LETTERS TO THE EDITOR

Use of small amounts of ultrasound guided air for injections

The existence and detection of air in various tissues is of great importance, whether the air has emanated by a disease mechanism (for example, intra-abdominal in gastric lesions, extrapulmonary in thoracic lesions) or been applied as a diagnostic tool. The detection of the air in a diagnostic test may be performed by such different methods as stethoscopy (epidurally in the whoosh test), or radiography (intra-articularly in arthrography).

In ultrasonography the injection of ultrasound contrast agents containing air may increase the diagnostic confidence in the intravascular domain.

Atmospheric air, which is much cheaper, may be safely injected in small quantities for diagnostic purposes in extravascular domains—for example, joints, and in our experience also in bursae and tendon sheaths, which all have cavities that can be visualised in this way.

In addition to the standard ultrasonic verification of correct needle placement, it is possible to monitor and verify the actual injection of the substance by adding a small amount (0.5–1 ml) of air. Figure 1 shows the inflamed tendon sheath of a patient with rheumatoid arthritis. Before injection of cortisone the correct position of the needle is verified as well as the correct placement of the substances injected through this needle. The air is readily discernible on the screen (fig 2A-D), and the flow of the air in both proximal and distal direction along the tendon can be visualised. The procedure can be performed in an outpatient clinic with the aid of an assistant.

We do not propose that all injections should be carried out under the guidance of ultrasound, however, during training of the therapists or in scientific studies the placement of the injection may be assured in this way.

H BLIDDAL
Professor of Rheumatology, Parker Institute, Frederiksberg Hospital, DK-2000 Denmark

S TORP-PEDERSEN
Chief of Laboratory of Ultrasonography, KAS Gentofte, DK-2900 Hellerup, Denmark

hennings.bliddal@fh.hosp.dk

Figure 1 Thickened tendon sheath before injection. Longitudinal section of the palmar side of the fifth finger. In the top of the image the skin (S) is seen as an isoechoic band with varying thickness. The subcutaneous tissue (SC) is seen as a slightly more hypoechoic band below the skin. The thickened and irregular tendon sheath (TS) is seen both above and below the tendon (T). The proximal phalanx is indicated by long vertical arrows and the metacarpal bone is indicated by short vertical arrows. Local anaesthesia (LA) is applied and is seen as an expanding fluid collection indicated by the oblique arrow.

Figure 2 Ultrasound guided injection. (A) The needle has been inserted and is indicated by arrows. The leftmost arrow points at the needle tip. Small amounts of air are seen escaping the needle tip (short arrows), spreading out in the cleavage between the tendon and the thickened tendon sheath. TS = thickened tendon sheath; T = tendon; NT = needle tip; PP = proximal phalanx; MC = metacarpal bone. (B) and (C) An expanding fluid collection is seen in the cleavage between tendon and tendon sheath. (D) The bolus of the injection is seen as a hyperechogenic mass between the tendon and the tendon sheath.
Steroid psychosis after an intra-articular injection

Intra-articular steroid injections are a well recognised treatment for rheumatoid arthritis and osteoarthritis with an inflammatory component. It is also clear that the effects of intra-articular steroid treatment are not confined to the joint injected. Steroid is absorbed, inducing improvement in the indices fined to the joint injected. Steroid is ab-
intra-articular steroid treatment are not con-

ponent. It is also clear that the e

Intra-articular injection

acetate) 40 mg is su

mality.

required sedating with stelazine owing to

count, and calcium were normal. The patient

midstream urine.

clearing of infectious arthritis of her left hip. Past medical history

Farin she was kept in hospital. Thirty six

contrast was used to ensure correct needle

omitted for four days before the injection.

ment included furosemide (frusemide), dig-

psychiatric illness or dementia. Drug treat-

ischaemic heart disease. She had no history of

arthritis of her left hip. Past medical history

administration, but we are not aware of any

are known to arise after systemic steroid

maximum suppression.

