Letters to the Editor

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An electronic logbook for rheumatologists performing musculoskeletal ultrasound

Sir, The use of musculoskeletal ultrasound by rheumatologists is an exciting and expanding area of practice. It is a common practice for trainees in other medical and surgical specialties to keep a logbook of procedures (such as gastroscopies or bronchoscopies), to be reviewed as part of the annual appraisal/record of in-training assessment (RTA) process. A logbook listing the number and type of ultrasound examinations undertaken by a trainee is a recommendation of the Royal College of Radiologists [1].

We have developed a simple electronic logbook which is designed to be completed on a handheld pocket computer (PDA) at the time of performing each scan. The logbook is based on a traditional Excel spreadsheet, with six separate pages for each commonly scanned region (hip, knee, foot and ankle, shoulder, elbow, hand and wrist). Because the logbook is an Excel spreadsheet, it can also be used on desktop or laptop personal computers (including a number of ultrasound machines). The details to record for each region were based on a recent assessment of competency in ultrasound undertaken by rheumatologists in Belfast [2].

After insertion of patient details such as date, hospital number and indication, the logbook can be completed by inserting y or n (yes or no) in each relevant box (for example: synovitis: y, erosions: n, effusion: n, Doppler signal: y). In some instances, the box can be completed by inserting numbers from 1 to 5 (for example, in the hand if there is synovitis of the 2nd and 3rd Metacarpophalangeal (MCP) joints, the numbers ‘2,3’ are inserted into the MCP synovitis box). We have found that the details of each scan can be entered easily and quickly while scanning, particularly by those already familiar with PDAs. Only relevant boxes in each region need be completed.

This logbook has two main functions:

(i) by keeping a record of scans performed, it contributes useful documentation for training and appraisal purposes, particularly for specialist registrars and for rheumatologists developing ultrasound skills.

(ii) because the logbook is open on a PDA at the time of scanning, it is useful as an aide memoir for the rheumatologist sonographer to decide which important features to scan and record. Rheumatologists will use ultrasound for different regions and indications, depending on their practice and experience. This logbook is easily adaptable to meet these differing needs if required. The logbook is available for download through the Rheumatology website (see supplementary material). We encourage readers to download, use and adapt this logbook to suit their needs.

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A. P. CAIRNS, E. FILIPPUCCI1, C. M. MCVEIGH, W. GRASSI1

Department of Rheumatology, Musgrave Park Hospital, Belfast, Northern Ireland, UK and 1Department of Rheumatology, Universita Politecnica delle Marche, Ancona, Italy

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Correspondence to: A. P. Cairns.
E-mail: andrew.cairns@greenpark.n-i.nhs.uk

1. Faculty of Clinical Radiology, Royal College of Radiologists. Ultrasound training recommendations for medical and surgical specialties. London: Royal College of Radiologists, 2005.


Against the current—when primary pericardial disease causes rheumatic disease

Sir, Herein we report a 74-yr-old male who was found to have an asymptomatic pericardial effusion (8 mm) without haemodynamic impairment and paroxysmal atrial fibrillation at a routine check-up in July 2004. The laboratory tests showed an elevated erythrocyte sedimentation rate (29 mm/h) with otherwise unremarkable results. A chest X-ray showed a cardiomegaly. His medical history included a coronary heart disease and cerebrovascular disease. As risk factors, arterial hypertension, smoking (90 py) and diabetes mellitus were present. Two months earlier, the patient developed increasing arthralgias in his large joints (hip, knee and shoulder). The patient did not experience night sweat, fever or weight loss. After 2 weeks, dyspnoea and bilateral leg oedema developed, and the patient was admitted to a district hospital. An echocardiography revealed a progressive pericardial effusion with haemodynamic impairment. Ultrasound-guided needle puncture of the effusion revealed 500 ml haemorrhagic fluid, which showed blood cells and reactively altered mesothelial cells in the cytological analysis as well as negative gram stain and bacterial cultures. As part of the diagnostic work-up, a highly positive anti-nuclear antibody (ANA) with a titre of 1:5120 (immunofluorescence on Hep2-cells, normal <1:40) was found. Systemic lupus erythematosus (SLE) was suspected and prednisolone 100 mg/day and oral cyclophosphamide 150 mg/day were initiated. The condition of the patient improved, but 1 month later, atrial fibrillation and dyspnoea recurred, and the patient was admitted to our department for further evaluation.

