WA

AUSTRALIAN Clinicallabs

PATHOLOGY FOCUS

Medical Newsletter

December 2018 - Newsletter

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Thank you for your support!

Our last edition of Pathology Focus for 2018

On behalf of Australian Clinical Labs, we would like to begin this end-of-year edition of Pathology Focus by wishing you a safe and happy holiday season, and we hope you are able to have a well-deserved break after another busy year.

Thank you for reading our clinical newsletter during its first year. We hope you received some valuable insights and clinical knowledge that you were able to use in your everyday practice.

Going forward in 2019, Pathology Focus will continue full steam ahead, and we will endeavour to provide you with more clinical articles written by our expert pathologists on topics that are useful and interesting to you. If there are any pathology-related subjects that you would find particularly helpful to your practice, please feel free to email us on newsletter@clinicallabs.com.au

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Inflammatory Skin Disorders:
A practical approach to biopsy diagnosis

Dr Jenny Grew

As the weather warms up and we dispense with a few layers of clothing, it is suspicious lesions and malignancies that feature prominently in presentations of skin disorders to general practitioners. All the more reason to keep in mind that inflammatory skin conditions - the dermatoses - may present at any time.

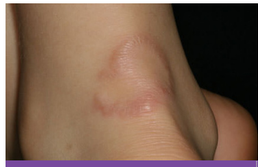
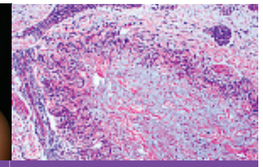
In this article, some common and not-so-common dermatoses are discussed: how they may present clinically, their typical pathological changes, including the level of skin involved - which in turn informs the best approach to taking a biopsy.

For any biopsy of an inflammatory skin condition, the provision of clinical information is essential and should include:

- Description of the lesions: duration and appearance, age of the lesion and any prior treatment. Consider submitting a clinical photograph to the lab along with the specimen.
- Clinical differential diagnoses.
- Medical, including drug, history.

Let's turn our attention to three of the more commonly encountered dermatoses, each of unknown aetiology.

GRANULOMA ANNULARE

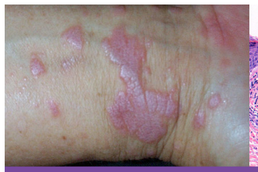
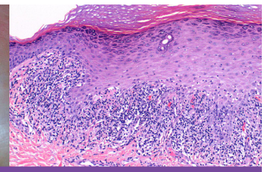



CLINICAL FEATURES	HISTOLOGY
• Typically occurs in patients younger than 30 years. • More common in women and patients with diabetes. • Lesions occur on hands, feet, extensor limb surfaces. • Classical lesion comprises small papules with an enlarging ring configuration.	• Granulomatous: necrobiotic/ interstitial. • Increased dermal mucin.

APPROACH TO BIOPSY

- Incisional biopsy at advancing edge, to include reticular dermis.
- Annular lesions may be unsuitable for punch biopsy.

LICHEN PLANUS

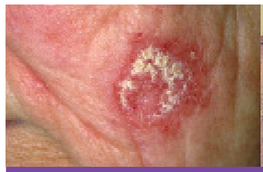
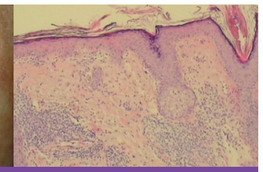



CLINICAL FEATURES	HISTOLOGY
• Typically presents in patients 30-60 years • Violaceous, flat-topped papules, often polygonal, streaked with white lines. • Occurs on flexor surfaces of wrists, thighs, genitalia, trunk. • Oral lesions may occur (in up to 60%)	**Lichenoid pattern:** • Band-like upper dermal inflammatory infiltrate. • Apoptotic keratinocytes in epidermis. • Hyperkeratosis and wedge-shaped hypergranulosis.

APPROACH TO BIOPSY

- Incisional biopsy to include superficial dermis
- Include a small amount of normal skin at advancing edge of lesion.
- Punch biopsy in the centre of a lesional area may be suitable.

DISCOID LUPUS ERYTHEMATOSUS

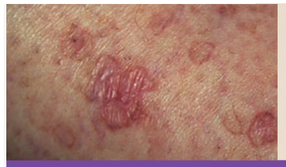
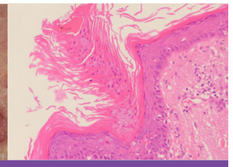
CLINICAL FEATURES	HISTOLOGY
• Peak onset in fourth decade, more commonly occurring in women. • Wide distribution but classical lesions involve head and neck, including butterfly malar rash. • Red, scaly, well-demarcated patches with follicular plugging. • Photo-exacerbation may occur.	• Lichenoid reaction involving epidermis and epithelium of plugged follicles. • Inflammation involves superficial and deep dermis. • Direct immunofluorescence may be positive (lupus band test) but not required for diagnosis.

