



Guidelines for AB-PM JAY Package

Arteriovenous Malformation (AVM)/Thrombectomy

Procedures covered: 1

Specialty: Neurosurgery

Package name	Procedure name	HBP 2022 code	HBP 2022 code	Package price (INR)
Embolization-Arteriovenous Malformation (AVM)	Embolization-Arteriovenous Malformation (AVM)/Thrombectomy	New Package	SN064A	Rs.175000 Including Implant Cost

ALOS: 7 days

Minimum qualification of the treating doctor:

Essential: MCH/DNB/ (Neurosurgery)

Special empanelment criteria/linkage to empanelment module: Tertiary Hospital with well-equipped OT & ICU.

Disclaimer:

For monitoring and administering the claim management process of NHA shall be following these guidelines. This document has been prepared for guidance of PROCESSING TEAM and TRANSACTION MANAGEMENT SYSTEM of AB PM-JAY for the claims of procedures mentioned above. The hospitals can also refer to this document so that they have the insight on how the claims will be processed. However, this document doesn't provide any guidance on clinical and therapeutic management of patient. In that respect the hospitals and physicians may refer to any other relevant material as per the extant professional norms.

PART I: GUIDELINES FOR CLINICIANS AND HEALTHCARE PROVIDERS

1.1 Objective:

The purpose of this section is to act as a guidance & a clinical decision support tool for the clinicians in deciding the line of treatment, plan clinical management of patient and decide referral of cases to the appropriate level of care (as required) for treatment of patients under PMJAY and selection of corresponding Health Benefit Package.

It will also serve as a tool for hospitals to determine and submit the mandatory documents required for claiming reimbursement of health benefit package under PMJAY.



1.2 Clinical key pointers:

A brain arteriovenous malformation (AVM) is a tangle of abnormal blood vessels connecting arteries and veins in the brain. The arteries are responsible for taking oxygen-rich blood from the heart to the brain. Veins carry the oxygen-depleted blood back to the lungs and heart. A brain AVM disrupts this vital process. An arteriovenous malformation can develop anywhere in your body but occurs most often in the brain or spine. Even so, brain AVMs are rare and affect less than 1 percent of the population.

Symptoms of peripheral AVMs include A brain arteriovenous malformation may not cause any signs or symptoms until the AVM ruptures, resulting in bleeding in the brain (haemorrhage). In about half of all brain AVMs, haemorrhage is the first sign.

But some people with brain AVM may experience signs and symptoms other than bleeding related to the AVM.

In people without haemorrhage, signs and symptoms of a brain AVM may include:

- Seizures
- Headache or pain in one area of the head
- Muscle weakness or numbness in one part of the body

Some people may experience more-serious neurological signs and symptoms, depending on the location of the AVM, including:

- Severe headache
- Weakness, numbness, or paralysis
- Vision loss
- Difficulty speaking
- Confusion or inability to understand others
- Severe unsteadiness

Etiology: Not much is known about the etiology of brain AVMs. The cause of brain AVMs is yet unknown, however, it is possibly multifactorial; apparently both genetic mutation and angiogenic stimulation (the physiological process of formation of new blood vessels from pre-existing vessels) playing roles in AVM



development. Some believe that AVMs develop in utero. While others advocate an angiopathic reaction, following either a cerebral ischemic or hemorrhagic event (subtypes of stroke) as a primary factor in their development.

Diagnostic: Evaluation and Clinical Management of Arteriovenous Malformations (AVMs) in Brain:

- Thorough history and physical examination.
- Signs or symptoms.
- Imaging Modalities – A variety of imaging modalities like DSA CT/MRI, Cerebral Arteriography are used to evaluate the nature, extent, and complexity of the malformation and to help to plan appropriate line of management.

