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A Presentation of Cerebral Venous Sinus Thrombosis in A 61 Year Old Male

Dr Raghav Mittal,
Affiliated to manipal hospital,patiala

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ABSTRACT
A 61 year old man, presented in emergency with pain in neck and inability to bear weight on right lower limb,loss of consciousness,fall with staring eyes,tonic posturing of limbs, incontinence of urine and some dribbling of saliva from angle of mouth.this episode lasted for around 7-8 minutes.he had been having paresthesias,numbness of the right lower limb and severe headache in the left occiput but was able to manage his routine somehow.the patient was awake,alert and oriented,his pupils were normal reacting,and he was moving all the 4 limbs,but his right lower limb power was 4/5.his jerks were normal.a ncct brain was ordered ,which showed superior sagittal sinus,left transverse and sigmoid sinus thrombosis.cavernous venous sinus thrombosis is rare,majority of the cases are female,with the disparity between males and females due to the use of oral contraceptives by females.

I. INTRODUCTION

Cerebral venous sinus thrombosis is rare, with an estimated 3-4 cases per million annual incidence in adults. while it may occur in all age groups,it is most common in the third decade.75% cases are female.it is a rare finding in males, that too in his early 60s.the use of oral contraceptives in women is behind the disparity between the sexes.[7]

PATIENT HISTORY
The patient is a 61 year old male.

Chief complaint-loss of consciousness+fall

History of presenting illness-a 61 year old man,presented in emergency with pain in neck and inability to bear weight on right lower limb,loss of consciousness,fall with staring eyes,tonic posturing of limbs,had incontinence of urine and some dribbling of saliva from angle of mouth.this episode lasted for around 7-8 minutes.he had been having paresthesias,numbness of the right lower limb and severe headache in the left occiput but was able to manage his routine somehow.the patient was awake,alert and oriented,his pupils were normal reacting,and he was moving all the 4 limbs,but his right lower limb power was 4/5.

The patient has no known past history of any comorbidities.he is a retired colonel of the indian army.he has no significant family history.he used to have 3 drinks of alcohol daily.

CLINICAL EXAMINATION
-Vitals
Pulse-108/minute bp-140/80 mm hg rr-24/minute

-Review of systems and general physical examination

Cns-patient was alert awake oriented.gcs-15/15 , cn 2 to 12 grossly intact,no loss of sensation was there in all 4 extremities,babinski absent b/l,deep tendon reflexes
++/++patellar. Slight weakness in right lower extremity.
Cvs-no chest pain, s1 and s2 normal, ecg shows sinus tachycardia but no st changes respiratory-no shortness of breath, breath sounds normal b/l
Abdomen and genitourinary-no stool or urinary incontinence, abdomen soft,nontender and bowel sounds +

Diagnostic Evaluation

The patient was advised a ct brain in the emergency , which showed superior sagittal sinus, left transverse and sigmoid sinus thrombosis.
No obvious parafalcine hemorrhage/edema was noted on ct.

He subsequently underwent mri venogram and mri diffusion.mri venogram suggested deep venous sinus thrombosis in superior sagittal,left transverse and sigmoid sinus.

Mri diffusion also suggested thrombosis of superior sagittal and left sided posterior fossa sinus,focal cortical edema in left precentral region.no evidence of hemorrhagic infarcts.

Among his laboratory investigations, some significant findings were ggt-176 iu/l(normal range from 5 to 40 iu/l) ,tgs were 224 mg/dl(normal

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levels <150 mg/dl),plasma hemoglobin was 18g/dl(normal range in males from 13.8 to 17.2),his hematocrit was 51.4.(on the higher side,ranges between 40 to 54%).his rpr/vdrl was negative. The patient had elevated hemoglobin,his ggt levels were also above the normal acceptable levels,which besides hepatobiliary dysfunction ,is also a marker for atherosclerotic plaques. His serum cardiolipin ab acl-igm and iga were negative,his plasma folic acid levels were 1.83ng/ml (lower than the biological reference interval of 3.1-17.5), lupus anticoagulant was absent on his blood

Examination.his b2 glycoprotein 1 igg was negative.b2 glycoprotein igm ab was negative.his homocysteine levels were 16.12mmol/l(range lies between 5.46-16.2).his factor v leiden, mutant detection was negative.his apa(phospholipid)-igg were negative.his apa(igm) was negative. Serum mpo- anca was negative.

