

**Case Report****Case of AV Dural fistula**Rashmi Nagdive<sup>1</sup>, Anubhav Chakraborty<sup>2</sup>, Rajesh Gosavi<sup>3</sup>**ABSTRACT**

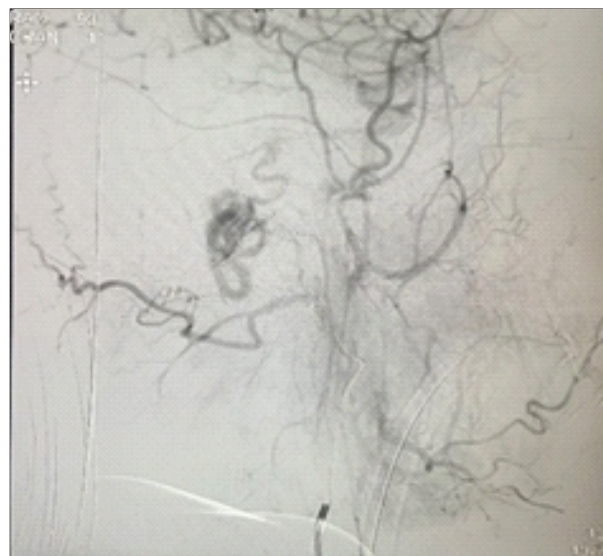
Dural arteriovenous fistulas (dAVF) are vascular abnormalities in which arteries arising from branches of the carotid or vertebral arteries drain directly into the dural leaflets of the venous sinuses. We present a case of AV Dural fistula in a 36 year old male patient. Patient was admitted as a case of intra cranial hemorrhage and was subsequently found to have AV Dural fistula.

**Case :**

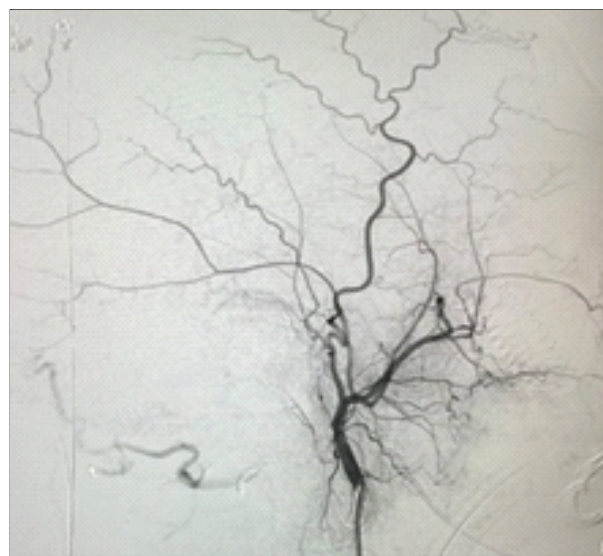
36 year old male patient came with the complaints of sudden onset headache, multiple episodes of vomiting and altered sensorium since 1 day. There was no history of any Co-morbidity. On examination patient was irritable, pulse was 100/min, BP was 110/70 mmHg, SPO2 was 97% on room air. Heart sounds were normal, crepitations were present bilaterally. GCS was E4 V4 M5, pupils were normal, plantars were bilaterally flexor, right sided cerebellar signs were present. CT head plain was suggestive of intra parenchymal hemorrhage of volume 9cc in right cerebellar hemisphere with intraventricular extension and sub arachnoid hemorrhage and sub dural hemorrhage. ECG was normal.

Digital subtraction angiography was done, it showed high flow AV dural venous fistula between meningeal branch of cavernous portion of left internal carotid artery and superior petrosal sinus via cerebellar cortical vein (COGNARD TYPE 4 AND BORDEN 3).

Successful embolization of the fistula was done under radiographic guidance in addition to Standard of Care. Patient improved symptomatically and was discharged in a stable condition.



**Figure 1 : High Flow A-V Fistula with venous malformation**



**Figure 2 : Post Embolization**

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Received on 1st June 2021

Accepted on 15th June 2021

**Laboratory data :**

Variable	Reference range	Observed value
Hemoglobin (g/dl)	11 -15	14.2
WBC (per microlitre)	4000-11000	9800
Platelets (per microlitre)	140000-450000	232000
Blood urea (mg%)	15-45	34
Serum creatinine (mg%)	0.5-1.5	0.9
Sodium (mmol/l)	135-150	142
Potassium (mmol/l)	3.5-4.5	4.1
Total Protein (g%)	5.5-7.5	7.1
Total Bilirubin (mg%)	0.2 -1.2	0.7
Alkaline Phosphatase (IU)	96-280	92
Alanine Transaminase (U/UL)	8-55	36
Aspartate Transaminase (u/UL)	8-40	24
Triglyceride (mg%)	80-150	100
Total cholesterol (mg%)	150-200	121
HDL cholesterol (mg%)	35-60	31
LDL cholesterol (mg%)	130-160	67
INR		1.2

**Discussion :**

Dural Arterio-Venous fistulas (dAVF) are a heterogeneous collection of conditions that share arteriovenous shunts from dural vessels. They present variably with hemorrhage or venous hypertension and can be challenging to treat. Most dural arteriovenous fistulas present in adulthood and account for 10-15% of all cerebral vascular malformations. Clinical presentation is highly variable and depends on the location of the supplying and draining vessels, as well as the presence of complications. It may include pulsatile tinnitus, cranial nerve palsies, seizures, orbital symptoms, hemorrhage, raised intracranial pressure & focal neurological deficits. Diagnostic tools include CT scan, MRI and Digital Subtraction Angiography. Two classifications are most commonly used : Cognard & Borden classification.

Treatment largely depends on the classification of the fistula and the age and comorbidities of the patient, as well as the presence of symptoms directly attributable to the fistula. It may be conservative in

Borden	Cognard	Bleeding risk (%)
Type I: DVS/MV outflow only	Type I: DVS/MV outflow only Type II A: DVS/MV outflow only (retrograde)	≤2
Type II: DVS/MV outflow and RLVD	Type II B: DVS/MV outflow (anterograde) and RLVD Type II A+B: DVS/MV outflow (retrograde) and RLVD	40
Type III: RLVD only	Type III: RLVD only (no venous ectasia) Type IV: RLVD only (with venous ectasia) Type V: RLVD only (into spinal perimedullary veins)	80–100

DVS, dural venous sinus; MV, meningeal vein; RLVD, retrograde leptomeningeal venous draining.

low grade cases and higher grades (Borden types II and III, Cognard types IIb-V) have an annual mortality rate of ~10% and an annual risk of intracranial hemorrhage of ~8%<sup>6</sup>, so endovascular, surgical resection or stereotaxic radiosurgery can be used.

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