International Academy of Pathology
Malaysian Division

FINAL REPORT

QUALITY ASSURANCE PROGRAM DERMATOPATHOLOGY 2021

IAPMD QAP
IAP MALAYSIAN DIVISION QUALITY ASSURANCE PROGRAMME

NOTES FROM THE COORDINATOR

1. For this 2021 cycle, a total of 9 institutions responded online by the closing date of 28th February 2022
2. IAP-MD QAP provides a platform via the evaluation reports to compare and identify diagnostic insufficiency based on the outcomes of submitted diagnoses and target diagnoses.
3. In the evaluation reports of each cycle, the target diagnosis for each case is provided, followed by a tabulated list of diagnoses submitted by participating laboratories and followed by discussion and possible differential diagnoses on the case.
4. Evaluation of performance of each laboratory is conducted by participating laboratory by comparing own submitted diagnoses with the diagnoses provided in the evaluation reports. Evaluation of performance shall be the responsibility of each participating laboratory.
5. Any queries regarding this final report could be directed to Ikmal Hisyam Bakrin, email: ikmalhisyam@upm.edu.my
6. The coordinator would like to acknowledge the contributions from Dr Saleena Awang, Dr Lee Bang Rom, Dr Faridah Mohamad Taib and Dr Sandhya Raj.

Prepared by,
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Coordinator for DERMPATH IAPMD QAP 2021

CASE 1

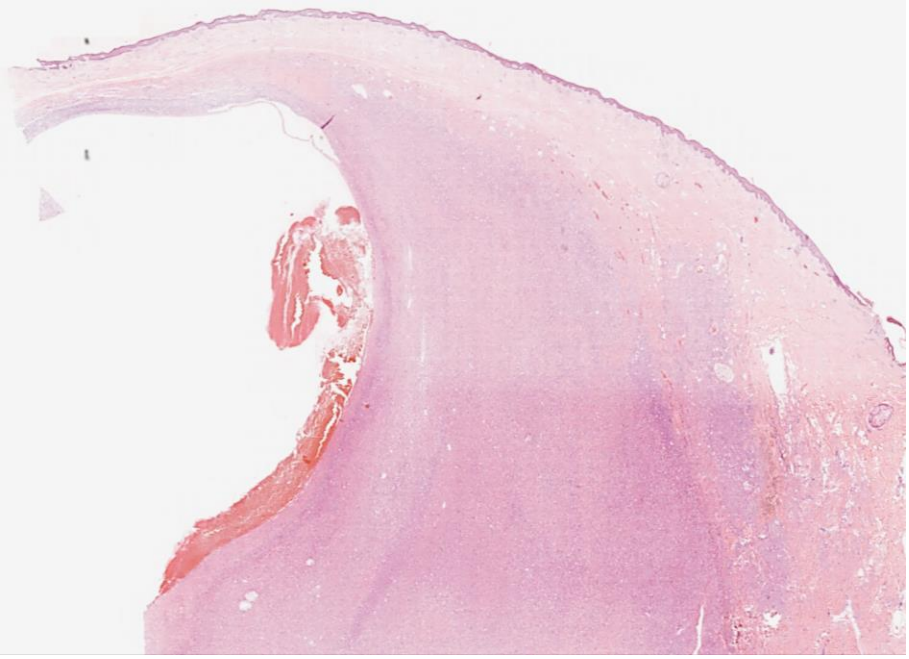
Case No: 20LH2901
HISTORY: 48 years old male. Swelling over right upper back. 5x5cm, large right upper back swelling - wide excision
TARGET DIAGNOSIS: Aneurysmal / Haemosiderotic Fibrous Histiocytoma
MINOR DISCORDANT: Fibrous Histiocytoma, Angiomatoid Fibrous Histiocytoma
MAJOR DISCORDANT: Xanthogranuloma, Vascular neoplasm

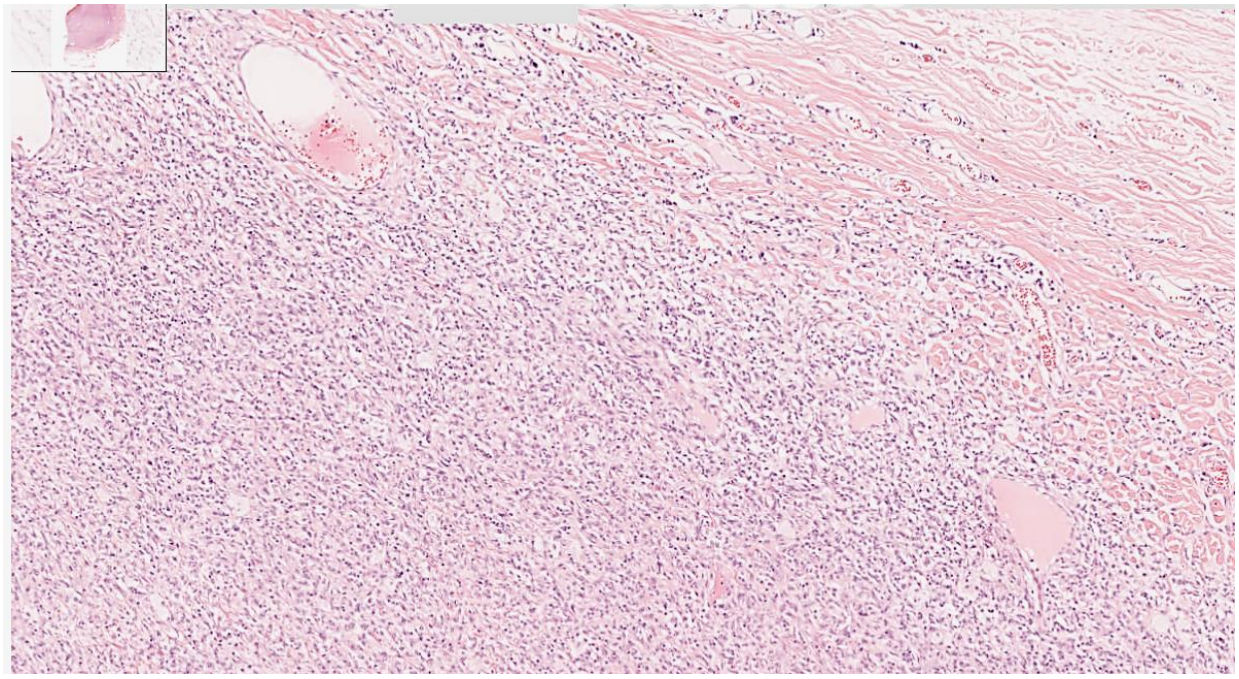
PARTICIPANT RESPONSES:

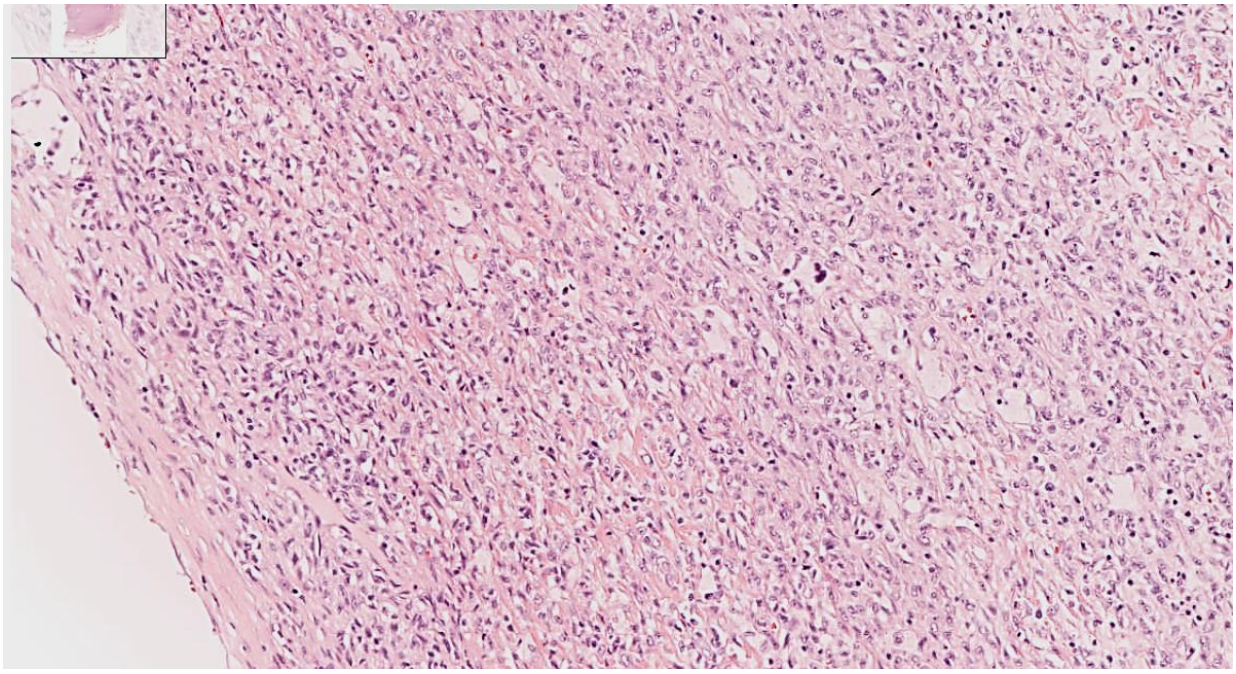
Submitted Diagnoses by Participating Institutions	**Assessment**
Fibrous histiocytoma	Minor Discordance
Benign fibrohistiocytic neoplasm favouring dermatofibroma (?aneurysmal variant)	Concordant
Angiomatoid fibrous histiocytoma	Minor Discordance
Dermatofibroma aneurysmal type	Concordant
Dermatofibroma	Minor Discordance
Dermatofibroma, aneurysmal variant.	Concordant
Dermatofibroma, anerysmal variant	Concordant
Fibrohistiocytic lesion favouring angiomatoid/anerysmal dermatofibroma. To support with immunohistochemical stain CD34	Concordant
Fibrous histiocytoma	Minor Discordance