His fundus examination was done, which showed grade 2 papilledema in the right eye and grade 1 papilledema in the left eye.there was grade 1 hypertensive retinopathy bilaterally.

His peripheral blood picture depicted normocytic and normochromic nrbcs(3-4/100 wbcs) .platelets were mildly reduced in number.leukocytes showed relative neutrophilia. Relative neutrophilia with mild thrombocytopenia was seen.

Diagnosis

The initial presentation of the patient pointed towards two differentials

1. Focal deficit variant pointing towards stroke, hemorrhagic stroke,meningitis, tumor, multiple sclerosis and seizure disorder.
2. Papilledema variant pointing towards idiopathic intracranial hypertension, meningitis or a tumor.[1]

The radiological findings gave an impression of dural venous sinus thrombosis, superior sagittal left transverse and left sigmoid sinus with left parietal acute infarct with tonic seizure.

Management and treatment

The patient was advised admission to the intensive care unit and put on the following treatment regimen

Inj fraxiparine 60 mg s/c bd

Inj levera 1gm stat i/v and 750 mg bd i/v inj monocef 2 gm stat and 1 gm bd i/v inj pantocid 40 mg bd i/v

Inj optineuron 1 ml i/m od

Follow Up And Outcome

The patient was admitted to the icu and evaluated everyday.the patient was alert, awake and oriented during evaluation.he was moving all 4 of his limbs and his right lower limb power was improving.his subsequent platelet count came out to be 146000

He was advised a carotid doppler, and the radiological investigation was suggestive of thin circumferential atherosclerotic wall calcifications in proximal left internal carotid artery without causing any significant luminal narrowing /flow related changes.this finding was significant in view of his elevated ggt levels previously.

The patient had a generalised tonic clonic seizure episode of approximately 5 minutes

The coming morning at 7am.he was given a stat dose of lorazepam and he eventually recovered from the episode. The patient was eventually alert ,awake and oriented and was moving all 4 limbs.his right lower limb power was around 4+/5 whereas power in all other limbs was 5/5.the patient was afebrile ,hemodynamically maintained and his platelet count had fallen to 134000.the treatment chart was revised and the patient was treated accordingly . His serim thrombophilia profile was sent.his serum cardiolipin ab acl-igm and iga were negative,his plasma folic acid levels were 1.83ng/ml (lower than the biological reference interval of 3.1-17.5), lupus anticoagulant was absent on his blood examination.. His b2 glycoprotein 1 igg was negative.b2 glycoprotein igm ab was negative.his homocysteine levels were 16.12mmol/l(range lies between 5.46-16.2).his factor v leiden, mutant detection was negative.his apa(phospholipid)-igg were negative.his apa(igm) was negative. Serum mpo- anca was negative.his peripheral blood picture gave the impression of relative neutrophilia with mild thrombocytopenia.his rbcs were normocytic and normochromic.

His fundus examination was done, which showed grade 2 papilledema in the right eye and grade 1 papilledema in the left eye.there was grade 1 hypertensive retinopathy bilaterally.

The patient subsequently had no fresh issues and was alert,awake ,oriented and was obeying all commands.in view of all this,the patient was shifted to high dependency unit from the intensive care unit,the treatment chart was revised and he was treated accordingly.

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Over the course of time, his hematocrit had fallen down from 51.4 to 44.5,his hemoglobin had fallen down from 18 to 16g/dl and his rbc count had fallen down from 5.43 to 4.66 per cubic mm.he was alert,awake,oriented and was obeying all commands,he had no fresh headache episode,no seizures,he was hemodynamically maintained,his urinary output was good.

