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Clinical Profile and Radiological Features in Cerebral Sinus Venous Thrombosis

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Abstract
Background: *Incidence of 3-4 cases / 1 million. Most commonly affects young to middle aged[1] and women[4]. CVST most commonly involves superior saggital sinus (72%) followed by lateral sinus (70%) [2].CVST presents with a wide spectrum of symptoms and signs. MRI with MRV is almost 100% diagnostic. Therefore, a prospective observational study has been undertaken to describe the clinical profile, diagnosis and prognosis of CSVT.*
Patients and Methods: *40 patients of CSVT were taken up for the study and followed until discharge from the hospital or death.*
Conclusion: *Uncommon condition. It is an important cause of stroke especially in the peripartum settings and is one of the common causes of stroke in young.*
Keywords: *Cerebral venous sinus thrombosis, MR Venogram, Young age.*

Introduction

Incidence of 3-4 cases / 1 million. Most commonly affects young to middle aged[1] and women[4].CVST most commonly involves superior saggital sinus (72%) followed by lateral sinus (70%)[2]. CVST presents with a wide spectrum of symptoms and signs[2]. MRI with MRV is almost 100% diagnostic[3]. Therefore, a prospective observational study has been undertaken to describe the clinical profile, diagnosis and prognosis of CSVT.

Materials and Methods

40 patients admitted to General Hospital, MIMS, Vizianagaram, with a confirmed diagnosis of cerebral venous thrombosis were taken up for the study and followed until discharge from the hospital or death.

Follow up - 6 months after discharge

Meticulous history, clinical examination, laboratory investigations were carried out in all cases of CSVT.

Cerebral venous thrombosis was confirmed by CT scan (or) conventional MRI (or) MR venogram.

Inclusion Criteria

Patients aged >18 years, with confirmed diagnosis (based on neuroimaging) of cerebral venous sinus thrombosis were taken up for the study.

Exclusion Criteria

- CT scan inconclusive of CVT
- Hypertensive haemorrhage
- Atherothrombotic stroke
- Metabolic encephalopathies

Results

A total of 40 cases of cerebral sinus venous thrombosis were evaluated in the present study

Table 1: Age Incidence

Age in years	No.of patients	Percentage
18-30	27	67.5
31-40	9	22.5
41-50	2	5
>50	2	5

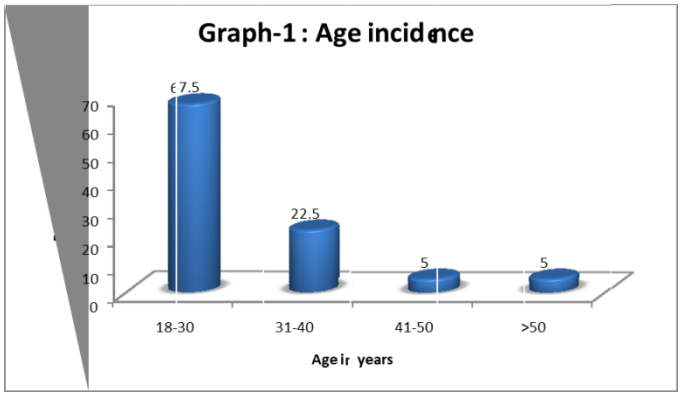
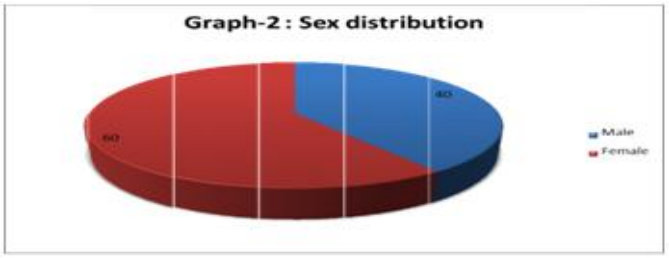


Table 2: Sex Distribution

Gender	No.of patients	Percentage
Male	16	40
Female	24	60
Total	40	100



In the present study, Male : Female is 2:3.