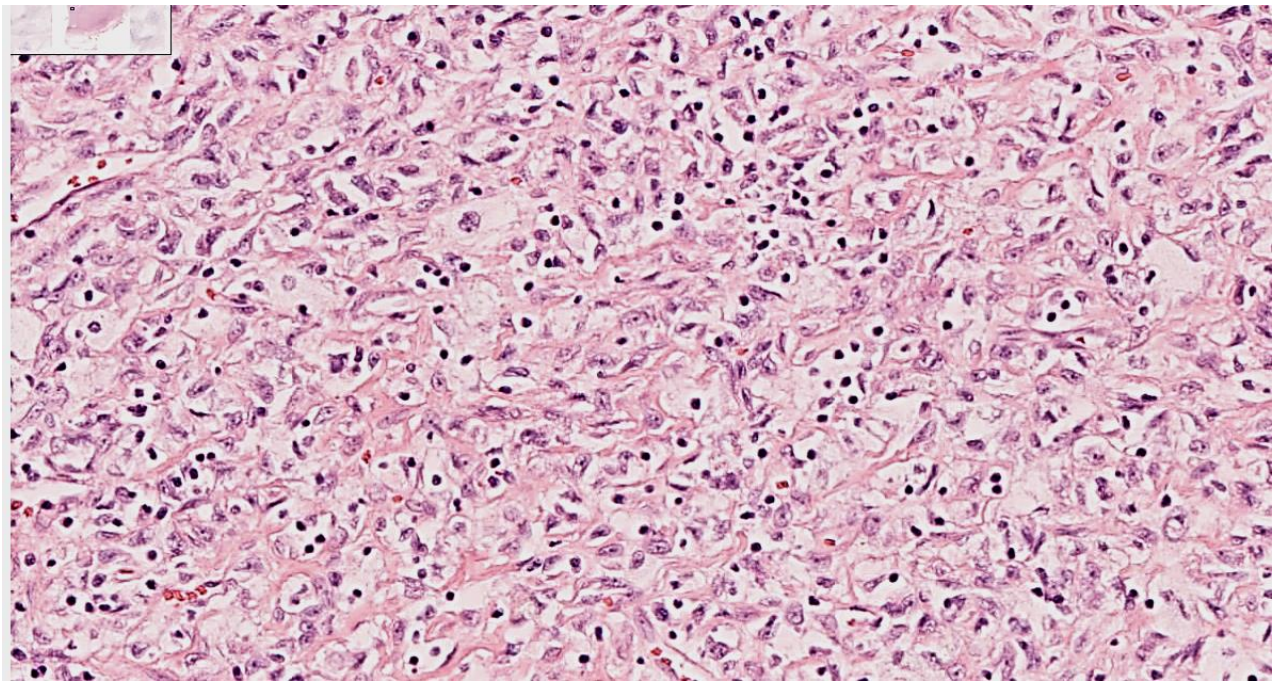
0% Discordant

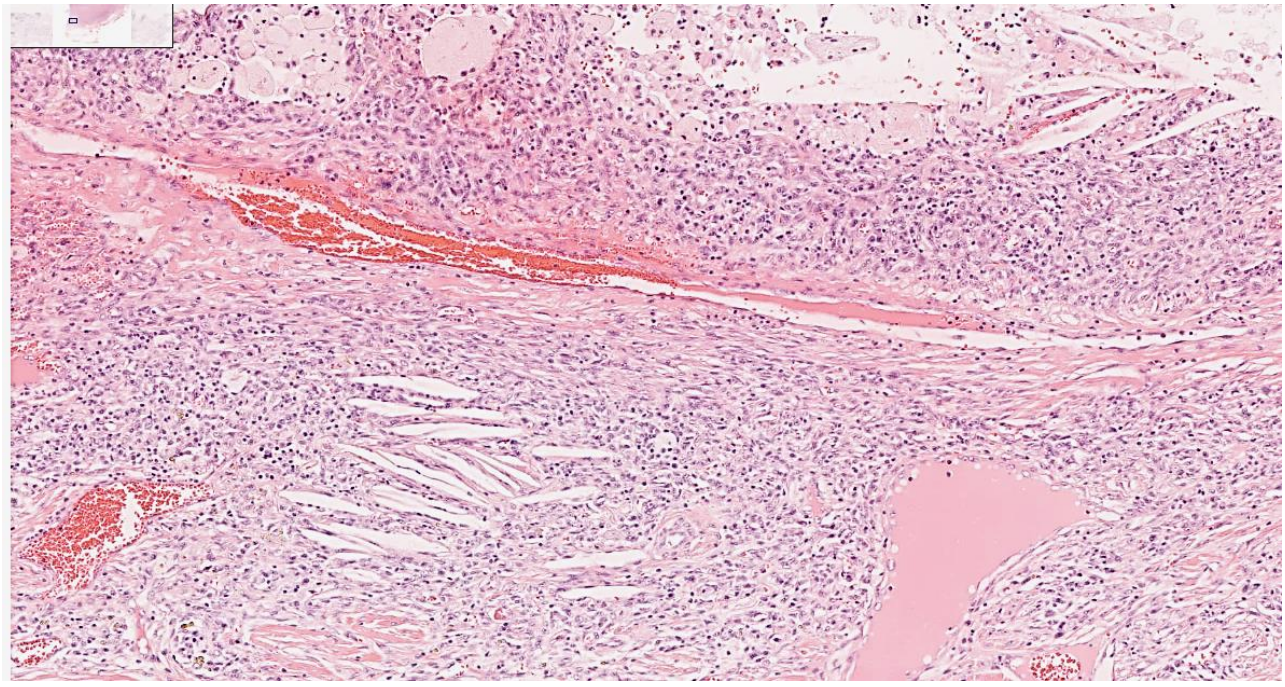
HISTOLOGICAL IMAGE:











EDUCATIONAL NOTES:

1) Sections show an intradermal nodular lesion composed of proliferation of histiocytoid and spindle shaped cells with areas of collagen trapping. The cells display normochromic nuclei with inconspicuous nucleoli and indistinct eosinophilic cytoplasm. The center of the lesion shows cystic-like spaces contains haemorrhagic material. Prominent foamy histiocytes mixed with scattered haemosiderin laden macrophages and moderate to dense lymphoplasmacytic cells infiltrate are also apparent especially at the lesional edge. Mitotic figures are rarely seen. The overlying epidermis shows acanthosis and irregular elongation of the rete ridges. The lesion is completely excised (2mm from peripheral surgical margin and 10mm from the tips).
2) Aneurysmal fibrous histiocytoma was first described by Santa Cruz et al. This variant represents less than 2% of fibrous histiocytoma (FH). Its clinical presentation can be slightly different from that of the common FH, and usually consists of a blue-brown nodule on the limbs. Rapid growth due to extensive hemorrhage can occasionally be seen, and clinical confusion with a melanocytic or vascular lesion is common. The rate of recurrence (19%) is also higher than for common FH. Rare cases present with regional lymph node involvement
3) Histologically, the most typical feature of this variant is the presence of irregular hemorrhagic cleft-like and cystic spaces without endothelial lining. Adjacent solid areas usually show highly cellular tissues typical of common FH. Focal interstitial haemorrhage and hemosiderin deposition is typical. The surrounding stroma contains small capillaries with interstitial hemorrhage and haemosiderin deposition.
4) Angiomatoid fibrous histiocytoma (probably consider as one of the differential diagnosis, unrelated neoplasm with *EWSR1-CREB1* gene fusion) is distinct clinicopathological entity and tends to occur on the extremities of younger patients. It is associated with systemic symptoms, is usually subcutaneous, shows large aggregates of chronic inflammatory cells at edge of tumour in lymphoid follicles and is composed of desmin positive monomorphic spindle to ovoid eosinophilic cells.
5) Haemosiderotic fibrous histiocytoma probably represents a stage in the development of aneurysmal fibrous histiocytoma. The lesion is composed of numerous small vessels, extravasated erythrocytes and intra and extracellular hemosiderin deposition due to haemorrhage.

REFERENCES:

- Mc Kee's Pathology Of The Skin

CASE 2

Case No: 20LH3474

HISTORY: 76 years old male. Complaint of erythematous papules and macules over the chest and trunk. No oral lesion. DIF study was negative

TARGET DIAGNOSIS: Grover disease, pemphigus-like & Darier -like pattern

MINOR DISCORDANT: Darier disease

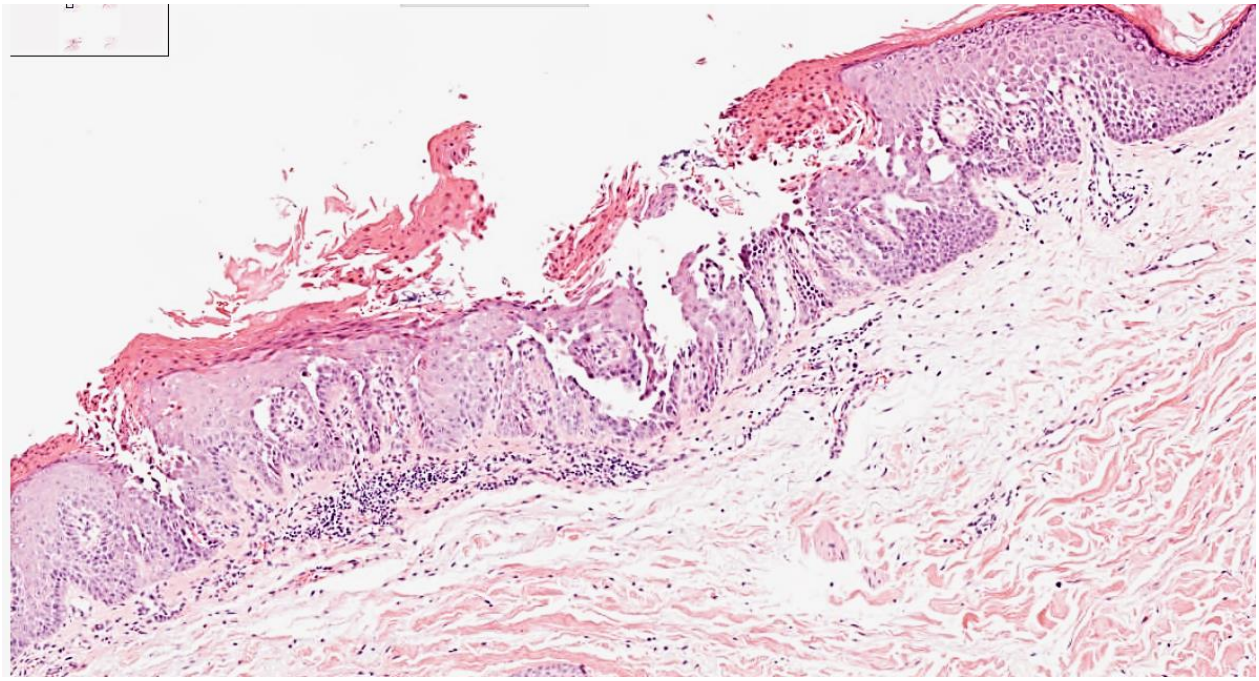
MAJOR DISCORDANT: Pemphigus vulgaris / vegetans

