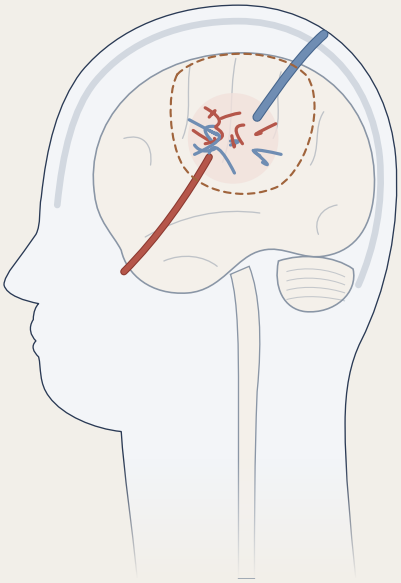
Professor Jason John Labuschagne
PAEDIATRIC AND ADULT NEUROSURGEON

ADULT NEUROSURGERY

Surgery for Arteriovenous Malformation (AVM)

Patient information and consent



This booklet explains brain arteriovenous malformations and their surgical removal. Please read it with your family, write down your questions and bring it to your consultation. You will be asked to sign the consent section only once you understand the proposed treatment and are satisfied that your questions have been answered.

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PATIENT DETAILS OR HOSPITAL LABEL

Patient name

Date of birth

ID / file no.

Procedure date

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Netcare Unitas Hospital
Room 403, Centurion

Nelson Mandela Children's Hospital
Private Suites, First Floor, 6 Jubilee Road, Parktown North

012 664 6026
HPCSA MP 0530077

01 General information

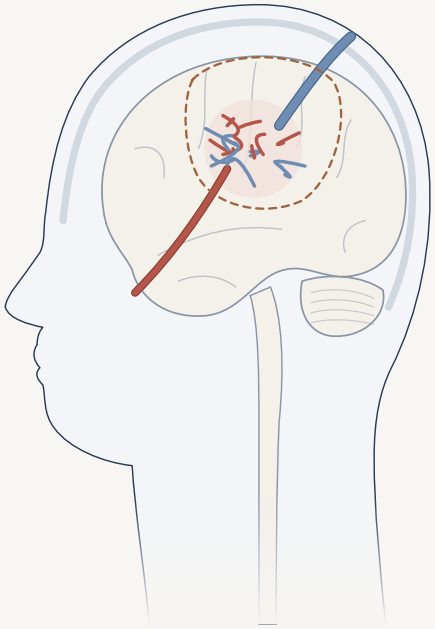
What is an AVM?

An arteriovenous malformation is a tangle of abnormal blood vessels in which arteries connect directly to veins, without the normal network of tiny capillaries between them. Blood flows through the tangle (the nidus) under high pressure, and the walls of the vessels may be weak. AVMs are present from early life and are often discovered after a bleed, a seizure, headaches or by chance on a scan.

The main risk is bleeding into the brain. The yearly risk depends on whether it has bled before and on its features; Professor Labuschagne will discuss the estimate for your AVM.

How is the operation performed?

An angiogram is performed beforehand to map the feeding arteries and draining veins. The AVM may first be partly blocked from inside the vessels (embolisation) by an interventional neuroradiologist, to make surgery safer. At craniotomy, under the microscope, the feeding arteries are sealed one by one, the tangle is separated from the brain around it, and the draining vein is divided last. The aim is complete removal, confirmed with an angiogram during or after surgery.



An AVM: arteries feed a tangle of abnormal vessels that drains directly into an enlarged vein. Surgery removes the tangle completely.

02 Alternatives to surgery

- **Stereotactic radiosurgery (Gamma Knife)**, suitable for smaller AVMs, particularly deep ones; closure takes one to three years, during which bleeding can still occur.
- **Embolisation**, usually as preparation for surgery or radiosurgery, and occasionally on its own.
- **Observation**, which may be advised for unruptured AVMs where the risks of treatment are higher than the natural risk.
- A combination of these, planned by the neurovascular team.

03 What to expect during and following surgery

Before admission

- Tell us about any bleeding or clotting problems, recent illness, allergies and all medicines, including herbal remedies.
- Blood-thinning medicines (for example warfarin, aspirin, clopidogrel or the newer anticoagulants) and anti-inflammatories usually need to be stopped before surgery. Please follow the specific instructions you are given and do not stop any medication without advice.
- You will usually be admitted on the day of surgery or the day before, and must not eat from midnight before surgery, or as instructed by the anaesthetist.

