Case report

DRESS syndrome presenting like septic shock

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Learning Point for Clinicians

DRESS syndrome is a life-threatening drug reaction. It should be considered in patients who present with a sepsis-like illness of unknown origin, widespread rash, oedema, eosinophilia and lymphadenopathy who fail to respond to antibiotics and are on certain medications such as anti-convulsants, allopurinol and sulphonamides.

Case report

A 27-year-old presents with pyrexia of 38.2°C, lethargy and a sore throat. On examination she had marked cervical, axillary and groin adenopathy. Pharyngitis with visible pus on her right tonsil was seen along with a widespread maculopapular rash, mild facial puffiness and genital ulceration. The only past medical history of note was a sero-negative arthropathy affecting her left fore-foot. She had commenced sulphasalazine 5 weeks prior to admission but had stopped taking it when she developed genital ulceration.

Laboratory investigations showed a moderate transaminitis, C-reactive protein of 220 mg/l [Normal: <10 mg/l] and a lymphocytosis (7 × 10⁹/L [N: 1.50–4.00 × 10⁹/L]), WCC (white cell count) 16 × 10⁹/L [N: 4.00–11.00 × 10⁹/L]. She was initially treated with amoxicillin which resulted in a worsening of her maculopapular rash. A clinical diagnosis of infectious mononucleosis was made.

However, within 48 h of admission she deteriorated and required high dependency care. Her temperature was sustained over 40.0°C, with haemodynamic compromise (blood pressure (BP) 80 mmHg systolic, pulse 160 bpm) requiring aggressive fluid resuscitation. Marked facial swelling and worsening rash became evident (Figure 1). She developed significant oedema with acute kidney injury (creatinine 260 umol/l [N: 40–130 umol/l]). Laboratory investigations demonstrated elevated WCC at 44.79 × 10⁹/l [N: 4.00–11.00 × 10⁹/l] with an eosinophilia of 2.54 × 10⁹/l [N: 0.04–0.40 × 10⁹/l]; evidence of disseminated intravascular coagulation; and an albumin of 12 g/l [N: 35–50 g/l]. A blood film showed a leucocytosis—predominantly band forms and metamyelocytes—and numerous atypical lymphocytes. Bone marrow aspirate appearances were in keeping with a florid reactive state and showed a mild degree of haemophagocytosis.

Despite broad spectrum antibiotics her condition deteriorated. A CT neck ruled out any peri-tonsillar abscess and only revealed significant cervical lymphadenopathy. Her HIV (human immunodeficiency virus), hepatitis A/B/C/E, HSV type 1&2, CMV (cytomegalovirus), EBV (Epstein–Barr virus), HHV-6 (human herpesvirus 6), HHV-7 (human herpesvirus 7) serology and glandular fever spot test were all negative. Five sets of blood cultures were sterile and her vasculitis screen was negative.

The patient met the criteria for DRESS syndrome and was started on 60 mg oral prednisolone. Over the next 24–48 h a dramatic improvement...
was noted with a reduction in her maculopapular rash and oedema, return of creatinine to baseline, reduction in inflammatory markers and resolution of hepatitis.

**Discussion**

DRESS syndrome (Drug Rash with Eosinophilia and Systemic Symptoms) is a delayed drug reaction characterized by skin rash, haematological abnormalities such as eosinophilia or atypical lymphocytes, lymphadenopathy and internal organ involvement.\(^1\) It typically develops 2–6 weeks after the initiation of the drug\(^2\), most commonly allopurinol; aromatic anti-convulsants, e.g. phenytoin, phenobarbital and carbamazepine; and sulphonamides.\(^3\)

The pattern of cutaneous eruption and types of organs involved vary from patient to patient.\(^4\) Diagnosis is therefore difficult but with a 10% mortality is crucial.\(^1,2\) In our case it presented with clinical and biochemical features consistent with acute infectious mononucleosis but with the subsequent development of a septic shock-like picture.

The worsening of her rash following the administration of amoxicillin is similar to the amoxicillin-induced rash of infectious mononucleosis. There are several case reports describing worsening of DRESS following amoxicillin use,\(^1,3\) however this is only the second reported case in relation to sulphasalazine-induced DRESS syndrome.\(^1\) It has been suggested that this flare is secondary to amoxicillin inducing virus reactivation, particularly HHV-6,\(^5\) but it is notable that in our patient serological tests for the commonly reactivating viruses (including HHV-6) were negative.

Due to the multi-organ involvement of this condition, a severe sepsis picture is a well-recognized presentation,\(^4\) however DRESS is a rare condition and this case serves as an important reminder for all acute physicians to consider this diagnosis in patients presenting with severe sepsis in whom no infective source is clear.

The mainstay of treatment is stopping the offending drug. Delaying this measure is associated with a poorer prognosis.\(^1–3\) The use of systemic steroids is controversial.\(^2,4\) Steroids act by inhibiting interleukin-5 and eosinophil accumulation.\(^3\) It is this accumulation that is thought to account for internal organ damage.\(^6\) There is a lack of good randomized control trials assessing their efficacy although independent case reports have noted improvement with steroids.\(^6\) Certainly in our case the use of oral steroids resulted in a dramatic clinical and biochemical improvement and allowed patient transfer from the high dependency unit to an open ward within 24 h.

**Summary**

The DRESS syndrome can be a very difficult diagnosis thanks to its non-specific and variable presentations but given its significant mortality, failure to recognize it can be disastrous. All clinicians should have a high index of suspicion for DRESS syndrome in patients who present with a glandular fever or sepsis-like syndrome with a widespread rash, eosinophilia and facial oedema after exposure to drugs such as allopurinol, aromatic anti-convulsants or sulphonamides.

**Conflict of interest:** None declared.

**References**