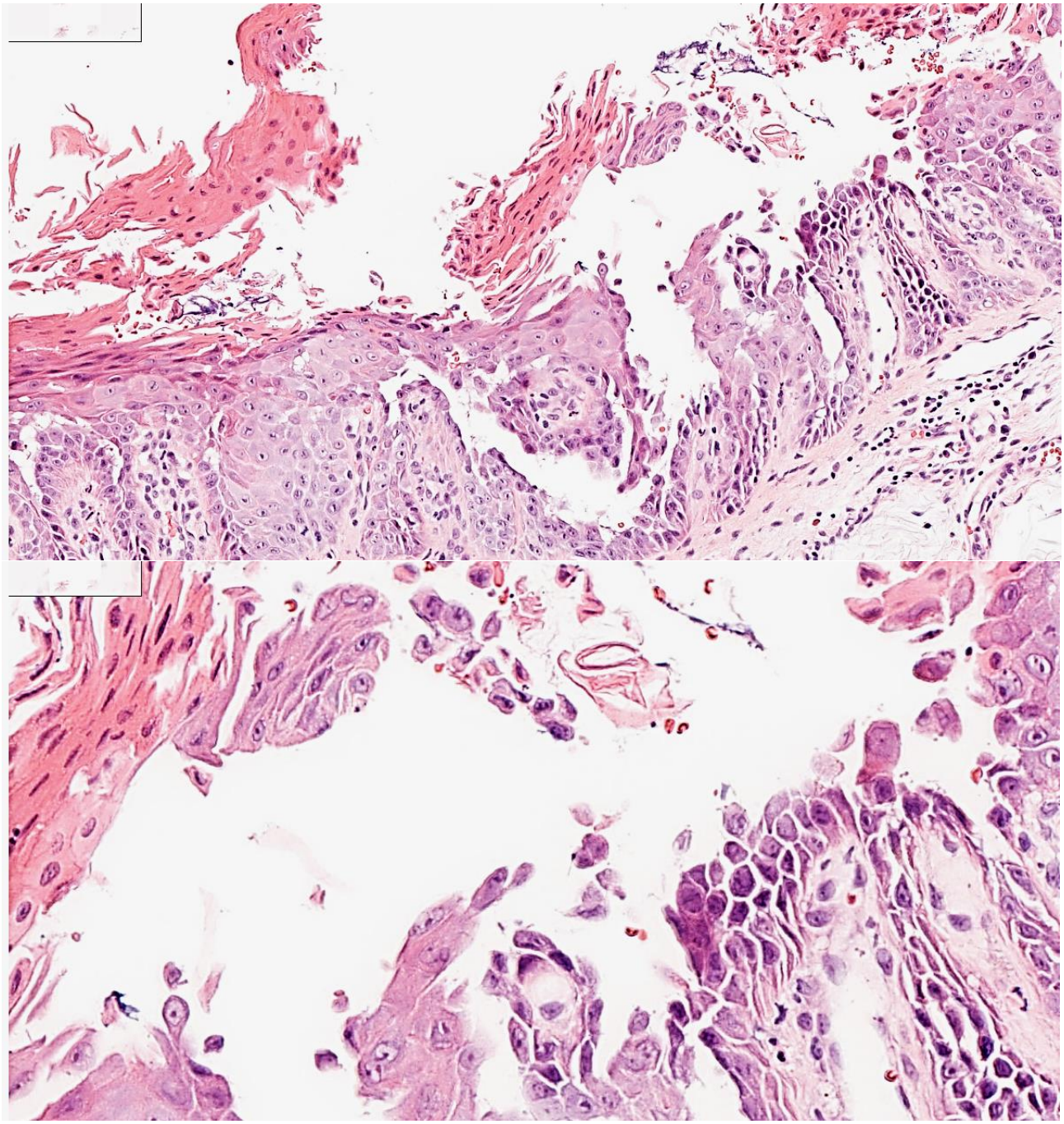
PARTICIPANT RESPONSES:

Submitted Diagnoses by Participating Institutions	**Assessment**
Grover's disease	Concordant
Grover disease	Concordant
Grover disease (Transient acantholytic dermatosis)	Concordant
Transient acantholytic dermatosis (Grover's disease)	Concordant
Acantholytic dermatosis likely Grover disease	Concordant
Acantholytic dermatoses in favour of Grovers disease.	Concordant
Suprabasilar acantholytic dermatosis favour Grover disease. Differential diagnosis - Darier disease	Concordant
Grover disease	Concordant
Acantholytic dermatosis favour Grover's disease	Concordant

0% Discordant

HISTOLOGICAL IMAGE:





EDUCATIONAL NOTES:

1) Section from the skin biopsy shows epidermis exhibiting intraepidermal and focal suprabasilar blister with acantholytic and a few dyskeratotic cells seen. The epidermis also shows mild spongiosis and parakeratosis. There are moderate perivascular lymphocytic cells infiltrate mixed with neutrophils noted in the superficial dermis. The adnexa appear unremarkable.
2) Transient acantholytic dermatosis (Grover disease) is a primary acquired, self-limiting, acantholytic disease of unknown etiology, seen predominantly in the middle-aged or elderly. Males are affected more often than females (3:1). Although the disease is usually transient, persistent and recurring variants have also been described (persistent acantholytic dermatosis) in the literature.
3) The skin lesions are usually rather polymorphic, consisting of 1–3-mm erythematous, red-brown or flesh-colored papules, vesicles, and eczematous plaques with a predilection for the chest, back, and thighs. Superimposed excoriations are associated with the intensely pruritic eruption. Pustular, bullous, nummular, follicular herpetiform, and zosteriform variants have all been documented. The mucous membranes, palms, and soles are commonly spared.
4) Transient acantholytic dermatosis has been described in association with leukemia and lymphoma in addition carcinoma of kidney, renal pelvis, bladder, and prostate and melanoma. It is also shows a positive correlation with asteatotic eczema, allergic, contact dermatitis, and atopic dermatitis.
5) The pathogenesis of Grover disease is incompletely understood. There are, however, a number of important known etiological factors including; sun exposure, excessive heat and sweating, ionizing radiation, adverse reaction to drugs.
6) Instead of featuring specific histopathological changes, Grover disease classically mimics three other diseases: Darier disease, Hailey-Hailey disease, and pemphigus (p. vulgaris and p. foliaceus). The first is by far the most commonly encountered. Thus, in the typical case, there is hyperkeratosis, parakeratosis, acanthosis, and acantholysis accompanied by corps ronds formation and grains of Darier. In the Hailey-Hailey pattern, the acantholysis is much more pronounced such that the dilapidated brick wall appearance is seen. In the pemphigus-like variant, dyskeratosis is typically absent. Multiple specimens from any one patient may disclose differing histologic variants, and superimposed spongiosis is often present. The earliest changes can consist of elongation of rete ridges with focal acantholysis, mild spongiosis, and a superficial perivascular infiltrate that may be difficult to diagnose as Grover disease. Additional features that have been described include porokeratosis-like columns of parakeratosis, lichenoid interface change, reactive keratinocyte atypia, papillary dermal hemorrhage, and epidermolytic hyperkeratosis.

REFERENCES:

- Mc Kee’s Pathology Of The Skin

CASE 3

Case No: P2101478

HISTORY: 17 years old male. Skin lesion at left forearm for 7 years. Increasing in size and numbers, going up proximally multiple well demarcated, hyperpigmented, variably sized thin plaques with irregular border. There are also some well demarcated hyperpigmented macule

TARGET DIAGNOSIS: Porokeratosis

MINOR DISCORDANT: Epidermal nevus

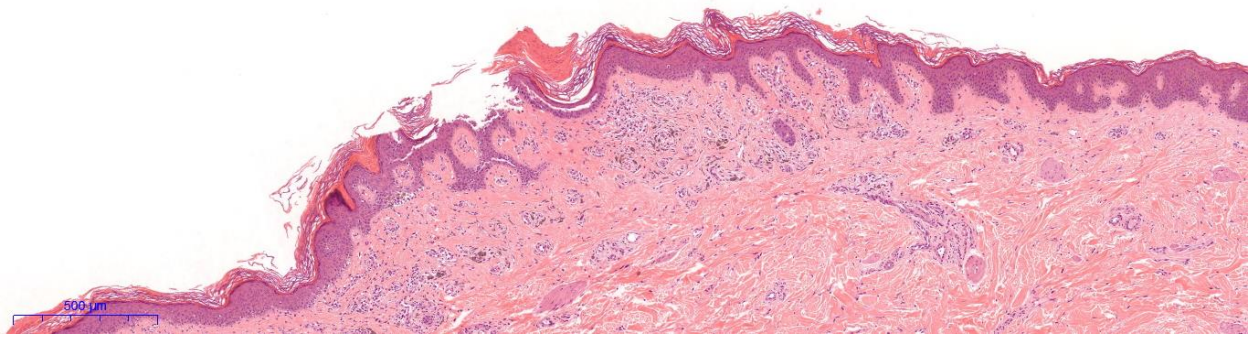
MAJOR DISCORDANT: Actinic keratosis, psoriasis, acantholytic dermatosis

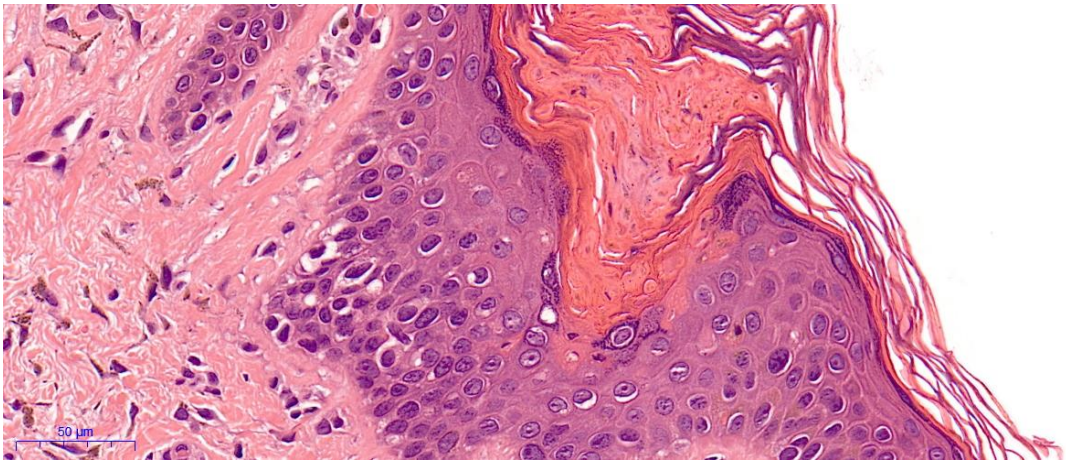
PARTICIPANT RESPONSES:

Submitted Diagnoses by Participating Institutions	**Assessment**
Porokeratosis	Concordant
Pityriasis lichenoides	Discordant
Inflammatory Linear Verrucous Epidermal Naevus (ILVEN)	Minor Discordance
Porokeratosis	Concordant
Lichen planus	Discordant
Alternating parakeratosis and orthokeratosis in favour of Pityriasis Rubra pilaris.	Discordant
Porokeratosis	Concordant
Porokeratosis	Concordant
Porokeratosis	Concordant

33% Discordant

HISTOLOGICAL IMAGE:





EDUCATIONAL NOTES:

1) Section show foci of hyperkeratotic tiers in association with central invagination and angulated raised edge with focal discrete parakeratotic column. The central epidermis appears either acanthotic or atrophic. Focal mild loss of granular layer and presence of occasional dyskeratotic cells are observed. Also appreciated is interface change with basal vacuolar change, mild lymphocytic infiltrates and pigmentary incontinence.
2) Porokeratosis is not an uncommon pathological process. It is a clonal keratinocytic proliferation with characteristic clinical and pathologic appearance characterized by the cornoid lamella. The cornoid lamella represents a localized area of faulty keratinization and is manifest clinically as a raised keratotic or thin thread-like border to an annular, gyrate, or linear lesion.
3) There are six major categories: classical, localized, linear, punctate, disseminated superficial porokeratosis (DSP), and disseminated superficial actinic porokeratosis (DSAP), all of which may be inherited as an autosomal dominant, but sporadic cases also occur.
4) Cornoid lamellae may be an incidental finding associated with normal skin and a variety of inflammatory, hyperplastic and neoplastic lesions including in situ and invasive squamous cell carcinoma, basal cell carcinoma, and actinic keratosis.

REFERENCES:

- Mc Kee's Pathology Of The Skin
- Weedon's Skin Pathology, 4th edition
- PathologyOutlines.com

CASE 4

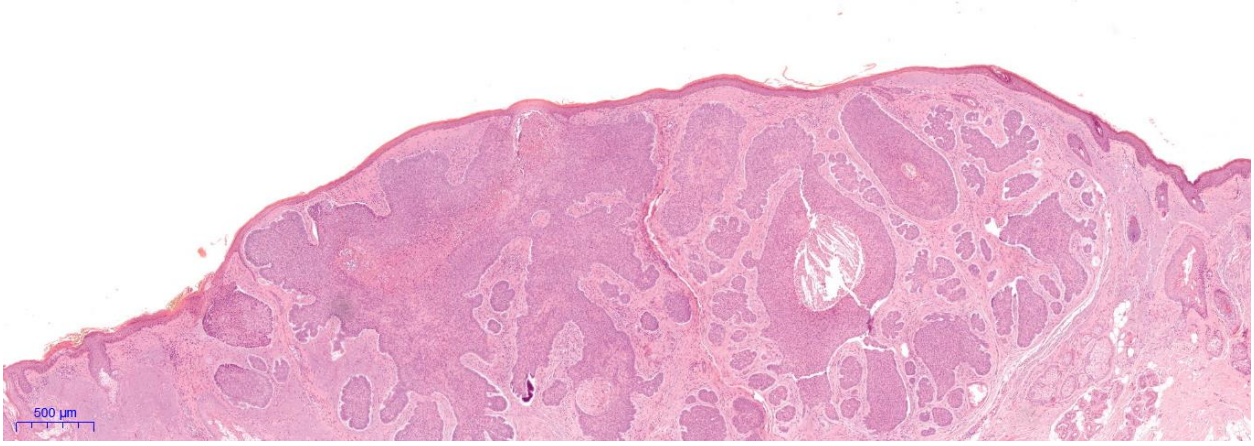
Case No: P2104206
History: 82 years old Chinese man. Hyperpigmented raised lesion on the upper lip 8x8mm
TARGET DIAGNOSIS: Basal cell carcinoma with actinic keratosis
MINOR DISCORDANT: Basal cell carcinoma
MAJOR DISCORDANT: Trichoblastoma, Skin appendageal tumour, Squamous cell carcinoma

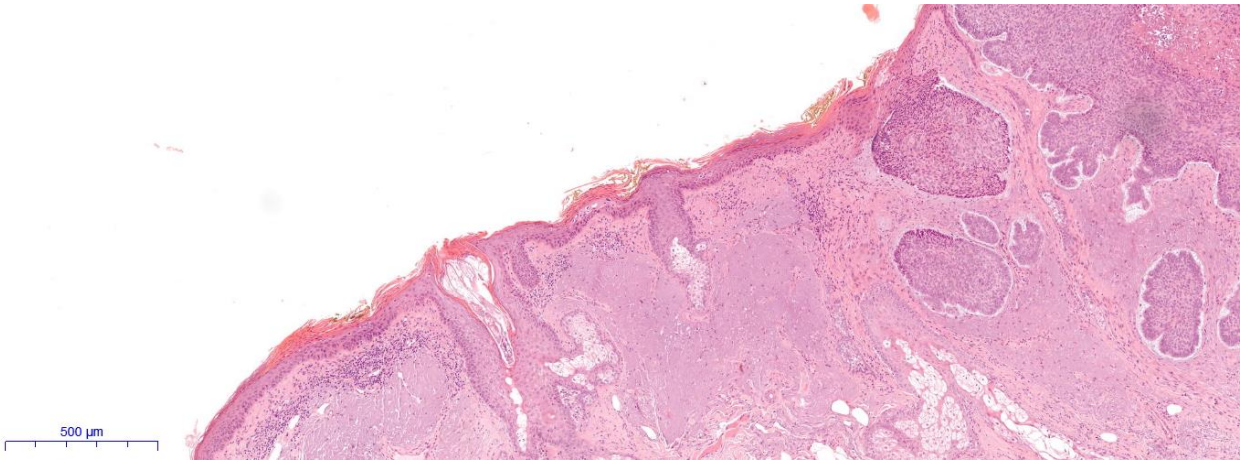
PARTICIPANT RESPONSES:

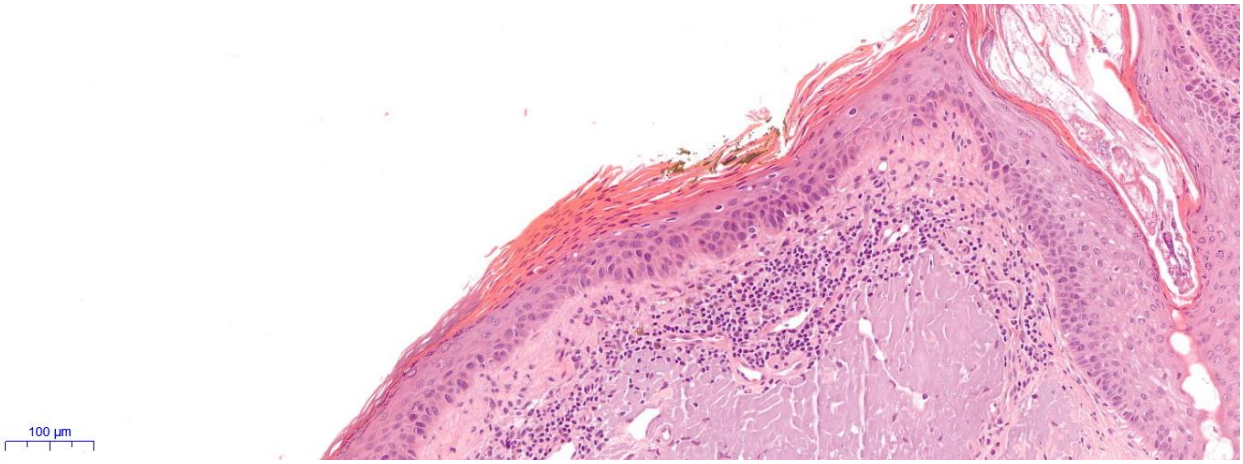
Submitted Diagnoses by Participating Institutions	**Assessment**
Basal cell carcinoma, dysplasia, Demodex with amyloid	Concordant
Basal cell carcinoma	Minor Discordance
Nodular basal cell carcinoma	Minor Discordance
Nodular basal cell carcinoma	Minor Discordance
Basal Cell Carcinoma	Minor Discordance
1. Nodular Basal cell carcinoma 2. Actinic keratosis 3. dermodex folliculorum infestation	Concordant
Basal cell carcinoma	Minor Discordance
Basal cell carcinoma. For immunohistochemical stains p40, p63, BerEP4, EMA TRO basaloid SCC	Minor Discordance
1. Basal cell carcinoma 2. Actinic keratosis	Concordant

0% Discordant

HISTOLOGICAL IMAGES:







EDUCATIONAL NOTES:

1) Section shows sheets and nests of basaloid tumor cells within the dermis with epidermal continuity seen. The cells exhibit pleomorphism, mitotic figures, apoptosis and peripheral palisading of the nuclei. Peritumoral stroma is fibromyxoid with tumour stroma retraction seen. The dermis also exhibit marked solar elastosis. The overlying epidermis at the tumour edge show dysplasia, mitoses, hyperkeratosis and parakeratosis with loss of granular layer.
2) Basal cell carcinoma is the most common cutaneous malignant neoplasm, being four to five times more frequent than squamous cell carcinoma, and the incidence appears to be rising. Basal cell carcinoma is slightly more common in men than in women and it is very rare in blacks. They are capable of gross tissue destruction, particularly those lesions arising on the head, which may erode the nose or orbital contents and even extend into the brain.
3) Essential features are nests of basaloid cells with peripheral palisading associated with a fibromyxoid stroma. There are many variants, 45-60%of which are nodular/ulcerative subtypes.
4) Actinic keratosis is an intraepidermal keratinocytic lesion secondary to solar damage. It is the most common precursor of cutaneous squamous cell carcinoma. There is epidermal

dysplasia from mild changes through to carcinoma in situ associated with parakeratosis, dermal solar elastosis and mild dermal lymphocytic infiltrate.

