Clin Rheumatol (2007) 26: 979–980
DOI 10.1007/s10067-006-0221-6

CASE REPORT

Magdalena Dziadzio · Shahir Hamdulay · Venkat Reddy · Sara Boyce · Andrew Keat · Jacqueline Andrews

A still image of a transient rash captured by a mobile phone

Received: 16 January 2006 / Revised: 19 January 2006 / Accepted: 19 January 2006 / Published online: 4 April 2006

Abstract The diagnosis of adult onset Still's disease (AOSD) can be difficult as the differential diagnosis is broad, it is based on clinical criteria and the signs, for example rash, can be transient. Clinical photography has an obvious role, and with modern technology, is now in the hands of physicians. We report a case of AOSD where an image of a transient rash taken with a camera phone allowed the diagnosis to be established. Further, we discuss the controversies around hospital bans on mobile phones (due to potential incompatibility with medical devices) and the reality of their widespread use. We conclude that, providing safeguards of consent and data storage are in place, the camera phone is a useful tool in rheumatology practice.

Keywords Adult onset Still's disease · Clinical photography · Mobile phone

Background

In rheumatology, clinical photography has proven to be of utility in recording clinical signs which can be transient but nevertheless, essential for diagnosis if it is based on clinical criteria only. We report a case where an image taken with a camera phone allowed the diagnosis to be established in a patient with transient signs and symptoms.

M. Dziadzio (✉) · S. Hamdulay · V. Reddy · S. Boyce · A. Keat · J. Andrews
Arthritis Centre, Northwick Park Hospital,
Watford Road, Harrow,
London, HA1 3UJ, UK
e-mail: magdalena.dziadzio@nwlh.nhs.uk
Tel.: +44-2088695273
Fax: +44-2084264358

Case report

A 21-year-old Nepalese female presented in November 2004 to her doctor with pruritic rash over her upper limbs which resolved spontaneously. In May 2005, she was admitted to Northwick Park Hospital (NPH) with symmetrical arthritis of her proximal interphalangeal joints (PIP) and distal interphalangeal joints (DIP) joints, wrists, knees and ankles. She was apyrexial and had a pansystolic murmur. While inpatient, she developed rigors, night sweats and spiking fevers. Investigations showed anaemia (hemoglobin (Hb)=9.7 g/l), leucocytosis (white blood cell (WBC)=12,400/ml with neutrophilia of 9,900/ml), raised inflammatory markers (C-reactive protein (CRP)=255 mg/l, erythrocyte sedimentation rate (ESR)=85 mm/h) and a ferritin of 800 μg/l. Autoantibodies were negative, rheumatoid factor weakly positive (1:32), and complement levels, normal. Antistreptolysin titre (ASOT) was 1:160 and deoxyribonuclease (DNase) of 1:150. Blood cultures, and antibodies against cytomegalovirus (CMV), Epstein–Barr virus (EBV), herpes simplex virus (HSV), Parvovirus B19, Chlamydia, hepatitis A virus (HAV), hepatitis B virus (HBV), hepatitis C virus (HCV), human immunodeficiency virus (HIV) were negative. Transthoracic echocardiogram showed a small ventricular septal defect (VSD) and no vegetations. She was treated with etoricoxib, 90 mg/day, and her symptoms settled.

In June 2005, during a visit to Nepal, she developed a sore throat, fever, jaundice, polyarthritis and a widespread erythematous rash. Involuntary movements defined as "chorea" were described in a discharge letter from Nepal, and the diagnosis of "subacute rheumatic fever" was made. She received penicillin treatment with no benefit, returned to the UK and was admitted again in August 2005. In NPH, she developed quotidian evening fevers and reported an itchy evanescent rash on her fingers and palms appearing early in the morning, which disappeared by the time the physicians in charge were called to see it. Finally, the

Fig. 1 Macular–papular rash over left palm

maculopapular eruption was witnessed by the junior medical team who promptly photographed it using the only readily available equipment—a mobile phone camera (Fig. 1). The images were characteristic of the rash in adult onset Still's disease (AOSD)[1].

Discussion

This case demonstrates well-recognised difficulties in diagnosing AOSD [1]. We suggest that rheumatological practice can be enhanced by the technological advance of integrating cameras into mobile phones. This is not without controversy as the compatibility of medical devices with the electromagnetic radiation emitted by mobile phones is an issue. In the UK, the guidances published in 1997 [2] and 1999 [3] noted that the radiation from mobile phones can interfere with the operation of electromedical equipment. In the light of this, many hospitals have placed a blanket ban on mobile phone use.

However, the technology has become ubiquitous and is the primary means by which peripatetic medical professionals remain in contact with their work places. Persuasive cases for the liberalisation of mobile phone use in hospitals have been made and a more pragmatic regime based on overall risk to the patient espoused [4].

The widespread availability of simple to use computer technology has now placed medical photography in the hands of medical professionals. Some departments provide a digital camera; however, the risk of not having the equipment in the right place at the right time, and of theft, leaves this a suboptimal solution. Most doctors carry a mobile phone, and many of these now include integral high quality digital cameras. Use of such camera phones presents a risk of invasion of privacy; however, strict policies for obtaining and recording informed consent are routinely used throughout medical care and are equally applicable in this circumstance.

Imaging can be a tool in the hands of patients. A diagnosis of systemic lupus erythematosus (SLE) enabled by a patient who recorded a transient rash on her mobile phone has recently been reported [5]. In our case, the value of "on the spot" photography in establishing the diagnosis has been demonstrated. We suggest that, with appropriate informed consent and careful storing of the photographic image, the use of camera phones in hospitals can make a valuable contribution to clinical diagnosis and management in rheumatology.

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