A ct chest and abdomen was done which showed diffuse fatty infiltration of the liver.an mr venogram was done which gave an impression of patchy opacification in the superior sagittal sinus,.thinning irregularity and collaterals in left posterior fossa dural venous sinuses which was suggestive of early partial recanalisation changes,compared to mrv study from the day of presentation in emergency.in view of these changes,the patient was planned for discharge.he was advised the following treatment regimen on discharge

Tab levera 1gm bd tab pantocid 40mg bd
Tab thiamine 100 mg bd
Tab pcm 500mg sos (for headaches) tab cloba 10mg od
Tab shelcal 500mg od tab apixaban 5mg bd

Tab telmisartan 40 mg od tab folic acid 5mg od
Vitamin d sachet 60000 units/week lubrex eye drops 2 drops tds
Tab supradyn multivitamin od
The patient was advised to follow up with his primary physician after 5 days or sos in case of any emergency.

II. DISCUSSION

Venous sinus thrombosis can occur due to anything that predisposes to clot formation.it can be due to any underlying prothrombotic state, such as inherited coagulopathies , malignancy ,infection or trauma.the condition is mostly found in females due to their increased predisposition to procoagulant states. Factors such as oral contraceptive use, pregnancy can lead to development of cerebral venous sinus thrombosis in females.it is a rare but significant finding in males.it can also occur due to blood disorders such as polycythemia vera, as well as in dehydration. Multiple studies have been carried out across wards and intensive care units to prove it .

One such hospital based descriptive study was carried out in 3 major hospitals in khartoum,sudan with radiologically confirmed cerebral venous sinus thrombosis, which concluded that cerebral venous sinus thrombosis is mainly a disease of child-bearing women, although significant proportions of men were affected.about 37 patients participated in this study. The socio-demographic characteristic varied.the median age was 35 years; the range was 52 years with an iqr of 16 years a minimum age of 23 years and maximum age of 75 years. The largest group (n = 18, 48.6%) was in the range between “26–35” years. The gender distribution; (n = 8; 21.6%) were males and (n = 29; 78.4%) were female, with the majority of patients being female, (n = 15; 40.5%) from rural areas, while (n = 22; 59.5%) from urban areas.[2]

Even the clinical presentation of the patients who were diagnosed with cerebral venous sinus thrombosis(cvst) in the 37 patients varied a lot. Most of the patients presented with headache (n = 35; 94.6%) as a major presenting symptoms, followed by blurring of vision (n = 25; 67.6%), while seizures was a presenting symptom in nearly half of the patients (n = 17; 45.9%), altered level of consciousness occurred in (n = 13; 35.1%), vomiting in (n = 11; 29.7%), unilateral weakness in (n = 10; 27.0%), unilateral numbness in (n = 5; 13.5%) and less likely speech difficulties which comprised only (n = 4; 10.8%) and symptoms related to cranial nerve involvement (5.4%). However, the difference between males and females in the clinical presentation was not statistically significant except in the unilateral weakness and cranial nerves involvement which showed a p-value of 0.021 and 0.042 respectively. Most of the patients had papilledema(n = 31; 83.8%), while (n = 12; 32.4%) had unilateral motor deficit, (n = 5; 13.5%) had unilateral sensory deficit, while only (n = 2; 5.4%) had cranial nerve involvement.[2]

The risk factors for cerebral venous sinus thrombosis in the study depicted that postpartum period comprised nearly the third (n = 9 out of 29 females; 31%), followed by ladies with the use of ocps (n = 8 out of 29 females; 27.6%), while (n = 4 out of 29 females; 13.8%) were pregnant. Malignancy was found in (n = 3; 8.1%) “two cns tumors and one breast tumor”, while infection “mastoiditis” was found in only one patient (n = 1; 2.7%). No risk factor identified was present in about a third of the patients (n = 12; 32.4%)[2]

III. CONCLUSION

The findings of cerebral venous sinus thrombosis in an aged male over 60 years is very rare.this condition is primarily associated with females because of their tendency to exist in prothrombotic states which promotes clot formation,which can be due to pregnancy or oral contraceptive use.the patient was a retired male

over 60 years with no past history of any significant disease.from the study,we can conclude that this study that cerebral venous sinus thrombosis is a rare significant finding in males,even rarer to find in people over 60 years.the patient had no malignancy,no infection,no states of thrombophilia,no systemic disease.from the history taken from the patient as well as his relatives,the only significant past history i could ascertain was that he used to have 3 pegs of whisky everyday.his clinical presentation ,however,such as unilateral limb motor deficit,papilledema,headache and seizures were all very prominent clinical presentation features from the survey.