4 Goldberg BB, Hilpert PL, Burns PN, Liu JB,

3 Bliddal H. Placement of intraarticular injections

2 Bradley SA, Chandy J. Air aspiration after

RC. The "whoosh" test. A clinical test to con-

V

1 Dixon ASj, Bywaters EGL. The effect of intra-

arterial injection of cortisone acetate and of


2 Bird HA, Ring EFJ, Bacon PA. A thermographic

assessment of three intra-articular pred-

nisolone concentrations following intra-

articular injection in patients with rheumatoid


8 Bertouch JV, Meffin PJ, Sallustio BC, Brooks

PM. A comparison of test methyl-

prednisolone concentrations following intra-

articular injection in patients with rheumatoid


9 Wilson CG, Ssendagire R, May CS, Paterson

JW. Measurement of plasma prednisolone in


Familial macrophagic myofasciitis

Macrophagic myofasciitis is an emerging entity that was first reported in the Lancet in August 1998.1 Between May 1993 and 1999 more than 50 cases have been described in France.2 We report the first familial case of macrophagic myofasciitis.

A 45 year old woman was first admitted to hospital in July 1997 for pain and swelling of the right foot lasting for few months. Muscular biopsy of the deltoid was normal. In February 1999, diffuse myalgia appeared. Clinical examination was normal as were the laboratory and the second electromography findings. However, a third muscle biopsy of the deltoid but was normal. Myopathic electromyography was impalpable to colchicine and this treatment was discontinued. A diagnosis of reflex sympathetic dystrophy of the right foot was proposed and calcitonin injections were started. In April 1998 the foot symp-
toms completely disappeared. A previous case has been reported5 of a 41 year old patient with rheumatoid arthritis who became elated, disoriented, and emo-
tionally lable after intra-articular injections of 40 mg methylprednisolone into both shoulders, but this patient had already devel-

oped an acute paranoid confusional state after being treated with prednisolone 2.5 mg three times a day for 12 days only two weeks previ-

ously.

In a multicentre prospective study, psychi-

tric symptoms in osteoarthritis of the knee, and therefore patients with

rheumatoid arthritis are equally likely to have systemic effects. If two

joints are injected with 80 mg depo-medrone then the mean maximum serum concentra-

tion is almost six times greater than if only one joint is injected.2

Intra-articular injections are commonly

given to outpatients and inpatients by all

Health professionals, including oncologists, rheumatologists, orthopaedists, and others who treat patients with rheumatoid arthritis, are often faced with the challenge of managing patients who are at risk for developing steroid psychosis. This can occur in patients with or without a history of psychiatric illness, and can manifest as a variety of symptoms ranging from mild agitation to severe depression and suicidal ideation. It is important to recognize the signs and symptoms of steroid psychosis and to establish a management plan that can help minimize the risk of this complication.

6. Newberg AH, Munn CS, Robbins AH. Compli
cations of arthrography. Radiology 1985;155:
605-6.
manifestations leading to the diagnosis of macrophagic myofasciitis occurred 24 and 18 months after immunisation against hepatitis B virus (HBV) (Genevac B, Pasteurs vaccins, Lyon, France and Engerix B, Smithkline Beecham, Nanterre, France) in mother and son, respectively. Additionally, both patients were vaccinated in the same side as the positive muscle biopsy (that is, the left deltoid) and a prior biopsy of the right deltoid of the mother was negative.

The putative role of the aluminic component of several vaccines—namely, those against HBV, has been recently suggested. If confirmed, this hypothesis should also consider the potential influence of the genetic background, as millions of French people have been recently immunised against HBV, whereas only a few dozen cases of macrophagic myofasciitis have been diagnosed. However, the possible role of currently unidentified environmental factors cannot be ruled out, given that macrophagic myofasciitis occurred concomitantly in our familial case report.

ZAHIR AMOURA
NATHALIE COSTEDOAT
THIERRY MAISONOBE
PIERRE GODEAU
JEAN-CHARLES PIETTE
Services de Médecine Interne et de Neuropathologie,
Hôpital Pitié-Salpêtrière,
47–83 Bd de l’hôpital,
75013 Paris, France

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H BLIDDAL and S TORP-PEDERSEN

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