APPROACH TO BIOPSY

- Incisional biopsy to include superficial dermis
- Include a small amount of normal skin at advancing edge of lesion.
- Punch biopsy in the centre of a lesional area may be suitable.

Two Less Common Conditions are Grover Disease and Porokeratosis.

POROKERATOSIS

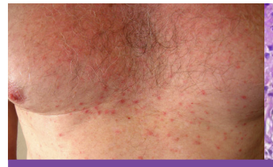
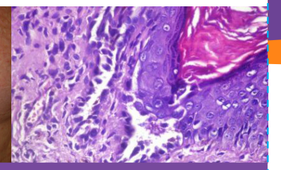



CLINICAL FEATURES	HISTOLOGY
• Various forms including familial (beginning in childhood), sporadic or associated with immunosuppression. • May occur on sun-exposed sites (often legs) in middle aged adults as disseminated superficial actinic porokeratosis (DSAP). Lesions may be up to 10mm and resemble solar keratoses. • Squamous cell carcinoma may develop (except in punctate form) indicating pre-malignant potential of porokeratosis.	• Cornoid lamella is the defining feature: a thin column of parakeratotic cells. Associated with focal loss of the granular layer and with vacuolated and dyskeratotic keratinocytes. Often a lichenoid reaction.

APPROACH TO BIOPSY

- Incisional biopsy at advancing edge, to include reticular dermis.
- Annular lesions may be unsuitable for punch biopsy.

GROVER DISEASE (TRANSIENT/PERSISTENT ACANTHOLYTIC DERMATOSIS)

CLINICAL FEATURES	HISTOLOGY
• Itchy grey-pink papules or papulovesicles, acute eruption. • Precipitated by sweat, sun exposure, ionising radiation, some drugs. • Typically occurs on trunk area of middle-aged and older Caucasian men. • Transient and more persistent chronic forms.	• Tissue reaction pattern of "acantholytic dyskeratosis" with suprabasal clefting. • Perivascular lymphohistiocytic infiltrate in superficial dermis. • A few eosinophils may be present.

APPROACH TO BIOPSY

- The changes in Grover disease are superficial, so may be amenable to punch biopsy or shallow incisional biopsy. A solitary papule may be encompassed by a punch sample which ideally would include a surrounding rim of non-lesional skin.

Additional considerations:
Select an appropriate lesion (biopsy at different stages of a lesion according to clinical differential diagnosis):

- an early lesion in itchy or blistering conditions
- an lesion of intermediate duration if vasculitis is suspected
- a late lesion in lupus, psoriasis or fibrosing lesions
- avoid lesions which are ulcerated or have been treated, for example with topical steroids.

Is ancillary testing required?

- **Infection:** microbiology
- **Blistering, vasculitis:** direct immunofluorescence (DIF)
- **Lymphoma:** submit fresh tissue urgently to lab and/or in suitable transport media; discuss with dermatopathologist.

A further note on blistering conditions: samples should be submitted for histology and DIF. An intact blister should be submitted, usually necessitating a deep shave, incisional or excisional sample. The epidermis often becomes separated in a punch biopsy, rendering this an unsuitable technique.

Finally, **clinicopathological correlation.** Histological examination of a skin biopsy amounts to provision of a specialist medical opinion by a pathologist. Even in optimal circumstances, with clinical information to hand, appropriate biopsy technique and skilled lab processing of the sample, the consultation process can be greatly enhanced by collaboration with the reporting dermatopathologist. A phone conversation and discussion can go a long way to resolving a diagnostically challenging biopsy!

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Photo credits: DermnetNZ, Pathology Outlines, Prof Raimo Suhonen (Discoid Lupus Erythematosus image)
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Updates from the Lab

Decommissioned Clinical Labs WA lab equipment finds new home in Madagascar!

Australian Clinical Labs WA, through a collaboration with Dr Digby Cullen (Gastroenterologist,) recently worked alongside the Australian Doctors for Africa (ADFA) program to find a fantastic new home for a set of decommissioned lab items. The ADFA offers medical, surgical and nursing skills training to local health workers in Ethiopia, Somaliland, Madagascar and Comoros.