REFERENCES

[1]. Gokey R, M Das J. Venous Sinus Thrombosis. [Updated 2023 Jul 31]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2023 Jan-. Available from: https://www.ncbi.nlm.nih.gov/books/NBK560598/

[2]. Etedal Ahmed A. Ibrahim, Rofiedah Eisa Hassan Mohamed, Khabab Abbasher Hussien Mohamed Ahmed, Mazin S. Haroun, Yassin Abdelrahim Abdalla, Mohammed Eltahier Abdalla Omer, Mohammed Mahmmoud Fadelallah Eljack,Clinical profile and risk factors of cerebral venous sinus thrombosis (CVST) in Sudan: A multicenter cross-sectional study,Annals of Medicine and Surgery, Volume 84,2022,104891,ISSN 2049-0801,https://doi.org/10.1016/j.amsu.2022.104891.https://www.sciencedirect.com/science/article/pii/S204908012201651X)

[3]. Al-Sulaiman, Abdulla. Clinical Aspects, Diagnosis and Management of Cerebral Vein and Dural Sinus Thrombosis: A Literature Review. Saudi Journal of Medicine & Medical Sciences 7(3):p 137-145, Sep–Dec 2019. | DOI: 10.4103/sjmms.sjmms_22_19

[4]. Einhäupl K, Bousser MG, de Bruijn SF, et al. (2006). "EFNS guideline on the treatment of cerebral venous and sinus thrombosis". Eur. J. Neurol. **13** (6): 553–9. doi:10.1111/j.1468-1331.2006.01398.x. PMID 16796579. S2CID 17618264.

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6.dr sumeet jhingan
Consultant intensivist,manipal hospital,patiala
7.dr guneet singh
Consultant intensivist ,manipal hospital,patiala

TABLES AND FIGURES

Table 1. Showed the Demographic characteristics of the patients who were diagnosed with Cerebral Venous Sinus Thrombosis (CVST) (n = 37).[2]

	Demographic data	Frequency	Percentage %
Age Group	< 25	3	8.1
	26–35	18	48.6
	36–45	9	24.3
	46–55	2	5.4
	>56	5	13.5
Gender	Male	8	21.6
	Female	29	78.4
Educational Level	Illiterate	6	16.2

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	Demographic data	Frequency	Percentage %
	Basic/primary	5	13.5
	Secondary	14	37.8
	University/post Graduate	12	32.4
Working status	Worker	15	40.5
	Retired	1	2.7
	not worker	21	56.8
Marital status	Single	3	8.1
	Married	30	81.1
	Widower	4	10.8
	Divorced	0	0
Residence	Rural	15	40.5
	Urban	22	59.5

Table 2. Showed the clinical presentation of the patients who were diagnosed with Cerebral Venous Sinus Thrombosis (CVST) (n = 37).[2]

Clinical Presentation n(%)	Gender		Total (%)	P value
	Male n(%)	Female n(%)		
Headache	7(87.5)	28(96.6)	35(94.6)	.3
Unilateral Weakness	5(62.5)	5(17.2)	10(27)	**.02***
Unilateral Numbness	1(12.5)	4(13.8)	5(13.5)	.7
Vomiting	2(25)	9(31)	11(29.7)	.5
Seizure	3(37.5)	14(48.3)	17(45.9)	.4
Blurred Vision	7(87.5)	18(62.1)	25(67.6)	.1
Speech Difficulties	2(25)	2(6.9)	4(10.8)	.1
Altered Level Of Consciousness	4(50)	9(31)	13(35.1)	.2
Unilateral Motor Focal Deficit	5(62.5)	7(24.1)	12(32.4)	0.05
Unilateral Sensory Focal Deficit	1(12.5)	4(13.8)	5(13.5)	0.7
Cranial Nerve Involvement	2(25)	0(0)	2(5.4)	**0.04***
Papilledema	8(100)	23(79.3)	31(83.8)	0.2