5) There are also many variants of actinic keratosis. Its presence reflects the total actinic damage to the skin and serves as an indicator to identify a high-risk population for the development of sun damage-related disease such as squamous cell carcinoma, basal cell carcinoma and, to a lesser extent, melanoma at other sites.
6) The distinction of actinic keratoses from superficial basal cell carcinoma may sometimes be problematical. In these circumstances, immunohistochemistry for bcl-2 and Ber-EP4, both of which stain positively in basal cell carcinoma and are negative in actinic keratoses, can be helpful
7) Actinic keratosis lesions do not appear to be a precursor to basal cell carcinomas. Basal cell carcinomas do not require a co-existing actinic keratosis lesion to develop.

REFERENCES:

- Mc Kee's Pathology Of The Skin
- Weedon's Skin Pathology, 4th edition
- PathologyOutlines.com

CASE 5

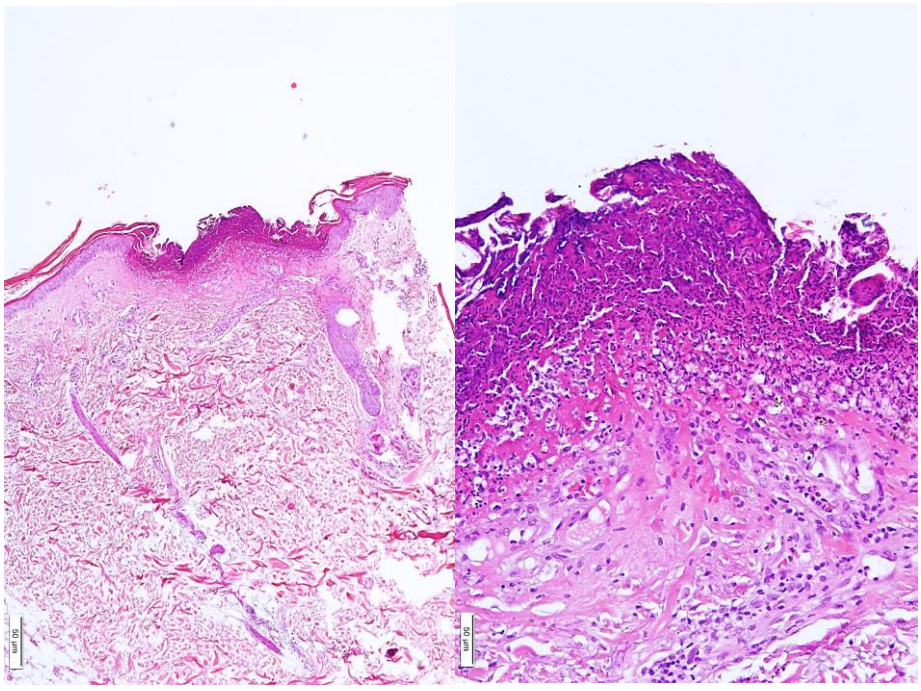
Case No: 1901316
History: 53 years old female with underlying chronic lung disease presented with forearm ulcers
TARGET DIAGNOSIS: Perforating collagenosis (Acquired Perforating Collagenosis)
MINOR DISCORDANT: Keratosis pilaris, Elastosis Perforans Serpiginosa
MAJOR DISCORDANT: Infected ulcer, Impetigo

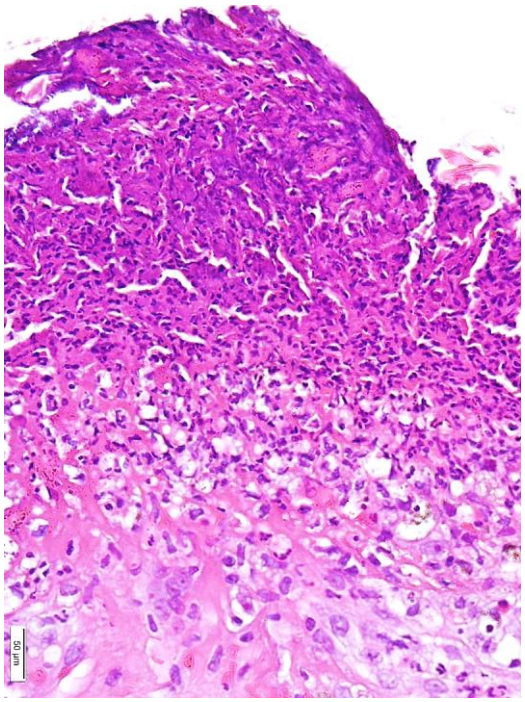
PARTICIPANT RESPONSES:

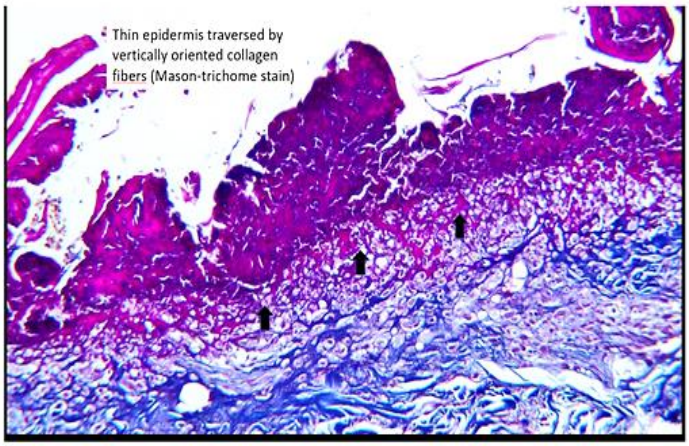
Submitted Diagnoses by Participating Institutions	**Assessment**
Leucocytoclastic vasculitis with fungal organism	Discordant
Leukocytoclastic vasculitis	Discordant
Vasculitis with skin ulceration, suggestive of Churg-Strauss syndrome (Eosinophilic granulomatosis with polyangiitis)	Discordant
Benign ulcer	Discordant
Vasculitis ulcer	Discordant
Reactive perforating collagenosis	Concordant
Reactive perforating collagenosis	Concordant
Perforating dermatosis. Differential includes acquired/reactive perforating collagenosis, Kyrle's disease	Concordant
Perforating collagenosis	Concordant

56% Discordant

HISTOLOGICAL IMAGES:







EDUCATIONAL NOTES:

1) Section of the skin biopsy shows a broadened dermal ridge containing degenerate, basophilic collagen. The overlying epithelium is atrophic and centrally is composed of a thin layer of parakeratotic material. At the lateral margins, there is acanthosis. The central plug is composed of parakeratotic debris, degenerate collagen, and inflammatory cells. The epidermis deep to the plug is markedly thinned and is traversed focally by vertically orientated collagen fibers. Elastic fibers are not present within the extruded connective tissue debris. The epidermis adjacent to the central plug is acanthotic and hyperkeratotic. A lymphohistiocytic infiltrate is present in the superficial dermis. The Masson Trichrome stain shows the thin epidermis traversed by vertically orientated collagen fibers. The histologic appearances in reactive perforating collagenosis and acquired perforating collagenosis are identical. Distinction between these disorders requires clinical correlation
2) This is a very rare disorder of uncertain etiology in which patients are predisposed to develop an unusual skin reaction to mild trauma, causing damaged collagen to be extruded through the epidermis. Although sporadic cases do occur, in many instances reactive perforating collagenosis appears to be an inherited condition, autosomal recessive and dominant variants having been described.
3) The disease shows an equal sex incidence, with most cases presenting in childhood, although lesions tend to persist into adult life, may be precipitated by sun exposure. An acquired variant occurring in adulthood is mainly associated with diabetes mellitus and renal failure. Other associations include insect bites, Down syndrome, lupus erythematosus, dermatomyositis, leukocytoclastic vasculitis, urticarial vasculitis, IgA nephropathy, hydronephrosis, lung fibrosis, herpes zoster infection (Wolf isomorphic phenomenon), cytomegalovirus, scabies, lymphoma, leukemia, and carcinoma (including papillary thyroid carcinoma, breast carcinoma, hepatocellular carcinoma, and lung adenocarcinoma).

REFERENCES:

- McKee's Pathology of the Skin, 4th edition 2012, Elsevier Limited
- Weedon’s Skin Pathology, Fourth edition

CASE 6

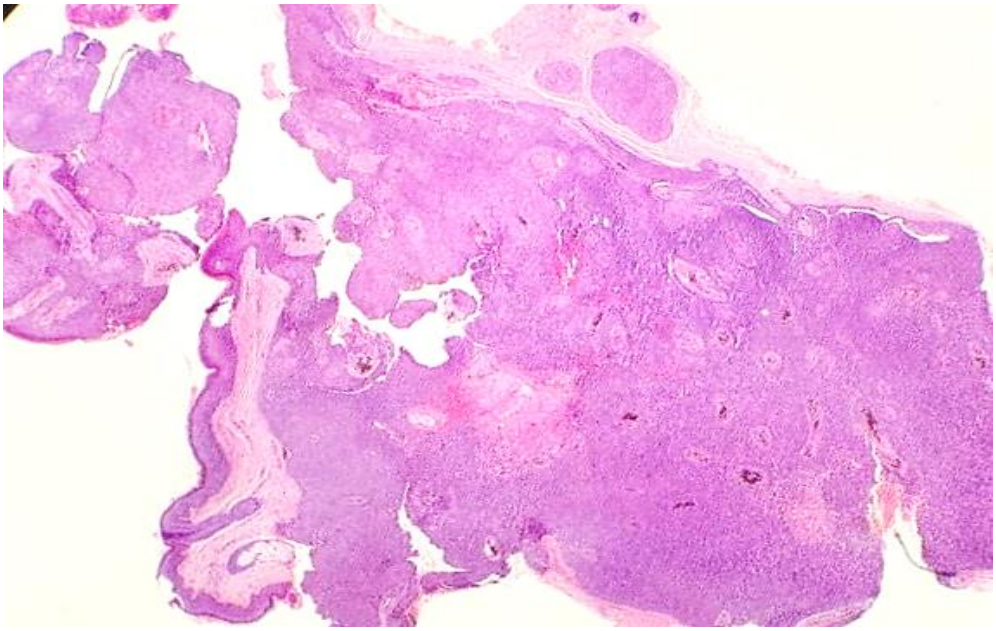
Case No: 2111280
History: 18-year-old lady with a right medial canthus recurrent lesion
TARGET DIAGNOSIS: Nodular hidradenoma
MINOR DISCORDANT: Poroma
MAJOR DISCORDANT: Spiradenoma