In hospital

You wake up in the recovery room and are then transferred to the ward, or to a high-care or intensive care unit for the first night. Nurses will regularly check your pulse, blood pressure, limb strength, pupils and level of alertness to detect any change early, and you will be woken for these checks during the first night.

- You will have regular pain relief and anti-nausea medicine.
- A drip and sometimes a urinary catheter are usually removed within a day or so.
- You will be encouraged to sit out of bed and walk on the day after surgery.
- **Blood pressure** is carefully controlled for several days after surgery.
- An **angiogram** confirms complete removal.
- **Going home.** Most patients go home after about five to seven days, once comfortable and walking safely. Some go home sooner.

04 Risks and complications

All surgery carries risk. Most patients do not experience serious complications, but it is important that you understand what can happen. The list is not exhaustive; Professor Labuschagne will discuss the risks that apply particularly to you. The risks of the anaesthetic will be explained separately by the anaesthetist.

Common

●●●

- Headache, nausea and tiredness.
- Swelling and bruising of the face and eyelid.

Less common

- **Seizures**, which may need medication.
- **Wound infection**, or infection of the bone flap, occasionally needing removal of the bone.
- **Leakage of cerebrospinal fluid** from the wound.
- **Blood clots in the legs or lungs (DVT/PE)**, reduced by stockings, early walking and blood thinners.
- General complications such as pneumonia, urinary infection or heart problems.
- **Incomplete removal**, requiring further surgery or radiosurgery.
- Need for blood transfusion.

Rare but serious

- **Bleeding** within the brain or around it, which may need a return to theatre.
- **Stroke**, causing weakness, speech or vision problems that may be permanent.
- **Brain swelling** or hydrocephalus.
- Meningitis.
- **Bleeding or swelling** in the surrounding brain after removal, as it adjusts to normal blood flow.
- **Stroke** from loss of normal vessels near the AVM, with permanent deficit.
- Coma or death. These are rare.

RISKS PARTICULAR TO THE POSITION OF MY AVM (TO BE COMPLETED BY PROFESSOR LABUSCHAGNE)

05 After the operation: what is normal

- **Headache** that changes in character as the bone and scalp heal, usually settling over several weeks.
- **Swelling and bruising** around the eye or face on the side of the operation, worst on the second or third day.
- **Numbness** around the scar, which usually shrinks over months.
- **Jaw stiffness** when chewing, if the muscle at the temple was opened.
- **Tiredness, poor concentration and low mood**, which can last weeks to months. A clicking or fluid sensation under the bone flap for a few weeks is common.

06 Recovery

- **Wound.** Stitches or staples are removed at about seven to ten days. You may shower and gently wash your hair after about three to five days unless told otherwise.
- **Activity.** Walk daily and increase activity gradually. Avoid heavy lifting, contact sport and swimming until reviewed.
- **Medication.** Steroids, if used, are reduced gradually as directed; do not stop seizure medication without advice.
- **Driving.** You may not drive until cleared; this is usually at least three months after brain surgery, and longer after a seizure.
- **Work.** Most people need four to twelve weeks off work, depending on their recovery and occupation.
- **Follow-up.** In the rooms at about four to six weeks, usually with a scan. Further treatment is planned at a multidisciplinary meeting where relevant.
- **Seizures** may continue for a while after removal; continue medication as prescribed.
- **Long term.** A follow-up angiogram, particularly in young patients, confirms that the AVM has not returned.

07 When to contact the rooms

Please contact the rooms the same day, or go to the nearest emergency department, if you notice:

- Increasing headache not relieved by your usual pain relief
- Increasing drowsiness or confusion
- A seizure (fit), or a fainting spell
- New or worsening weakness, numbness or difficulty walking
- New difficulty speaking or understanding
- New problems with vision
- Persistent nausea or vomiting
- Fever, chills or a stiff neck
- Redness, swelling, discharge or clear fluid leaking from the wound
- Calf pain or swelling, chest pain or shortness of breath

IN AN EMERGENCY

If you have a seizure that does not stop, a sudden severe headache, collapse, chest pain or difficulty breathing, call an ambulance or go to the nearest emergency department immediately. Tell the staff about your recent operation and ask them to contact Professor Labuschagne.