*p value is significant "less than <0.05″

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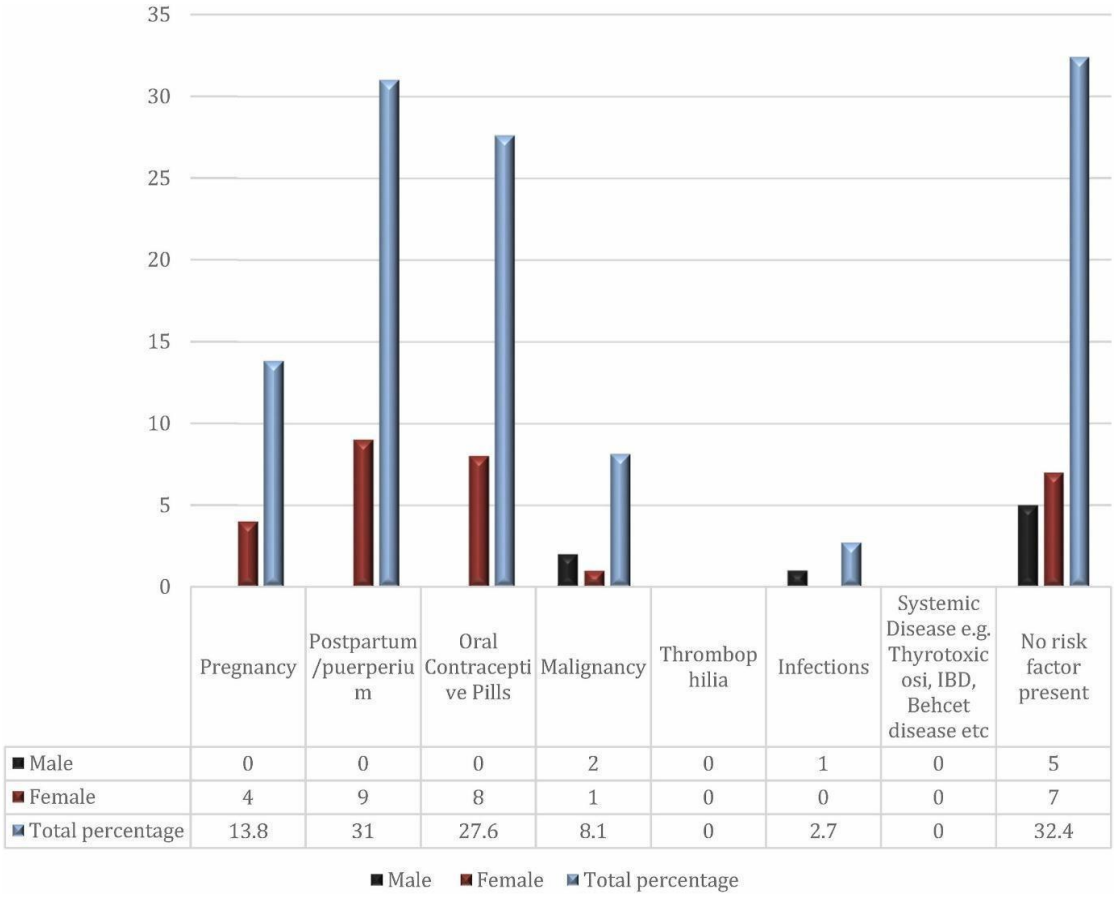
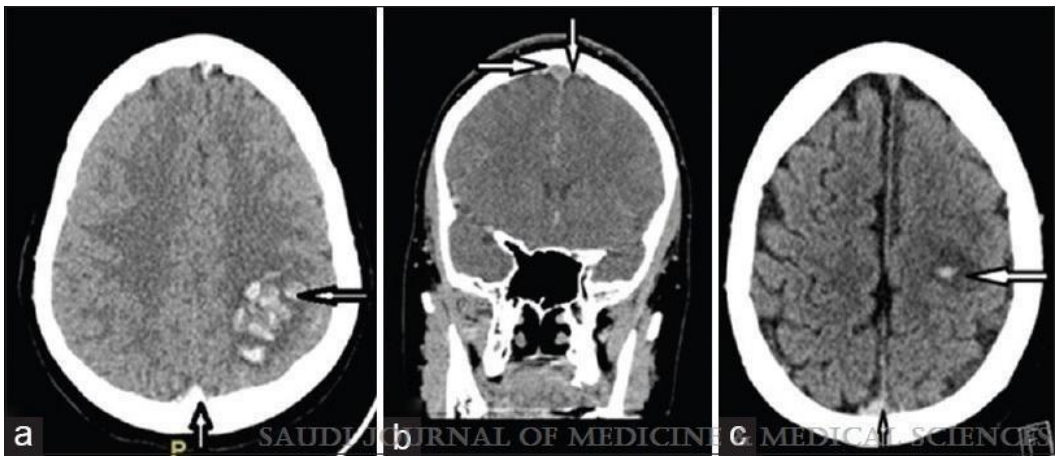


