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NHS
National Institute for
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Autologous blood injection for tendinopathy

1 Guidance

1.1 Current evidence on the safety and efficacy of autologous blood injection for tendinopathy is inadequate in quantity and quality. Therefore this procedure should only be used with special arrangements for clinical governance, consent and audit or research.

1.2 Clinicians wishing to undertake autologous blood injection for tendinopathy should take the following actions.

- Inform the clinical governance leads in their Trusts.
- Ensure that patients understand the uncertainty about the procedure's efficacy, especially in the long term, make them aware of alternative treatments and provide them with clear written information. In addition, use of NICE's information for patients ('Understanding NICE guidance') is recommended (available from www.nice.org.uk/IPG279publicinfo).
- Audit and review clinical outcomes of all patients having autologous blood injection for tendinopathy (see section 3.1).

1.3 Future research should be in the context of randomised controlled trials that define chronicity of tendinopathy and clearly describe any previous or adjunctive treatments (including physiotherapy and 'dry needling') as well as the tendons treated. They should address the role of ultrasound guidance and include functional and quality of life outcomes with a minimum follow-up of 1 year. NICE may review the procedure upon publication of further evidence.

2 The procedure

2.1 Indications and current treatments

2.1.1 'Tendinopathy' describes a range of conditions that affect tendons, causing pain, weakness and stiffness. The symptoms are usually associated with overuse. Tendons commonly involved are the lateral epicondyle (elbow), Achilles (heel) and patellar (knee). Tendinopathy also has other names – for example, tendonosis and tendonitis – and it encapsulates a range of pathologies, including inflammatory, non-inflammatory and degenerative changes.

2.1.2 Conservative treatments include rest, use of orthotic devices, physiotherapy, analgesic therapy and local injection of steroids. It may take several months for symptoms to resolve. Extracorporeal shockwave therapy, or sometimes surgery to release the tendon from the underlying bone or constricting surrounding tissues, can also be used. A period of rehabilitation is usually required.

2.2 Outline of the procedure

2.2.1 Autologous blood injection can be used when other treatments have failed to resolve tendinopathy. Blood taken from the patient by standard venesection is injected into the area around the damaged tendon. The aim is to promote healing by triggering stem cell recruitment, angiogenesis and fibroblast stimulation. A local anaesthetic is usually used and ultrasound may provide guidance. Before injection, 'dry needling' (repeatedly passing a needle through the tendon to disrupt the fibres and cause bleeding) may be performed. After the procedure, patients are instructed to avoid strenuous or excessive use of the tendon for a few weeks (physiotherapy may be provided). The procedure may be repeated.

Interventional procedure guidance 279

Interventional procedures guidance makes recommendations on the safety and efficacy of a procedure. The guidance does not cover whether or not the NHS should fund a procedure. Decisions about funding are taken by local NHS bodies (primary care trusts and hospital trusts) after considering the clinical effectiveness of the procedure and whether it represents value for money for the NHS.

Interventional procedures guidance is for healthcare professionals and people using the NHS in England, Wales, Scotland and Northern Ireland. This guidance is endorsed by NHS QIS for implementation by NHSScotland.

NHS Quality Improvement Scotland

Sections 2.3 and 2.4 describe efficacy and safety outcomes from the published literature that the Committee considered as part of the evidence about this procedure. For more detailed information on the evidence, see the overview, available at www.nice.org.uk/IP549overview

2.3 Efficacy

2.3.1 A non-randomised controlled trial of 20 patients (15 treated with platelet-rich autologous blood injection) reported decreases in mean pain scores of 46% and 60% in the autologous blood injection group compared with 17% and 16% in the group treated with anaesthetic injection at 4-week and 8-week follow-up (measured with a visual analogue scale; $p = 0.028$ and 0.001, respectively). At the final 26-month follow-up, mean pain in the group treated with autologous blood injection had decreased by 93% ($p < 0.001$). Elbow function, measured by the Mayo elbow score, had improved by 72% at 6-month follow-up ($p = 0.001$).

2.3.2 Three case series of 35, 28 and 20 patients with refractory lateral epicondylitis reported decreased pain scores, from a median of 6 to 0 ($p < 0.001$) at 6 months, a mean of 6.5 to 2.0 (significance not stated) at 9.5 months, and a mean of 6 to 1 ($p < 0.001$) at 6 months, respectively (using the 7-point Nirschl score from 1 [mild] to 7 [worse]).

2.3.3 A case series of 44 patients (47 knees) treated with autologous blood injection for patellar tendonitis reported improvement in knee function, from a mean score of 39.8 at baseline to 74.3 at an undefined time after the procedure (using the 100-point Victorian Institute for Sport Assessment score, $p < 0.0001$).

2.3.4 The Specialist Advisers considered key efficacy outcomes to be pain relief and improved joint function.

2.4 Safety

2.4.1 The case series of 35 patients reported that 71% (25/35) had pain and stiffness that resolved within 2 days. The case series of 28 patients reported the need for short-term narcotics in 7% (2/28) after the procedure. Most patients reported that pain was similar to that experienced following steroid injection.

2.4.2 The Specialist Advisers considered additional possible adverse events to include infection, injury to adjacent structures and bruising at the injection site. One Adviser considered Achilles tendon rupture to be a theoretical adverse event.

2.5 Other comments

2.5.1 The Committee noted that the majority of evidence presented related to use of the procedure in chronic rather than acute tendonitis.

2.5.2 The Committee noted that some of the published studies involved the use of 'dry needling' before the injection of autologous blood, but it was not possible to differentiate between effects of these two components of the procedure. This guidance does not address dry needling as a treatment modality on its own.

3 Further information

3.1 This guidance requires that clinicians undertaking this procedure make special arrangements for audit. NICE has identified relevant audit criteria and has developed audit support (which is for use at local discretion) available from www.nice.org.uk/IPG279

3.2 NICE has published interventional procedures guidance on extracorporeal shockwave therapy for refractory tendinopathies (plantar fasciitis and tennis elbow) (www.nice.org.uk/IPG139) and extracorporeal shockwave lithotripsy for calcific tendonitis (tendinopathy) of the shoulder (www.nice.org.uk/IPG21).

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. See www.nice.org.uk/IPG279publicinfo

Ordering printed copies
Contact NICE publications (phone 0845 003 7783 or email publications@nice.org.uk) and quote reference number N1767 for this guidance or N1768 for the 'Understanding NICE guidance'.

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