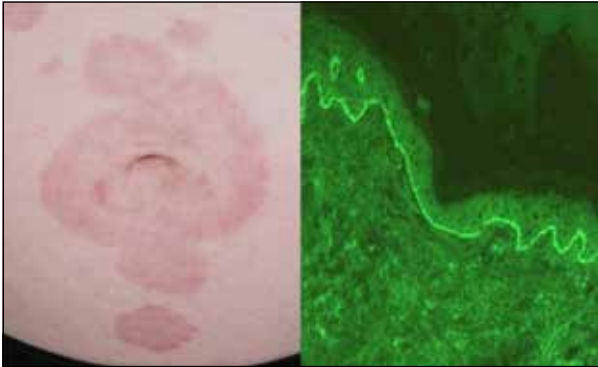


Curiositas

UNDERGRADUATE QUIZ

This image shows the abdomen of a pregnant woman and a specialist dermato-pathological investigation.



1. What is the diagnosis?
2. What investigations are necessary?
3. What is the management of this condition?

J. Moradzadeh (Medical student, Queen's University Belfast), W. Abdelrahman (Specialty registrar, Department of Dermatology, Belfast Health and Social Care Trust), D. O'Kane (Consultant Dermatologist, Department of Dermatology, Belfast Health and Social Care Trust).

POSTGRADUATE QUIZ

A patient presents with the following leg lesions:



1. What is the diagnosis and what are the causes?
2. What investigations are necessary?
3. What is the management of this condition?

R. Dawson (Core Trainee), W. Abdelrahman (Specialty Registrar), K. McKenna (Consultant) (Department of Dermatology, Belfast Health and Social Care Trust).

GENERAL PRACTICE QUIZ

Blood is taken from a patient at your surgery in the late afternoon. It is centrifuged at the practice and refrigerated overnight. You note the following appearance the next morning, and later that day, laboratory staff telephone to report that the serum sodium is low at 123 mmol/L (reference range 136-145 mmol/L).



1. What is unusual about the appearance of the sample?
2. What is the likely cause of the hyponatraemia?
3. What additional test could the laboratory staff perform on the sample that would offer reassurance in terms of the hyponatraemia?

P. Hamilton (Clinical Lecturer, Centre for Medical Education, Queen's University Belfast and Honorary Consultant in Chemical Pathology, Department of Clinical Biochemistry, Belfast Health and Social Care Trust).

AND FINALLY...



Image credit: By Jason Hollinger, CC BY 2.0, <https://commons.wikimedia.org/w/index.php?curid=9693284>

1. On which tree would this foliage and fruit be found?
2. What is its contribution to modern medicine?

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ANSWERS See overleaf

CONSIDER CONTRIBUTING TO CURIOSITAS?

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Curiositas: Answers

UNDERGRADUATE QUIZ

1. The appearance of a pruritic, urticated rash during pregnancy that involves peri-umbilical skin is suggestive of pemphigoid gestationis. This is an autoimmune pregnancy-associated skin disease characterised by a vesiculo-bullous eruption typically involving the periumbilical area initially but becoming more widespread. It occasionally involves the palms and soles but typically spares the face and mucous membranes. It is most common during the second and third trimesters. In the majority of cases the condition will resolve spontaneously after delivery. 75% of patients who notice an improvement during the end of pregnancy will usually experience a post-partum flare. Another differential to consider is polymorphic eruption of pregnancy (also known as pruritic, urticarial, papules and plaques of pregnancy (PUPPP)); this however, typically involves striae and spares the peri-umbilical area. Complications are rare but include premature delivery and transient blistering of the newborn. There is also a high incidence of maternal Graves' disease.
2. Skin biopsy for histology and direct immunofluorescence are essential to confirm the diagnosis along with serum testing for indirect immunofluorescence. One biopsy is taken from lesional (involved) skin for histological evaluation and typically demonstrates sub-epidermal blisters with an eosinophil-predominant infiltrate. Another skin biopsy from peri-lesional (uninvolved) skin is analysed by direct immunofluorescence, which typically demonstrates a linear band of C3 deposition along the basement membrane zone. Around 25-50% of patients may also demonstrate IgG. Antibodies can also be detected in the patient's serum (indirect immunofluorescence). These histological and immunofluorescence findings mirror those seen in bullous pemphigoid.
3. Topical corticosteroids and antihistamines are first-line agents to treat pemphigoid gestationis. For recalcitrant disease, systemic corticosteroids or steroid-sparing agents such as azathioprine or ciclosporin may be required depending on whether the pregnancy is ongoing as this may limit use of certain agents due to their teratogenicity.

