

NATIONAL INSTITUTE FOR HEALTH AND CARE EXCELLENCE

Interventional procedures consultation document

Middle meningeal artery embolisation for chronic subdural haematomas

A subdural haematoma is an abnormal collection of blood (haematoma) in the space between the membrane surrounding the brain and the brain itself (subdural space). It is usually caused by a head injury. The blood collection puts pressure on the brain, which interferes with its functioning.

Under a general or local anaesthetic, a tube (catheter) is inserted through an artery in the thigh or forearm. A microcatheter is then put through it into an artery that supplies the membrane (middle meningeal artery). Particles are then injected to block (embolise) the middle meningeal artery. The aim is to cut off the blood supply to the membrane around the haematoma, after which the haematoma should go away on its own.

NICE is looking at middle meningeal artery embolisation for chronic subdural haematomas.

NICE's interventional procedures advisory committee met to consider the evidence and the opinions of professional experts with knowledge of the procedure.

This document contains the [draft guidance for consultation](#). Your views are welcome, particularly:

- comments on the draft recommendations
- information about factual inaccuracies
- additional relevant evidence, with references if possible.

NICE is committed to promoting equality of opportunity, eliminating unlawful discrimination and fostering good relations between people with particular protected characteristics and others.

This is not NICE's final guidance on this procedure. The draft guidance may change after this consultation.

After consultation ends, the committee will:

- meet again to consider the consultation comments, review the evidence and make appropriate changes to the draft guidance

- prepare a second draft, which will go through a [resolution process](#) before the final guidance is agreed.

Please note that we reserve the right to summarise and edit comments received during consultation or not to publish them at all if, in the reasonable opinion of NICE, there are a lot of comments or if publishing the comments would be unlawful or otherwise inappropriate.

Closing date for comments: 21 March 2023

Target date for publication of guidance: July 2023

1 Draft recommendations

- 1.1 Middle meningeal artery embolisation for chronic subdural haematomas should be used only in research. Find out [what only in research means on the NICE interventional procedures guidance page](#).
- 1.2 Further research should ideally be randomised controlled trials and report details of patient selection, technique used, rebleeding, functional outcomes, need for reintervention and length of hospital stay.

Why the committee made these recommendations

There were no randomised controlled trials (good quality clinical trials) and the evidence from observational studies was limited in quantity and quality. The evidence included a large number of people with chronic subdural haematomas, but only a small number had this procedure. The evidence included the procedure used at different treatment stages and with different aims. So, it is uncertain which group of patients will derive benefit from the procedure.

Overall, the evidence does not raise any safety concerns, although the procedure can have complications. However, there is uncertainty about the efficacy of the procedure. So, it should be used only in research.

2 The condition, current treatments and procedure

The condition

- 2.1 Chronic subdural haematoma (CSDH) is characterised by a pathological collection of blood in the subdural space, and usually has an insidious onset and progression. It may begin forming several days or weeks after bleeding initially starts. Bleeding is usually caused by a head injury, which may be minor in nature.

Current treatments

- 2.2 People who are asymptomatic or have minor symptoms with smaller haematomas are usually offered conventional treatment with careful monitoring and medical management. In contrast, people who have more severe symptoms and larger haematomas, and who have acceptable surgical risks, are generally offered burr hole surgery or a craniotomy.

The procedure

- 2.3 This procedure is done using general or local anaesthesia, under fluoroscopic guidance. A catheter is inserted into the common femoral or radial artery, and a microcatheter is then guided into the middle meningeal artery (MMA). Angiography is used to select MMA branches for embolisation and to detect collateral vessels.
- 2.4 If there are no significant collateral vessels, target branches are embolised. If there are significant collateral vessels, they are either occluded using coils before embolisation, or the microcatheter is advanced more distally to avoid them. Once there is no flow in the MMA target branches on angiography, the catheters are removed.
- 2.5 This procedure aims to eliminate the blood supply from the MMA to the membrane around the haematoma and to allow the eventual spontaneous resolution of the haematoma.

3 Committee considerations

The evidence

- 3.1 NICE did a rapid review of the published literature on the efficacy and safety of this procedure. This comprised a comprehensive literature search and detailed review of the evidence from 9 sources, which was discussed by the committee. The evidence included 2 systematic reviews and meta-analyses, 3 cohort studies, 2 case series and 2 case reports. It is presented in the [summary of](#)

[key evidence section in the interventional procedures overview](#).

Other relevant literature is in the appendix of the overview.

3.2 The professional experts and the committee considered the key efficacy outcomes to be: haematoma resolution, reduction in haematoma recurrence, functional outcomes, need for further intervention and length of hospital stay.

3.3 The professional experts and the committee considered the key safety outcomes to be: bleeding, stroke, damage to structures supplied by the external carotid artery, and complications of the device used.

3.4 Patient commentary was sought but none was received.

Committee comments

3.5 This procedure is not a treatment for subdual haematoma with mass effect, but it might have a role in preventing recurrence or progression of haematomas.

3.6 The committee was informed that this procedure might have a role in people who need to continue taking anticoagulant medication and antiplatelet agents. People on anticoagulants might be at higher risk of CSDH.

3.7 There are a variety of techniques and embolisation agents used but it is uncertain which is most effective.

3.8 The committee was informed that some embolisation agents are flammable and this may pose a risk if bipolar diathermy is needed in subsequent surgery. They may also cause artefacts on subsequent imaging.

3.9 The evidence also included some people who had an asymptomatic CSDH. The committee was informed that in the UK, these people are not normally considered to need any intervention.

Tom Clutton-Brock

Chair, interventional procedures advisory committee

February 2023

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