Treatment: Surgery is the most common treatment for brain AVMs. There are three different surgical options for treating AVMs:

- **Surgical removal (resection).** If the brain AVM has bled or is in an area that can easily be reached, surgical removal of the AVM via conventional brain surgery may be recommended. In this procedure, your neurosurgeon removes part of your skull temporarily to gain access to the AVM. With the help of a high-powered microscope, the surgeon seals off the AVM with special clips and carefully removes it from surrounding brain tissue. The surgeon then reattaches the skull bone and closes the incision in your scalp. Resection is usually done when the AVM can be removed with little risk of haemorrhage or seizures. AVMs that are in deep brain regions carry a higher risk of complications. In these cases, your doctor may recommend other treatments.
- **Endovascular embolization.** In this procedure, your doctor inserts a long, thin tube (catheter) into a leg artery and threads it through blood vessels to your brain using X-ray imaging. The catheter is positioned in one of the feeding arteries to the AVM, and injects an embolizing agent, such as small particles, a glue-like substance, micro coils, or other materials, to block the artery and reduce blood flow into the AVM. Endovascular embolization is less invasive than traditional surgery. It may be performed alone but is frequently used prior to other surgical treatments to make the procedure safer by reducing the size of the AVM or the likelihood of bleeding. In some large brain AVMs, endovascular embolization may be used to reduce stroke-like symptoms by redirecting blood back to normal brain tissue.
- **Stereotactic radiosurgery (SRS).** This treatment uses precisely focused radiation to destroy the AVM. It is not surgery in the literal sense because there is no incision. Instead, SRS directs many highly targeted radiation beams at the AVM to damage the blood vessels and cause scarring. The scarred AVM blood vessels then slowly clot off in one to three years following treatment. This treatment is most appropriate for small AVMs that are



difficult to remove with conventional surgery and for those that haven't caused a life-threatening haemorrhage.

1.3 Mandatory documents- For healthcare providers

Following documents should be uploaded by the concerned hospital staff at the time of pre-authorization and claims submission:

Mandatory document	Embolization- Arteriovenous Malformation (AVM) in Brain
i. At the time of Pre-authorization	
a. Clinical notes including history, vitals, physical examination findings with planned line of treatment	Yes
b. DSA Report	Yes
c. CT/MRI report	Yes
ii. At the time of claim submission	
a. Detailed Indoor Case Papers	Yes
b. Detailed Procedure / Operative notes	Yes
c. DSA image with coils/embolizing agents.	Yes
d. Invoice / bar code of used coil/embolizing agent	Yes
e. Detailed discharge summary	Yes



PART II: GUIDELINES FOR TRANSACTION MANAGEMENT SYSTEM (TMS)

3.1 Objective: To enable setting up of cross check mechanisms/rule engines within the IT platform (TMS) to ensure compliance with STGs and to prevent fraud / abuse of the Health Benefit Package.

3.2 Below mentioned are the scenarios where a provision would be built in TMS for pop-ups:

1. Was the patient DSA/ CT/MRI report suggestive for AVMembolization? Yes

Till the time the functionality is being developed, the processing doctors shall check the above manually.

References:1. Li W, Sun Q, Duan X, Yi F, Zhou Y, Hu Y, Yao L, Xu H, Zhou L. [Etiologies and risk factors for young people with intracerebral hemorrhage]. Zhong Nan Da Xue Bao Yi Xue Ban. 2018 Nov 28;43(11):1246-1250.

2. Caranfa JT, Baldwin MT, Rutter CE, Bulsara KR. Synchronous cerebral arteriovenous malformation, and lung adenocarcinoma carcinoma brain metastases: A case study and literature review. Neurochirurgie. 2019 Feb;65(1):36-39.

3. Khandelwal A, Chaturvedi A, Singh GP, Mishra RK. Intractable brain swelling during cerebral arteriovenous malformation surgery due to contralateral acute subdural hematoma. Indian J Aneesh. 2018 Dec;62(12):984-987.

4. <https://www.mayoclinic.org/diseases-conditions/brain-avm/symptoms-causes/syc-20350260>.