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POSTGRADUATE QUIZ

1. The appearance of blisters on a background of purpura is in keeping with bullous vasculitis. In over 50 % of cases the cause is unknown. Infection accounts for 20% of cases, and it is important to test for hepatitis in adults or Henoch-Schönlein Purpura in children. Medications may also cause bullous vasculitis, most commonly beta-lactam antibiotics, NSAIDs and sulphonamides. Connective tissue disorders can be associated with bullous vasculitis, particularly seropositive patients with longstanding nodular disease. 5% of cases are attributed to malignancy, usually of the lymphoproliferative type such as multiple myeloma, Hodgkins disease, mycosis fungoides and adult T cell lymphoma. Inflammatory bowel disease is also associated.
2. In any patient with cutaneous vasculitis it is important to rule out systemic involvement (p/c ANCA) as this determines whether management is targeted at skin disease only or whether further specialist input is required.

Assessing urinalysis is paramount specifically looking for proteinuria and haematuria. If abnormal, this may indicate renal involvement. The presence of haematuria warrants the need for assessment of the presence of red cell casts. In most cases a diagnosis of vasculitis can be made on clinical grounds without the need for a biopsy. Doing a biopsy however, doesn't explain what caused the vasculitis. The classic histological features of vasculitis are a perivascular inflammatory infiltrate composed mainly of neutrophils, extravasated erythrocytes and fibrinoid necrosis of the vessels with fibrin extravasation. A variable number of eosinophils can be seen and if present in high number may suggest a drug related aetiology. Direct immunofluorescence may be requested to look for deposits of immunoglobulin in vessel walls, for example IgA in HSP and deposition of IgG and C3 component of complement in Lupus. It is not necessary, however, to demonstrate immune complexes in order to make a diagnosis of vasculitis.

3. The management of vasculitis depends on whether it is limited to skin only or whether there is systemic involvement. For localised disease, potent topical corticosteroid therapy can be used to ease symptoms of burning or itch. If there is extensive cutaneous involvement or no response to topical therapy, a reducing course of oral corticosteroid therapy may be considered. If patients on reducing oral steroids find that their disease recurs then steroid-sparing agents are considered such as dapson, azathioprine, mycophenolate mofetil or methotrexate.

R. Dawson (Core Trainee), W. Abdelrahman (Specialty Registrar), K. McKenna (Consultant) (Department of Dermatology, Belfast Health and Social Care Trust).

UNDERGRADUATE QUIZ

1. Three layers are visible in the sample. From top to bottom these are serum, separator gel layer (present in the tube) and blood clot. Instead of the usual pale yellow appearance, the serum of this patient's blood is turbid reflecting gross lipaemia.
2. In the presence of severe hypertriglyceridaemia, modern clinical chemistry analysers can report hyponatraemia even if the true serum concentration is normal. This is so-called 'pseudohyponatraemia.'
3. The finding of a normal serum osmolality would provide evidence that the hyponatraemia was artefactual.

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AND FINALLY...

1. The photograph shows the Pacific Yew tree (*Taxus brevifolia*).
2. Paclitaxel, a chemotherapy drug, was originally isolated from the bark of this tree. It has been used to treat a variety of types of cancer. Other drugs in the same class – 'taxanes' – are now synthesized synthetically.

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