patients (6.3%) Among females puerperal CVT forms the leading cause 30 female patients (44.1%), meningitis 9 patients (13.2%), idiopathic 10 patients (14.7%), SLE 7 patients (10.3%), post traumatic 4 patients (5.9%).

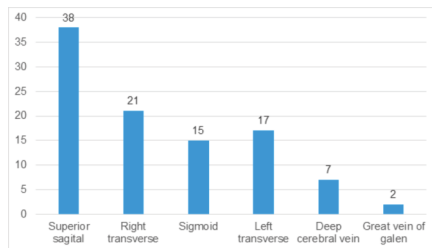


Fig: Bar chart showing distribution according to the site of thrombus among the participants.

Table: Distribution of site of thrombus formation with regard to age and sex.

Site of thrombus	Age group (in years)							
	< 20		21-40		41-60		>60	
	Male	Female	Male	Female	Male	Female	Male	Female
Superior sagittal	0	4(14.8)	5(45.5)	12(44.4)	5(45.5)	8(29.6)	1(9.1)	3(11.1)
Right transverse	0	0	4(57.1)	9(64.3)	1(14.3)	4(28.6)	2(28.6)	1(7.1)
Sigmoid	1(16.7)	0	2(33.3)	6(66.7)	2(33.3)	2(22.2)	1(16.7)	1(11.1)

Left transverse	1(20)	0	3(60)	9(75)	1(20)	3(25)	0	0
Deep cerebral vein	0	0	1(50)	3(60)	1(50)	2(40)	0	0
Great vein of Galen	0	0	1(100)	0	0	0	0	0

Percentages depicted were within sex percentage for each site of thrombus.

DISCUSSION

Women during pregnancy can come across several Neurological illness but CVT being uncommon is considered important. CVT accounts for 1.16 to 2.02% of all types of strokes. CVT affects young females compared to that of males auto immunity and oral contraceptives intake plays a role. Females during their pregnancy and 6-8 weeks following delivery are commonly affected ⁴.

The symptoms in CVT are due to obstruction of cortical veins and superior sagittal sinus, which causes impairment in CSF absorption leading to increased ICT or by obstruction of draining veins causing cerebral infarctions manifesting with focal signs. classically a seizure occurs at the height of headache followed by paresis or aphasia ⁵.

Kendall et al considers local vessel damage during labor as primary cause along with haematological changes during pregnancy which makes women more susceptible to hypercoagulable state and if further worsens due to volume depletion ⁶. Anatomical factors like lack of pumping action of muscles in intracranial sinus causes stasis of blood and trabeculations within the sinuses ⁶.

Infectious causes for CVT which were common in olden days have been reduced due to usage of potent broad spectrum antibiotics ⁴. CVT in male alcoholics, dehydration followed by hyper viscosity of blood as a result of heavy alcohol consumption as a possible mechanism for stroke.

In our study alcohol being most common cause of CVT among males. alcohol CVT is being largely unreported or under diagnosed and becomes a great challenge for treating neurophysician. History of binge drinking followed by presence of Headache with seizure, paresis, altered sensorium should arise the suspicion of CVT in alcoholics.

In our study most commonly involved sinus is superior sagittal sinus. Superficial cortical veins drain into superior sagittal sinus against the blood flow in sinus causing turbulence in blood stream and presence of fibrous septa further aggregates it. The above mentioned factors explains why superior sagittal sinus are more commonly affected.

Vascular imaging in CVT includes MRV and conventional angiography. MRV is preferred in acute stage. Contrast MRV being most ideal. MRV can also pick out with Time of flight Technique.

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