	Pregnancy	Postpartum /puerperium	Oral Contraceptive Pills	Malignancy	Thrombophilia	Infections	Systemic Disease e.g. Thyrotoxicosi, IBD, Behcet disease etc	No risk factor present
Male	0	0	0	2	0	1	0	5
Female	4	9	8	1	0	0	0	7
Total percentage	13.8	31	27.6	8.1	0	2.7	0	32.4



Radiological findings in computed tomography and computed tomography venography of patients with CVST: (a) Plain noncontrast computed tomography scan axial view showing dense triangle sign and left parietal heterogenous hemorrhage in a patient with superior sagittal sinus thrombosis. (b) Coronal image of computed tomography venography of the same patient (a) showing filling defect in superior sagittal sinus. (c) Plain noncontrast computed tomography scan axial view of another patient showing dense triangle sign and left parietal small hemorrhage surrounded by hypodensity in a patient with superior sagittal sinus.[3]

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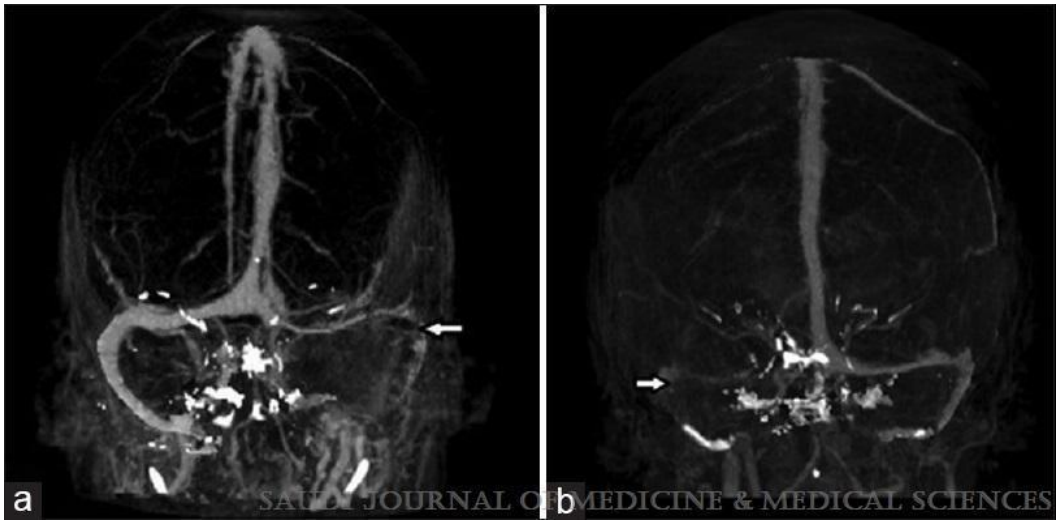

Maximum intensity projection images of computed tomography venography showing (a) nonvisualization of left transverse and sigmoid sinus and (b) nonvisualization of left transverse and sigmoid sinus.[3]

Informed consent

Informed consent was obtained from the patient for publication.

Ethical considerations

No ethical dilemma related to the case.due permission was taken to collect the data from the higher authorities.

Abbreviations

- Ncct-non contrast computed tomography
- Mri-magnetic resonance imaging
- Ggt-gamma -glutamyl transpeptidase
- Tgs-triglycerides
- Rpr/vdrl-rapid plasma reagin/venereal disease research laboratory