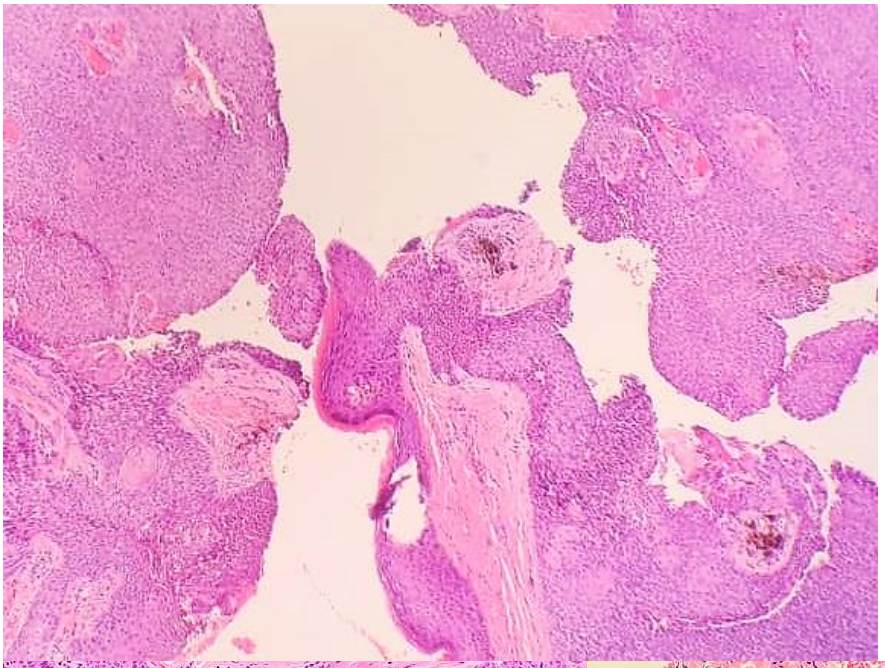
PARTICIPANT RESPONSES:

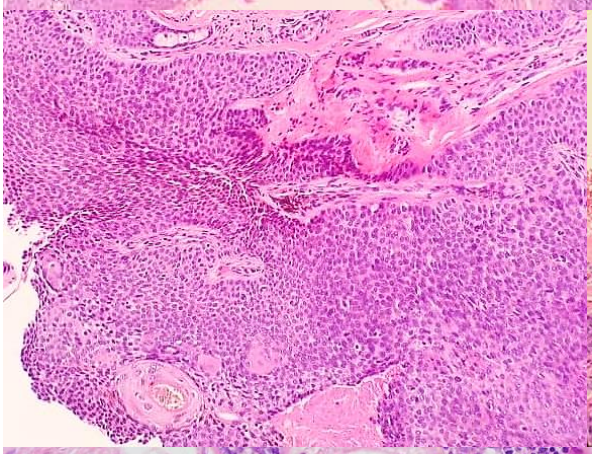
Submitted Diagnoses by Participating Institutions	**Assessment**
Benign adnexal tumour suggestive of syringocystadenoma papilliferum	Discordant
Poroma	Minor Discordance
Pigmented eccrine poroma	Minor Discordance
Trichoblastoma; pigmented variant	Discordant
Poroma	Minor Discordance
Benign appendageal tumour suggestive of trichoepithelioma	Discordant
Poroma	Minor Discordance
Poroma	Minor Discordance
Hidradenoma	Concordant

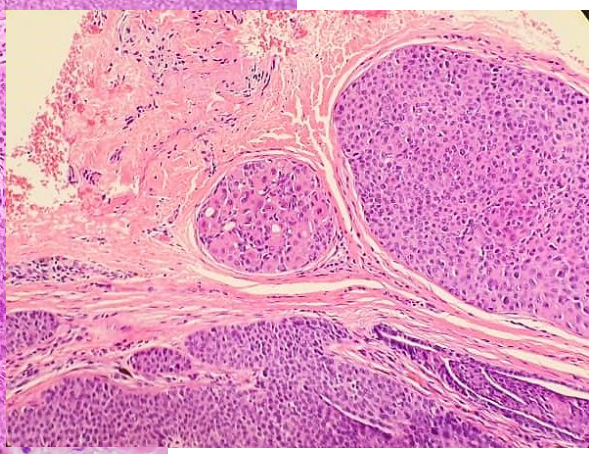
33% Discordant

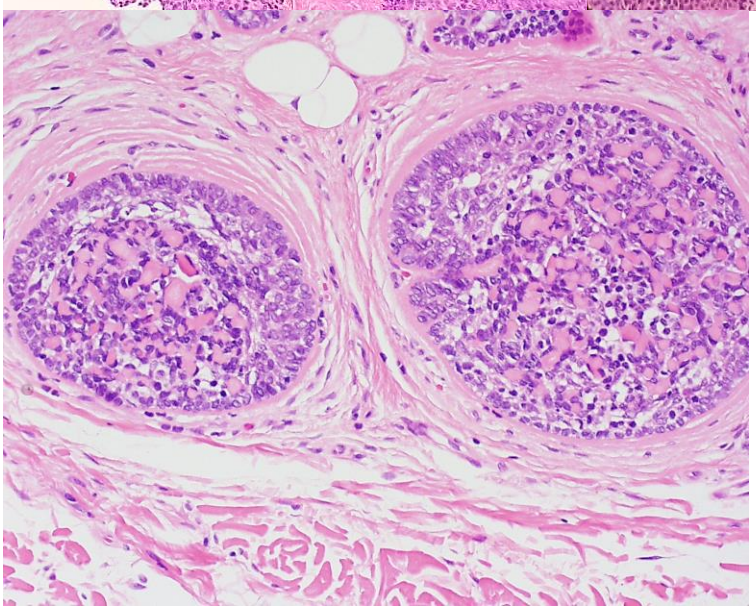
HISTOLOGICAL IMAGES:











EDUCATIONAL NOTES:

1) Section of the skin tissue shows a part of the epidermis and dermis having a circumscribed, unencapsulated tumour with focal epidermal connection. The tumour has a nodular configuration with a few nodules extending into the dermis and consists of mainly solid areas comprising two types of epithelial cells. One of the cell types shows a round to oval nucleus, an indistinct cell boundary, and eosinophilic cytoplasm. The other cell type which is seen only in focal areas is composed of a small eccentrically placed nucleus, a well-demarcated cell border and clear cytoplasm. Tubular lumina containing homogenous eosinophilic material are present within the solid lobules. Scattered melanin pigment is appreciated. Areas of squamous differentiation are seen. Sweat ducts which are intimately associated with the tumour cells are observed. Mitotic figures are rare. No necrosis is seen. The dermis shows a mild perivascular lymphoplasmacytic infiltrate.
2) 2. Hidradenoma (clear cell hidradenoma, solid–cystic hidradenoma, clear cell myoepithelioma, eccrine acrospiroma), which generally occurs on the head and neck or limbs (although any site may be affected), usually presents as a solitary, slowly growing, solid, or cystic nodule. The overlying skin may be flesh colored, erythematous, or blue. Lesions typically measure about 1–2 cm in diameter and present most often in middle-aged adults or the elderly (range 3–93 years), with a slight predominance in females. Exceptionally, children are affected. The tumors are sometimes symptomatic, with spontaneous oozing, hemorrhage, tenderness, pruritus, and burning.
3) The histogenesis of this tumor is uncertain. In keeping with an eccrine derivation, the tumor has been shown to contain large quantities of succinic dehydrogenase, amylophosphorylase, and leucine aminopeptidase. A small series of cases was published in which GCDPF-15 was expressed. It has been proposed that clear cell variants are of apocrine derivation whereas only a minority of tumors composed of poroid and cuticular cells are of true eccrine derivation/differentiation (poroid hidradenoma). A reproducible chromosomal translocation t (11;19) (q21; p13) involving the CRTC1 and the MAML2 genes has been reported in salivary gland tumors such as mucoepidermoid carcinoma and Warthin tumor and has also been detected in approximately 50% of hidradenomas. This fusion appears to be particularly prevalent in tumors with clear cell features. At least a subset of the remaining tumors has been found to harbor the chromosomal translocation t(6;22) involving the EWS and the POU5F1 genes.

REFERENCES:

- McKee's Pathology of the Skin, 4th edition 2012, Elsevier Limited
- Weedon’s Skin Pathology, Fourth edition

CASE 7

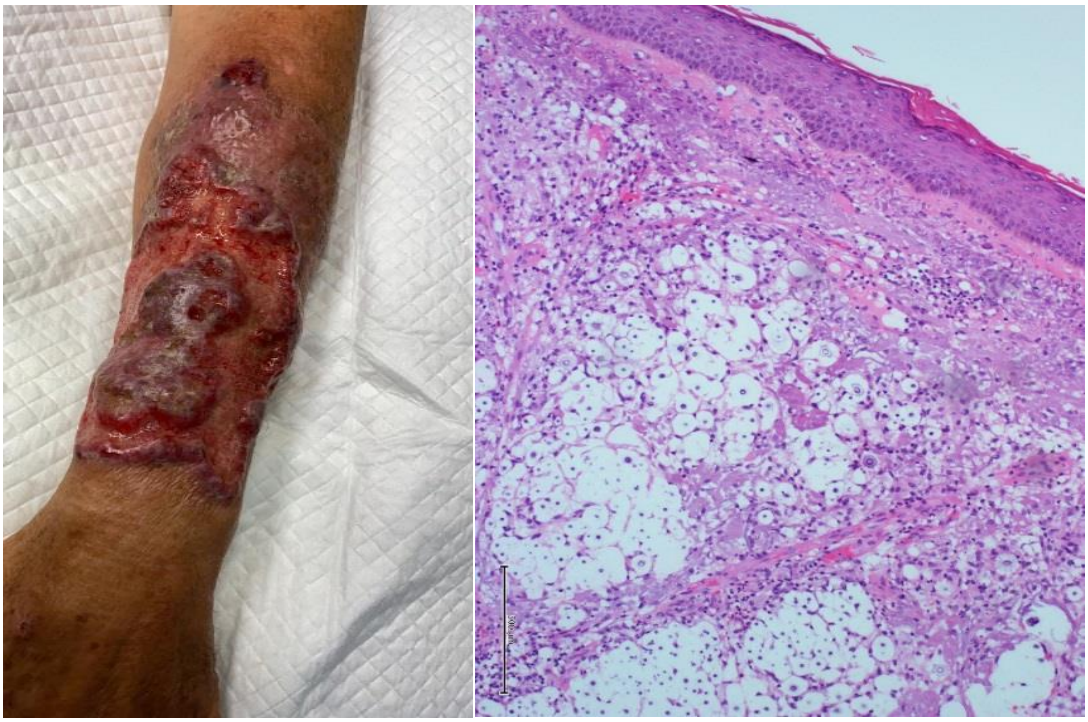
Case No: 21NH2486
HISTORY: 70 years old male, ulcerated nodules on forearm
TARGET DIAGNOSIS: Cutaneous deep fungal infection (Cryptococcus gatti)
MINOR DISCORDANT: Other yeast form deep fungal infection
MAJOR DISCORDANT: Leprosy

