NICE National Institute for Health and Care Excellence

NICE guidance

Therapeutic percutaneous image-guided aspiration of spinal cysts

HealthTech guidance
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www.nice.org.uk/guidance/htg143

Your responsibility

This guidance represents the view of NICE, arrived at after careful consideration of the evidence available. When exercising their judgement, healthcare professionals are expected to take this guidance fully into account, and specifically any special arrangements relating to the introduction of new interventional procedures. The guidance does not override the individual responsibility of healthcare professionals to make decisions appropriate to the circumstances of the individual patient, in consultation with the patient and/or guardian or carer.

All problems (adverse events) related to a medicine or medical device used for treatment or in a procedure should be reported to the Medicines and Healthcare products Regulatory Agency using the Yellow Card Scheme.

Commissioners and/or providers have a responsibility to implement the guidance, in their local context, in light of their duties to have due regard to the need to eliminate unlawful discrimination, advance equality of opportunity, and foster good relations. Nothing in this guidance should be interpreted in a way that would be inconsistent with compliance with those duties. Providers should ensure that governance structures are in place to review, authorise and monitor the introduction of new devices and procedures.

Commissioners and providers have a responsibility to promote an environmentally sustainable health and care system and should assess and reduce the environmental impact of implementing NICE recommendations wherever possible.

Contents

This guidance replaces IPG223.

1 Recommendations

1.1 Current evidence on the safety and efficacy of therapeutic percutaneous image-guided aspiration of spinal cysts is very limited but is adequate to support the use of the procedure in the context of this rare condition, provided that normal arrangements are in place for clinical governance and audit.

1.2 During the consent process, clinicians should ensure that patients understand that there is uncertainty about the procedure's benefits and that subsequent interventions may be necessary. They should provide patients with clear written information. In addition, use of NICE's information for the public is recommended.

2 The procedure

2.1 Indications

2.1.1 There are several types of spinal cyst, all of which are rare. Tarlov or perineural cysts affect nerve roots, most commonly in the sacral region of the spine. The majority are asymptomatic, but they may occasionally cause symptoms such as radicular pain or urinary dysfunction. Arachnoid cysts develop as a result of defects of the dura, usually in the thoracic region of the spine. They can cause radicular pain or loss of sensory or motor function. Spinal echinococcal cysts are a rare feature of hydatid disease, and may also cause radicular pain or loss of neurological function.

2.1.2 Painful spinal cysts are often managed conservatively with analgesics. Open surgery to drain or remove cysts may be indicated if pain is refractory to medical therapy, or if there is a threat of permanent neurological impairment.

2.2 Outline of the procedure

2.2.1 A small-gauge needle is inserted into the cyst under computed tomography (CT) or magnetic resonance imaging (MRI) guidance. Cyst contents are aspirated, and the decrease in cyst volume is documented by imaging. Where cysts are present at more than one spinal level, several aspiration procedures may be needed.

2.3 Efficacy

2.3.1 The evidence available is from one case series and three case reports. In a case series of three patients with sacral perineural cysts, two experienced pain relief for up to 3 weeks and one for several weeks (number not stated). Case reports of two patients, one with an arachnoid cyst and one with spinal hydatid cysts, reported that image-guided aspiration rendered each patient asymptomatic during follow-up of 1 year. A case report of a patient with a Tarlov cyst reported

that aspiration produced immediate pain relief; however, pain recurred after 5 days and the patient underwent open decompression.

2.3.2 Follow-up imaging of cysts was undertaken in the case series and one of the case reports described above. The patient with hydatid cysts demonstrated collapsed cysts and spinal cord decompression on MRI at 4-month follow-up. Conversely, the cysts eventually refilled in the three patients with sacral perineural cysts and all subsequently received operative treatment. For more details, see the overview.

2.3.3 The Specialist Advisers did not raise concerns about the efficacy of this rare procedure.

2.4 Safety

2.4.1 Only one case report, of a patient whose spinal hydatid cysts were aspirated under CT guidance, reported safety outcomes. The patient tolerated the procedure well, with no allergy or anaphylaxis. For more details, see the overview.

2.4.2 The Specialist Advisers listed potential adverse events as bleeding, infection, and nerve or spinal cord damage, including paraplegia.

Update information

Minor changes after publication

January 2026: Interventional procedures guidance 223 has been migrated to HealthTech guidance 143. The recommendations and accompanying content remain unchanged.

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Endorsing organisation

This guidance has been endorsed by Healthcare Improvement Scotland.