Table 3 Types of CSVT

Types	No.of patients	Percentage
Puerperal	21	52.5
Non puerperal	19	47.5
Total	40	100

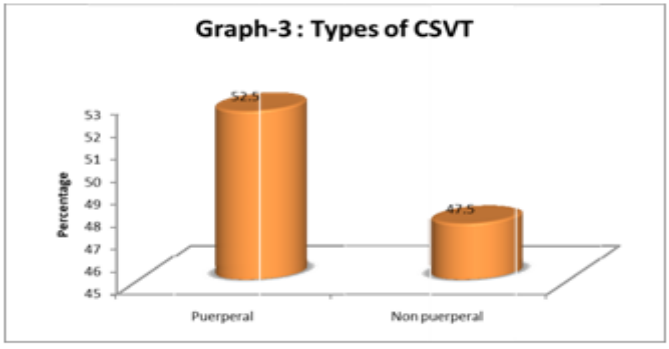


Table 4: Initial symptoms at presentation

Symptom	No.of patients	Percentage
Headache	34	85
Convulsions	26	65
Focal deficits	23	57.5
Altered sensorium	21	52.5
Vomiting	18	45
Fever	11	27.5
Diplopia	4	10

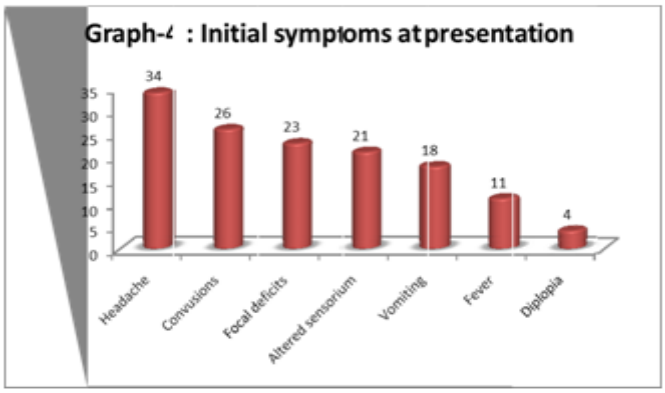


Table 5: Clinical signs at presentation

Types	No.of patients	Percentage
Puerperal	21	52.5
Non puerperal	19	47.5
Total	40	100

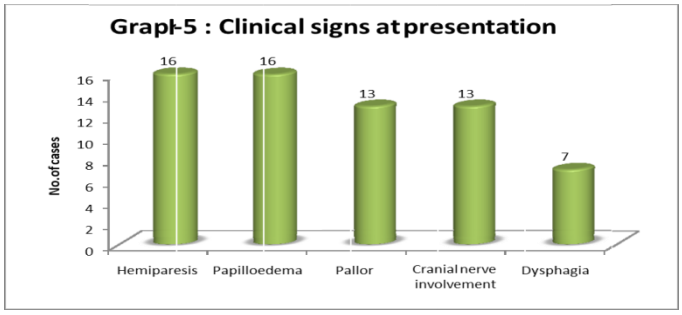


Table 6: Cranial nerve involvement

Cranial nerve involvement	No.of patients	Percentage
3rd nerve	2	15.38
6th nerve	5	38.46
7th nerve	6	46.15
Total	13	100

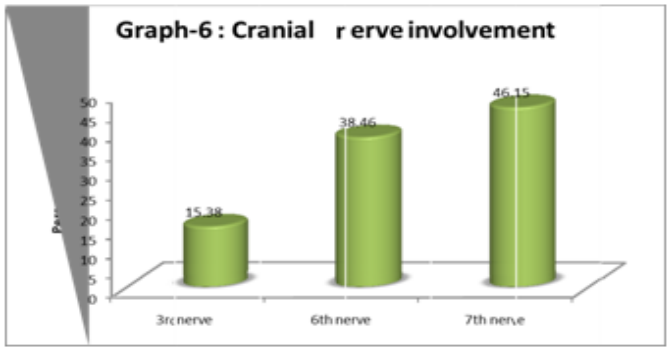


Table 7: Sinus involvement

Sinus involved	No.of patients	Percentage
Superior sagittal sinus	28	70
Transverse sinus	17	42.5
Sigmoid sinus	9	22.5
Jugular sinus	8	20
Straight sinus	7	17.5
Internal cerebral vein	4	10