The equipment came from a number of laboratories in WA and was in storage before being identified as suitable for the ADFA program and donated to the University of Madagascar for teaching and research purposes. ADFA, founded by Mr Graham Forward (Orthopaedic Surgeon) has been conducting a medical aid program in Madagascar since 2005 focussed mainly on orthopaedics, club foot , gastroenterology, urology, bronchoscopy and more recently laparoscopic surgery/gynaecology.

Clinical Labs WA CEO, Shae Seymour said, “being involved in this program is a simple but really important thing to do. We are committed to improving community health at home and this program allows us to extend that patient-care focus into one of the poorest countries on earth. By giving this equipment, we can help to train the next generation of pathologists and scientists in Madagascar."

The equipment donated to the ADFA included: 4 x microscopes with video equipment to attach to a monitor, two centrifuges, an incubator, histology (H/E) stainer, a gastrolyser and PCR equipment.

Clinical Labs was also able to help ADFA source and supply much needed medications for a range of common ailments that are easy to treat in Australia such as bacterial infections , blood pressure, Hepatitis B or C, blood and other parasitic infestations, sexually transmitted diseases and surgical pain killers.

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Dr Jenny Grew joined our team at Australian Clinical Labs as Clinical Director Anatomical Pathology for WA in 2017. A graduate of the University of Otago (MBChB, 1992) Jenny began pathology training at Christchurch Hospital (NZ), gaining RCPA Fellowship in 2001. Jenny moved from New Zealand with her family (husband Keith and son Dominic) to Queensland in 2007, taking up the role of Pathologist in charge, providing service to 6 public and private hospitals. Jenny’s areas of professional interest include breast, gastrointestinal, gynaecological and cutaneous pathology, cytology, molecular pathology and medical administration. She is a keen educator and champion of multidisciplinary patient care in private pathology.

Hormone Testing at Clinical Labs

INSULIN-LIKE GROWTH FACTOR-1 (IGF-1)

- IGF-1, also referred to as somatomedin-C (Sm-C), is a hormone similar in molecular structure to insulin that is mainly produced by the liver in blood. IGF-1 mediates most of the effects of Growth Hormone (GH). It plays an important role in childhood growth and continues to have anabolic effects in adults
- IGF-1 is produced throughout life. The highest rates of IGF-1 production occur during the pubertal growth spurt. The lowest levels occur in infancy and old age.
- Levels of IGF-1 can vary in the circulation depending on variation in the levels of GH, insulin levels, genetic make-up, the time of day, age, sex, exercise status, stress levels, nutrition level and body mass index (BMI), disease state, ethnicity, estrogen status and xenobiotic intake.

WHY DO WE MEASURE IGF-1?

- IGF-1: is a clinical severity marker. It correlates with GH levels in the blood so it can be a useful marker in the diagnosis of clinical conditions such as acromegaly and GH deficiency.
- IGF-1 can also be useful in assessing patients’ nutritional status, dwarfism, and in monitoring patients on treatment for the above conditions or patients on treatment with recombinant IGF-1.

IGF-1 TEST

- IGF-1 test is a Medicare rebateable
- Can be performed on serum or heparinised plasma samples
- IGF1 test is performed on Siemens Immulite® XPI. Validated Age specific Reference Ranges apply.
- Results are available to clinicians within 2-3 business days.

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ANTI-MÜLLERIAN HORMONE PLUS (AMH PLUS):

As part of the wide range of reproductive pathology services, Australian Clinical Labs has been offering the Anti-Müllerian Hormone (AMH) test using a fully automated Roche Cobas Elecsys® assay which shows excellent analytical performance over other methods including precision, accuracy and functional sensitivity. AMH is an established biomarker produced by antral and pre-antral follicles for assessing ovarian reserve which is considered an important tool in assessing potential fertility.

WHAT’S NEW?

Australian Clinical Labs has introduced the new precise, reliable and robust AMH Plus Immunoassay from Roche Cobas Elecsys®. AMH PLUS enables clinicians to use results when dosing in women undergoing an assisted reproductive technology programme with the human recombinant follicle stimulating hormone (human rFSH), REKOVELLE® (follitropin delta). AMH Age-Specific Reference Ranges (10th-90th percentile) are reported as provided by Roche.

AMH PLUS:

The test is performed on a gel serum tube and clinicians will receive full report of AMH with age specific reference ranges within 2-4 business days. This service is not rebateable by Medicare, and therefore will attract an out of pocket fee.

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