NICE guidance

Supraorbital minicraniotomy for intracranial aneurysm

Interventional procedures guidance
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www.nice.org.uk/guidance/ipg84

1 Guidance

1.1 Current evidence on the safety and efficacy of supraorbital minicraniotomy for intracranial aneurysm appears adequate to support the use of this procedure provided that the normal arrangements are in place for consent, audit and clinical governance.

2 The procedure

2.1 Indications

2.1.1 Cerebral aneurysms are small balloon-like dilated portions of blood vessels that may occasionally rupture, causing haemorrhage, stroke or death. Therapy is designed to support recovery from the initial bleed, together with specific treatment to prevent re-bleeding.

2.1.2 The majority of cerebral aneurysms arise from the major blood vessels in the centre of the head as they cross the space between the skull and the brain (the subarachnoid space). The standard surgical approach to this area is through an incision in the scalp, just in front of the ear, and an opening in the underlying bone on the side of the head. The abnormal vessels are approached side-on in the subarachnoid space beneath the brain. The surgical treatment of cerebral aneurysms involves placing a permanent clip across the neck of the aneurysm (effectively closing the neck of the balloon) to separate it from the normal vessel while preserving blood flow to the brain. If clipping is not possible, the aneurysm may be reinforced by wrapping it with synthetic material to reduce the risk of rupture.

2.2 Outline of the procedure

2.2.1 Supraorbital minicraniotomy is an alternative approach through a smaller incision made above the eyebrow and through the underlying skull. This allows a front-on approach to the abnormal vessels. The aneurysm is then clipped or wrapped using conventional microsurgical instruments.

2.3 Efficacy

2.3.1 No controlled studies were identified. In two studies, all the aneurysms were either successfully clipped or wrapped, but length of follow-up was not reported. In another study, 89% (33/37 patients) showed good recovery on the Glasgow Outcome Scale, but it was not clear how many of the patients were followed up for the entire duration of the study (17 months). This study also reported good cosmetic outcomes following surgery. For more details, refer to the Sources of evidence section.

2.3.2 One Specialist Advisor considered it unlikely that the efficacy of treating an aneurysm would be affected by the small exposure used in this procedure when compared with the standard surgical approach.

2.4 Safety

2.4.1 In the three case series reviewed, rupture of the aneurysm during

surgery occurred in 3% (4/139), 2% (2/102) and 3% (1/37) of patients. Other adverse events were: death within 8 days of surgery (4%, 4/102); central nervous system infection (2%, 2/102); impaired cerebrospinal fluid circulation requiring shunting (7%, 7/102); supraorbital nerve damage (11%, 4/37); and wound infection (3%, 1/37). For more details, refer to the Sources of evidence section.

2.4.2 The Specialist Advisors had no major safety concerns.

2.5 Other comments

2.5.1 This procedure involves a different surgical approach for performing an established procedure (craniotomy for intracranial aneurysm) and, although there may be a greater risk of per-operative rupture, this has usually been managed successfully.

2.5.2 There is an increasing trend to deal with aneurysms by endoluminal techniques.

Andrew Dillon
Chief Executive
August 2004

3 Further information

Sources of evidence

The evidence considered by the Interventional Procedures Advisory Committee is described in the following document.

'Interventional procedure overview of supraorbital minicraniotomy for intracranial aneurysm', December 2002.

Information for patients

NICE has produced information on this procedure for patients and carers ('Understanding

NICE guidance'). It explains the nature of the procedure and the guidance issued by NICE, and has been written with patient consent in mind.

4 About this guidance

NICE interventional procedure guidance makes recommendations on the safety and efficacy of the procedure. It does not cover whether or not the NHS should fund a procedure. Funding decisions are taken by local NHS bodies after considering the clinical effectiveness of the procedure and whether it represents value for money for the NHS. It is for healthcare professionals and people using the NHS in England, Wales, Scotland and Northern Ireland, and is endorsed by Healthcare Improvement Scotland for implementation by NHSScotland.

This guidance was developed using the NICE interventional procedure guidance process.

We have produced a summary of this guidance for patients and carers. Information about the evidence it is based on is also available.

Changes since publication

26 January 2012: minor maintenance.

Your responsibility

This guidance represents the views of NICE and was arrived at after careful consideration of the available evidence. Healthcare professionals are expected to take it fully into account when exercising their clinical judgement. This guidance does not, however, override the individual responsibility of healthcare professionals to make appropriate decisions in the circumstances of the individual patient, in consultation with the patient and/or guardian or carer.

Implementation of this guidance is the responsibility of local commissioners and/or providers. Commissioners and providers are reminded that it is their responsibility to implement the guidance, in their local context, in light of their duties to avoid unlawful discrimination and to have regard to promoting equality of opportunity. Nothing in this guidance should be interpreted in a way which would be inconsistent with compliance with those duties.

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Endorsing organisation

This guidance has been endorsed by Healthcare Improvement Scotland.