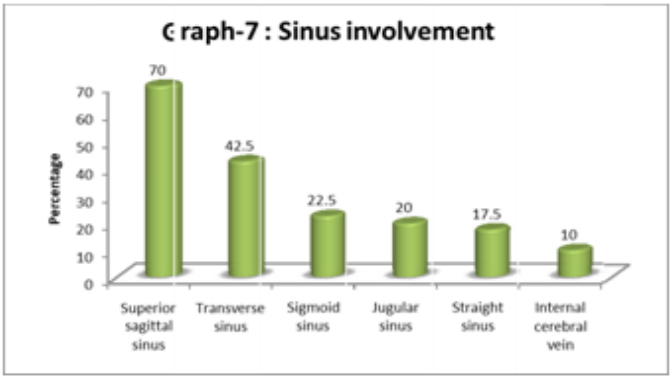


Table 8: CT and MRI findings

Finding	No.of patients	Percentage
HI	22	55
NHI	18	45
EDS	19	47.5
CS	9	22.5

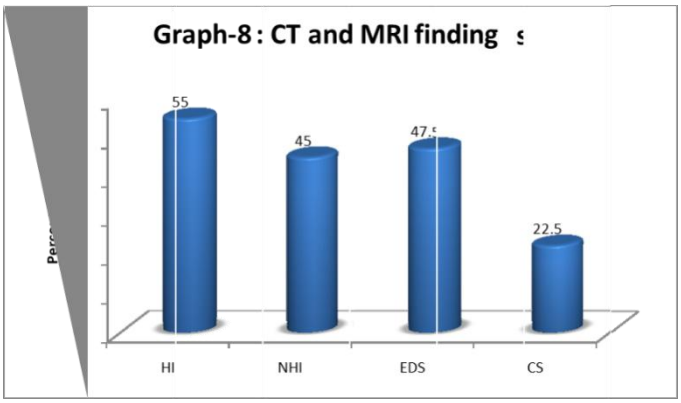
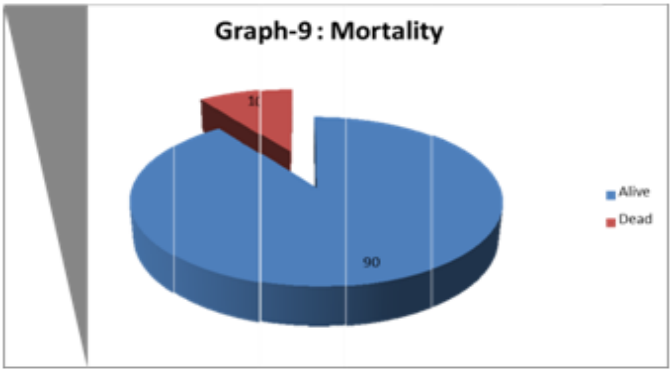


Table 9: Mortality

Status	No.of patients	Percentage
Alive	36	90
Dead	4	10
Total	**40**	**100**



Discussion

M:F ratio in various studies revealed,

Metha SR [5] et al 1:1.5,

Daif et al [7] is 1:1,

Bousser et l [6](1985) is 1.24:1.

In the present study, M:F :: 1:1.5.

Types of CVT patients

The study group consisted of 40 patients. The puerperal CVT group consisted of 21 women (52.5%) and the non-puerperal group consisted of 19

Radiological features

Author	Haemorrhagic infarction	Non-haemorrhatic infarction	Empty delta sign	Cord sign
Nagaraj et al [8] (1989)	40.9%	51.6%	32%	21.9%
Dixit et al (1997)	48.4%	32.3%	32%	23.3%
Present study (2012)	55%	45%	47.5%	22.5%

Sinus involved

Sinuses involved	Ameri et al [2](1992)	Daif et al [7] (1994)	Strolz et al (2005)[8]	Present study (2012)
Superior sagittal sinus	72%	85%	72.2%	70%
Transverse sinus sigmoid sinus	70%	2.5%	38%	42.5%
Sigmoid sinus Jugular sinus	-	32%	20.3% 76%	22.5% 20%
Straight sinus	16%	7%	7.6%	17.5%
Internal cerebral vein	8%	10%	6.3%	10%

Mortality

Author	No.of patients (n)	Percentage (%)
Ameri et al (1992) [2]	110	5.45
Daif et al (1995)[7]	40	10
Debrujin et al (2001)	59	10.17
Mehta SR. et al [5] (2003)	45	4.44
Strolz et al (2005)	79	15
Present study (2012)	40	10

Conclusion

- Uncommon condition.
- It is an important cause of stroke especially in the peripartum settings and is one of the common causes of stroke in young.
- Clinical presentation is extremely varied and

symptoms may evolve over hours to few weeks.

- Important clinical features to suggest this disorder are presentation with recent headache, seizures, papilloedema and focal deficits in the appropriate clinical settings. Neuroimaging plays a pivotal role in diagnosis. MRI with MRV is the current diagnostic modality of choice.
- Management with unfractionated heparin, LMWH and oral anticoagulation is appropriate. surgical decompression is helpful in the case of continuing deterioration, inspite of maximum medical management.
- Contrary to ischemic arterial stroke, CSVT could be described as an 'all or nothing' disease with good short and long term outcomes when the acute phase of illness has been survived

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