THE ROOMS · OFFICE HOURS

012 664 6026

Elective appointments and queries, office hours, for both Netcare Unitas Hospital and Nelson Mandela Children's Hospital

AFTER HOURS

After hours, call the hospital switchboard and ask for Professor Labuschagne: Netcare Unitas Hospital 012 677 8000 · Nelson Mandela Children's Hospital 010 133 0600

Emergency services: Netcare 911 · 082 911 | National ambulance · 10177

NETCARE UNITAS HOSPITAL

Room 403, Netcare Unitas Hospital
866 Clifton Avenue, Lyttelton, Centurion

NELSON MANDELA CHILDREN'S HOSPITAL

Private Suites, First Floor
6 Jubilee Road, Parktown North, Johannesburg

08 Consent

Informed consent is a conversation, not simply a signature. The National Health Act 61 of 2003 and the ethical guidelines of the Health Professions Council of South Africa (HPCSA) give every patient the right to be told, in a language they understand, about their condition, the treatment options available, the benefits, risks, costs and consequences of each, and the right to refuse treatment. You may withdraw your consent at any time before the operation.

If you are unable to give consent yourself, the National Health Act (section 7) allows consent to be given by a person you have authorised in writing or, failing that, by your spouse or partner, parent, grandparent, adult child or sibling, in that order.

THE PROCEDURE

Procedure: Craniotomy and excision of arteriovenous malformation (± pre-operative embolisation) Side / site: _____

Condition, in my own words: _____

SPECIFIC PERMISSIONS

Blood transfusion, if needed during or after surgery	☐ I agree	☐ I do not agree
Tissue or fluid removed may be sent for laboratory examination	☐ I agree	☐ I do not agree
Anonymised images or results may be used for teaching and research (optional)	☐ Yes	☐ No

Questions I have discussed

Please write down any questions you asked and any particular concerns that were discussed.

My acknowledgement

Please tick each statement.

- ☐ I have read this document, or it has been read to me, and I understand it.
- ☐ Professor Labuschagne has explained my condition, the proposed procedure, its expected benefits, and the alternatives, including the option of no treatment.
- ☐ The risks and possible complications, including those particular to me, have been explained in language I understand.
- ☐ I have had the opportunity to ask questions and raise concerns, and these have been answered to my satisfaction.
- ☐ I understand that no guarantee has been given about the outcome, and that the procedure may not improve, and could worsen, the condition.
- ☐ I understand that if an unexpected finding or a life-threatening event occurs during the procedure, the surgeon may carry out further treatment that is necessary to protect life or prevent serious harm.
- ☐ I understand that the anaesthetic will be explained by the anaesthetist, who will obtain consent for it separately.

- [ ] I understand that my medical scheme may not cover the full cost of treatment, that I am responsible for any shortfall, that separate accounts will be rendered by the hospital and the anaesthetist, and that a quotation is available on request.
- [ ] On the basis of the above, I request that I undergo the procedure described.

PATIENT

Full name _____ ID number _____

Signature _____ Date and time _____

If the patient is unable to consent: person consenting on the patient's behalf (National Health Act, section 7)

Full name _____ Relationship _____

Signature _____ Date and time _____

SURGEON'S STATEMENT

I have explained the patient's condition, the need for treatment, the proposed procedure and its expected benefits, the material risks including those specific to this patient, the reasonable alternatives including no treatment, and the likely consequences if those risks occur. I have offered the opportunity to ask questions and have answered them as fully as possible.

Surgeon Professor Jason John Labuschagne HPCSA no. MP 0530077

Signature _____ Date and time _____

INTERPRETER (IF USED)

I have accurately interpreted the contents of this document and the discussion between the doctor and the patient.

Full name _____ Language _____

Signature _____ Date _____

WITNESS

Full name _____ Capacity _____

Signature _____ Date _____

A copy of this signed document will be kept in the medical record and a copy offered to the patient. Personal information is processed in accordance with the Protection of Personal Information Act 4 of 2013. · Professor Jason John Labuschagne · HPCSA MP 0530077 · Version 1.0 · October 2026