At admission, a physical examination revealed mild bilateral knee synovitis. An ECG showed a sinus rhythm: an echocardiography revealed a pericardial effusion with 8 mm diameter. A CT-scan of the thorax showed the pericardial effusion, some reactive, enlarged paracardial lymph nodes and small bilateral pleural effusions (Fig. 1A). Blood chemistry showed an elevated ESR (53 mm/h) and was otherwise unremarkable. Blood count and urine analysis were inconspicuous of any disorder. Virological tests for infectious agents causing myocarditis (coxackie, adenovirus, parvovirus and cytomegaly) were repeatedly negative, as were a tuberculin test and anti-mycobacterial antibodies. The ANA tests were highly positive (1:1280) with sub-specificity for Ro52. All other tested autoantibodies were negative. Despite the fact that haemorrhagic pericardial effusions are rare events in...
rheumatic conditions, undifferentiated connective tissue was diagnosed because of the negative test results in terms of a potential malignancy, the presence of specific autoantibodies and the clinical presentation of the patient. Cyclophosphamide was discontinued, the corticosteroid dose slowly tapered and the patient discharged.

After 1 month, the patient was re-admitted to our hospital because of symptomatic pericardial effusion. Pericardial window placement was immediately performed; histological and cytological analyses of the surgical specimen showed no malignant cells. The steroid dose was increased to a dose of 1 mg/kg body weight prednisolone, and methotrexate (15 mg/week) was initiated. The patient’s condition improved again, but another month later he presented again with dyspnoea and massive bilateral pleural effusions. Despite symptomatic treatment and repeated punctures of the effusions, the condition of the patient deteriorated rapidly. Dyspnoea, neurological deterioration and atrial fibrillation occurred, and ventricular fibrillation finally caused the patient’s death. A post-mortem investigation showed the heart encased by a thickened pericard. Histological analysis revealed an epithelial-type pericardial mesothelioma with mediastinal infiltration (Fig. 1B). No other tumour manifestations were found.

This case report describes paraneoplastic rheumatic disease in a patient with underlying pericardial mesothelioma. Pericardial tumours are rare neoplasms with an autopsy incidence of <0.01% [1]. Unlike pleural mesotheliomas, asbestos exposure is less strongly linked to the occurrence of pericardial mesotheliomas. In our patient, there was no known asbestos exposure. The mean age of patients is 46 yrs with a 2:1 male to female ratio. Prognosis is very poor with a median survival of 6 months. Cytological analysis of pericardial effusion, echocardiography, CT-scan and MRI are useful for diagnosis but exhibit a low sensitivity (30–40%) [2].

Paraneoplastic autoantibody production and concomitant rheumatic disease is a frequent event in patients with cancer [3]. However, most of them have low titres of ANA without subspecificity and a few patients present with complaints indistinguishable from rheumatic disease. Till date, there is very limited knowledge on autoimmune disorders in malignant mesothelial diseases. Cases of paraneoplastic membranous glomerulonephritis and neurological diseases have been described [4–6]. Interestingly, there is also one case with rheumatic disease. This patient presented with a generalized disease that included mouth ulcers, arthritis, vasculitis, polyserositis and general malaise [7]. In contrast to our patient, tests for ANA were weakly positive without subspecificity.

Inflammatory rheumatoid heart disease is common [8] among rheumatoid arthritis patients. Up to 5% of patients with rheumatoid arthritis and up to one-third of patients with SLE experience symptomatic pericarditis. This probably relates to the common developmental origin of the pericardial mesothelium and the connective tissue affected in rheumatic diseases. This case report strengthens this association by showing that a limited primary pericardial disease leads to systemic disease of the connective tissue as well as of autoimmunity.

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J. ZWERINA1, E. FEIERL1, I. NOEBAUER2, A. SOLEIMAN3, J. S. SMOLLEN1, K. REDLICH1, G. SCHETT1

1 Department of Rheumatology, 2 Department of Radiology, 3 Department of Pathology, Medical University of Vienna, Vienna, Austria

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Correspondence to: Jochen Zwerina, MD, Department of Internal Medicine III, Division of Rheumatology, University of Vienna, Währinger Gürtel 18-20, A-1090 Vienna, Austria. E-mail: jochen.zwerina@meduniwien.ac.at