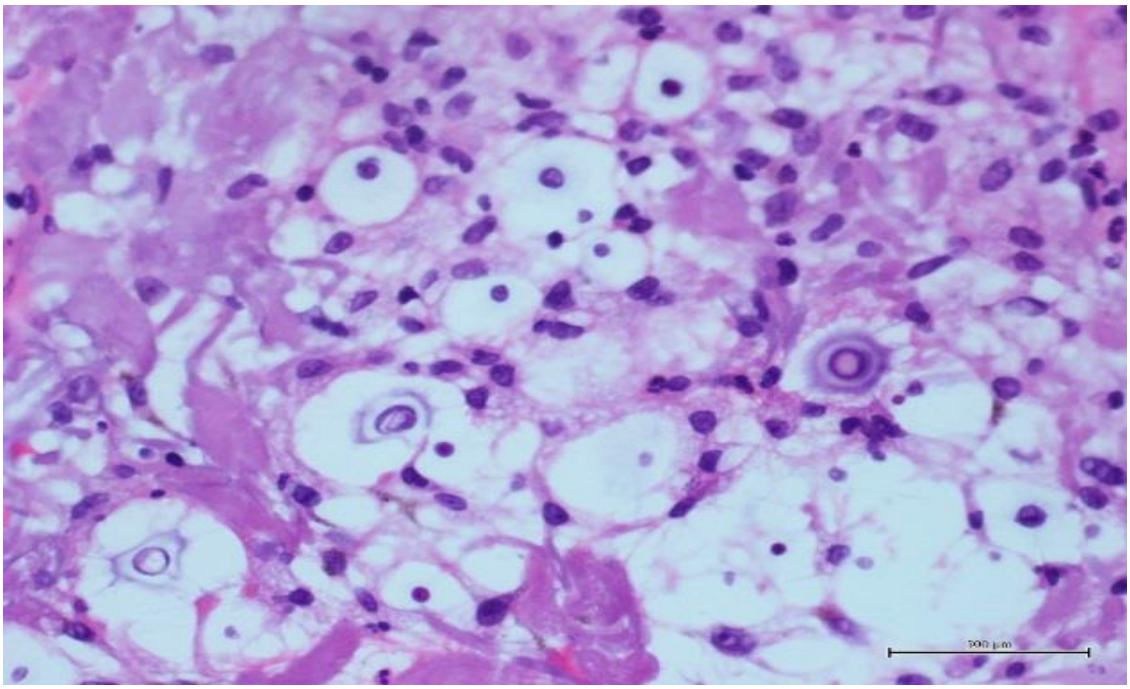
PARTICIPANT RESPONSES:

Submitted Diagnoses by Participating Institutions	**Assessment**
Cryptoccocus infection	Concordant
Dermal fungal infection, suggestive of Cryptococcus	Concordant
Cryptococcosis	Concordant
Fungal infection; morphologically consistent with Cryptococcus neoformans	Concordant
Cutaneous mycosis-Cryptococcus	Concordant
extracellular fungal inflammation consistent with cryptococcosis	Concordant
Cutaneous fungal infection suggestive of Cryptococcus	Concordant
Cutaneous cryptococcosis	Concordant
Cutaneous cryptococcosis	Concordant

0% Discordant

HISTOLOGICAL IMAGE:





EDUCATIONAL NOTES:

1) Section shows spongiotic epidermis. The dermis and subcutaneous fat shows diffusely infiltration of foamy macrophages. There are focal nodules of epithelioid granuloma and multinucleated giant cells. There are numerous round / oval yeast, 8 - 19 microns noted. Focal centre of the granuloma shows necrosis. There is no evidence of malignancy seen. Granulomatous inflammatory lesion with deep fungal infection.
2) Suggestive of Cryptococcus or other deep fungus including Coccidioidomycosis.

Mycosis	Causative Agent	Diagnosis	Treatment
Paracoccidioidomycosis	*Paracoccidioides brasiliensis*	Direct mycological examination and culture; histology; PCR	Long-term systemic antifungals
Coccidioidomycosis	*Coccidioides immitis/Coccidioides posadasii*	Direct mycological examination and culture; histology; specific IgM antibodies; PCR	Long-term systemic antifungals
Histoplasmosis	*Histoplasma capsulatum*	Histology; detection of fungus in blood, bone marrow, and cerebrospinal fluid; culture; PCR	Systemic antifungals for 6-24 mo
Cryptococcosis	*Cryptococcus neoformans*	Direct microscopic examination with India ink stains; culture; serology; PCR; mass spectrometry (rapid and specific)	Amphotericin B with fluorocytosine; fluconaz (both for long periods depending on response t

REFERENCES:

- McKee's Pathology of the Skin, 4th edition 2012, Elsevier Limited
- Weedon’s Skin Pathology, Fourth edition

CASE 8

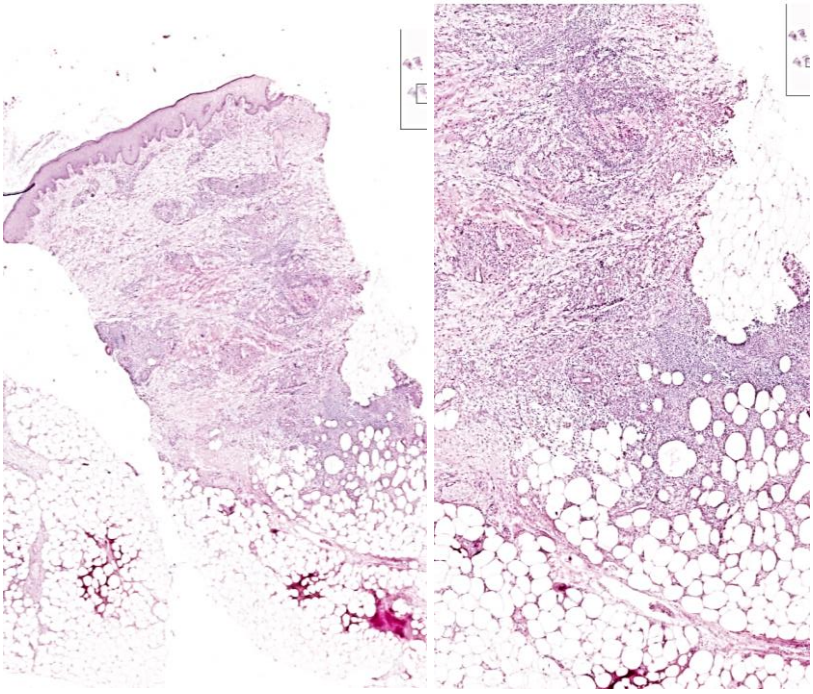
Case No: 21GH2466
HISTORY: 60 years old female, intermittent fever, multiple painful erythematous indurated swellings on both shins and feet
TARGET DIAGNOSIS: Erythema induratum (Nodular vasculitis)
MINOR DISCORDANT: Erythema nodosum
MAJOR DISCORDANT: SPTCL

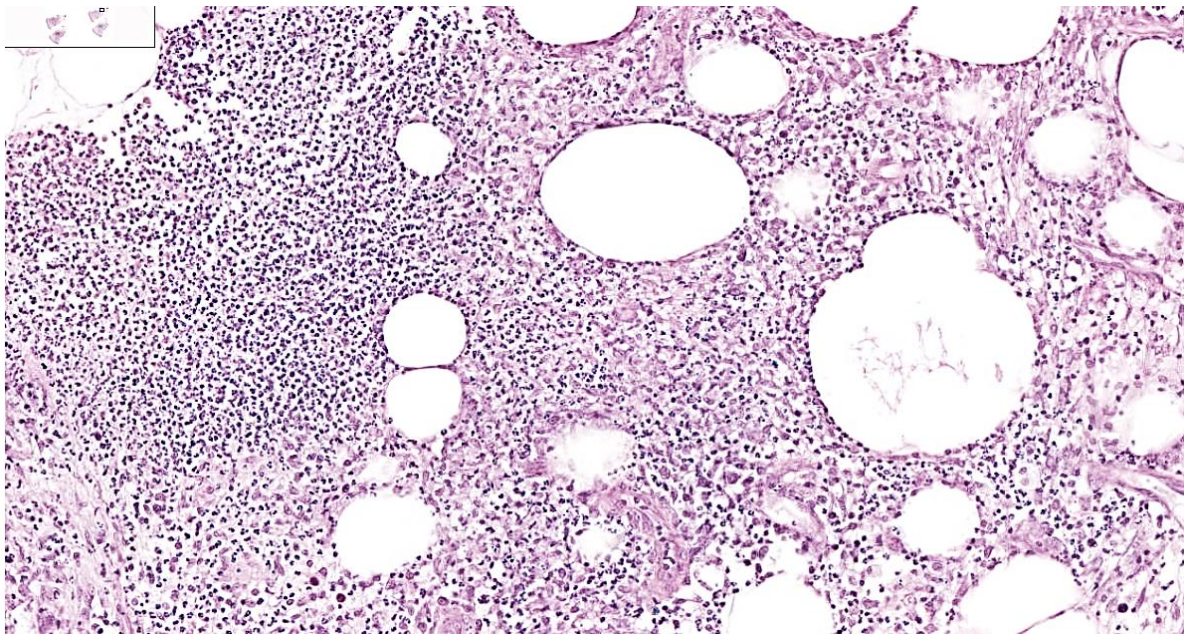
PARTICIPANT RESPONSES:

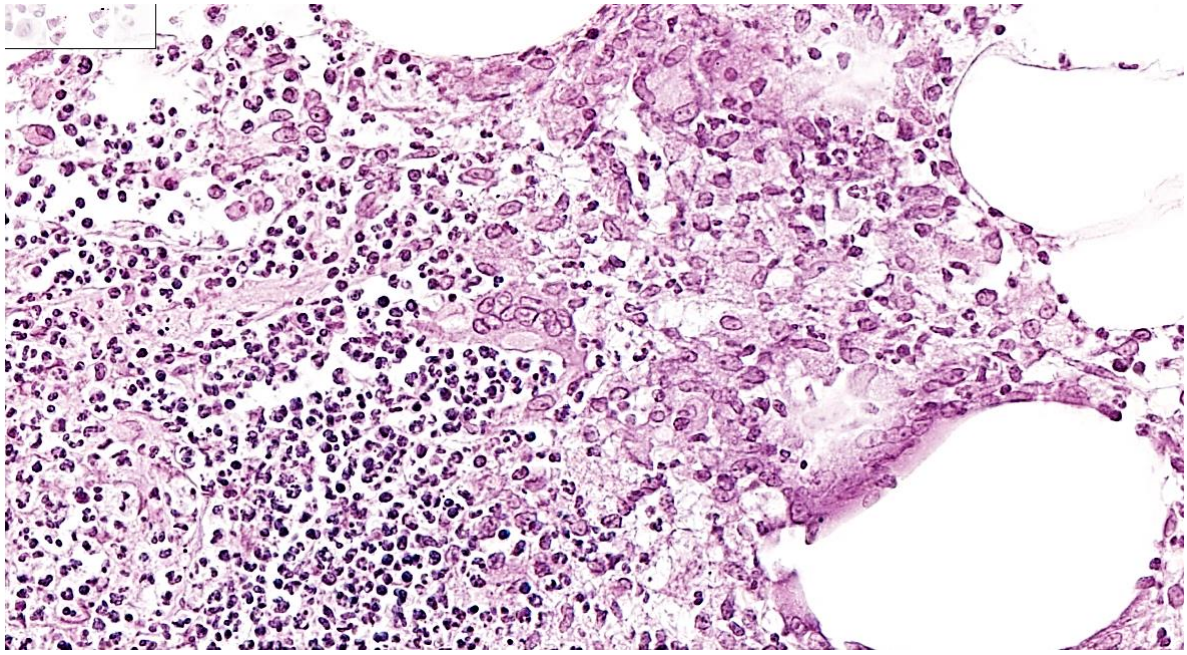
Submitted Diagnoses by Participating Institutions	**Assessment**
Erythema nodosum	Minor Discordance
Erythema nodosum (differential diagnosis include erythema induratum)	Minor Discordance
Erythema nodosum	Minor Discordance
Erythema induratum	Concordant
Erythema induratum	Concordant
Suppurative granulomatous inflammation with lobular panniculitis in favour of erythema induratum.	Concordant
Erythema induratum	Concordant
Nodular vasculitis (erythema induratum). For Ziehl Neelsen stain to rule out TB	Concordant
Nodular vasculitis	Concordant

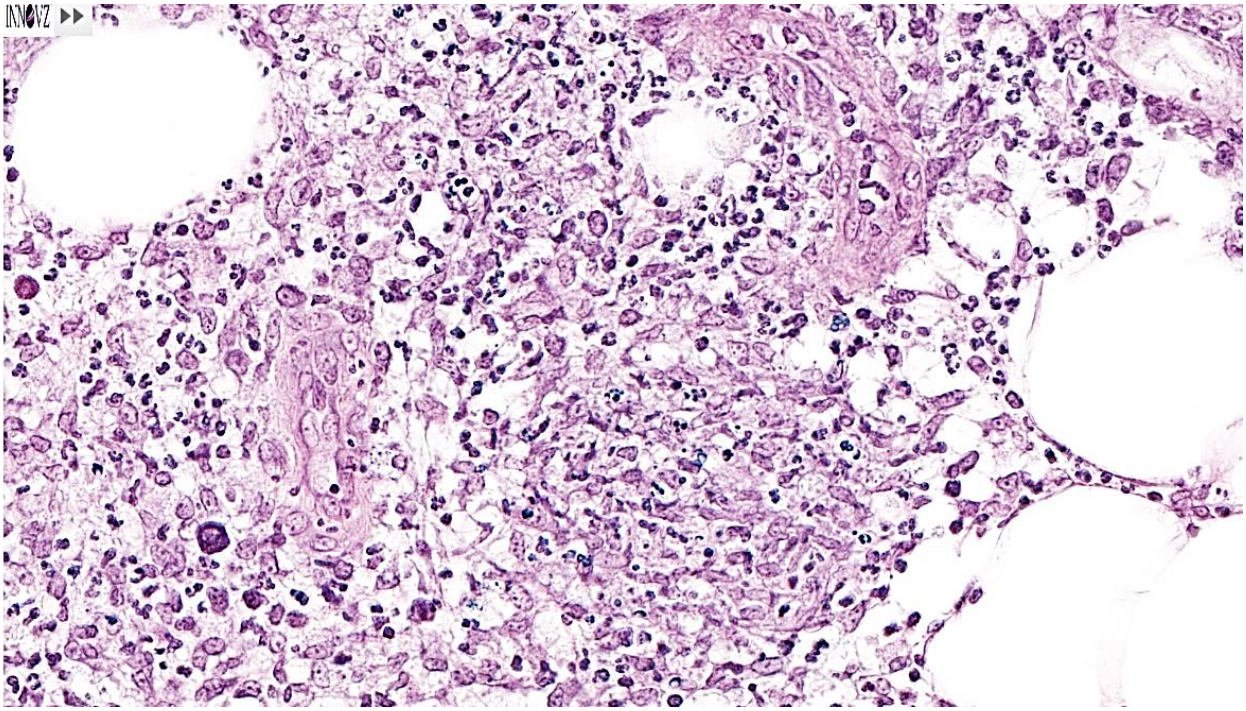
0% Discordant

HISTOLOGICAL IMAGE:









EDUCATIONAL NOTES:

1) Section shows epidermis with marked spongiosis. There is no basal cells vacuolation seen. The superficial dermis shows mild perivascular lymphocytic cells infiltration. There are clusters of granulama with associated multinucleated giant cells and vasculitis in the dermis. The subcutaneous fat shows mainly lobular panniculitis with neutrophils, (abscess formation) lymphocytes and plasma cells infiltration. These inflammatory cells are infiltrating the wall of the small vessels. Two medium size muscular vessels show vasculitis and thrombosis. The smaller capillaries show neutrophils infiltration. Numerous granuloma and multinucleated giant cells are seen. There is focal caseation necrosis.
2) Nodular vasculitis (erythema induratum) is a rare condition which usually presents in young or middle-aged women, often in those with an erythrocyanotic circulation. Males are only rarely affected. Patients present with painful, tender, violaceous, indurated nodules particularly affecting the calves although the shins, feet, ankles, thighs, and upper limbs may sometimes be involved.
3) Lesions are often bilateral, and the overweight with fat calves are most often affected. Skin lesions often recur over many years. Ulceration is common and scarring with hyperpigmentation frequently accompanies healing.
4) In those cases that represent a manifestation of underlying tuberculosis, the term erythema induratum (Bazin disease) is frequently applied. In this condition, there is invariable hypersensitivity to intradermal injection of purified protein derivative (PPD) at a dilution of 1:10000 and a complete clearing of all skin lesions following treatment with antituberculous chemotherapy.
5) The histologic features combine septal and lobular changes. The presence of vasculitis has traditionally been regarded as a sine qua non for the diagnosis of nodular vasculitis (erythema induratum). Nevertheless, a study analyzing 101 biopsy specimens from 86

patients with clinical features of erythema induratum failed to detect the presence of vasculitis in 9.9% of specimens, even after examination of multiple serial sections.

6) In a biopsy from an established lesion, the septa are widened and chronically inflamed. Acute vasculitis (affecting septal and lobular veins and venules) with a heavy inflammatory cell infiltrate consisting of neutrophils, lymphocytes, and histiocytes is typically present, sometime accompanied by vessel wall necrosis and thrombosis. Occasionally, septal granulomatous inflammation can also be evident. Neutrophils, lymphocytes, and histiocytes with xanthomatized forms are typically seen. Granulomata are often present, and giant cells of both foreign body and Langerhans type are frequently a feature.

REFERENCES:

- McKee's Pathology of the Skin, 4th edition 2012, Elsevier Limited
- Weedon’s Skin Pathology, Fourth edition

CASE 9

Case No: S3736/21

History: 35 years old male presented with right upper back swelling. An ellipse of skin measuring 19x7x9mm. Cut section shows an intradermal nodule with solid tan cut surface. Bisected and submitted entirely in 1 block

TARGET DIAGNOSIS: Spiradenoma with coexistent chondroid syringoma (Synonyms: Spiroma, eccrine spiradenoma, cystic epithelioma of sweat gland)

MINOR DISCORDANT: Cylindroma, Trichoblastoma, Chondroid syringoma

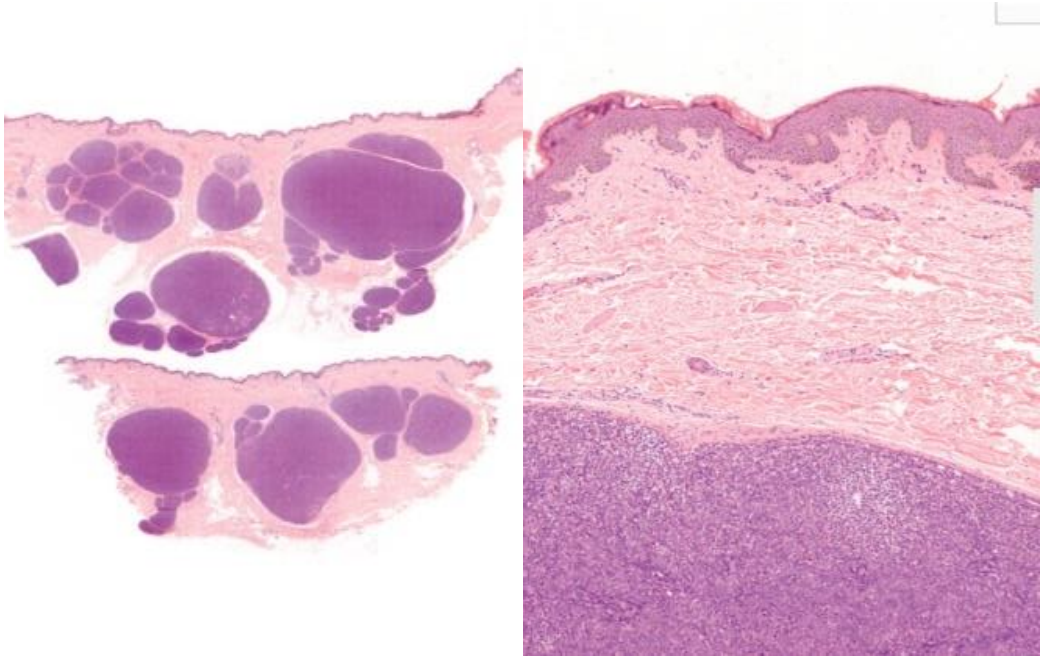
MAJOR DISCORDANT: Myoepithelioma

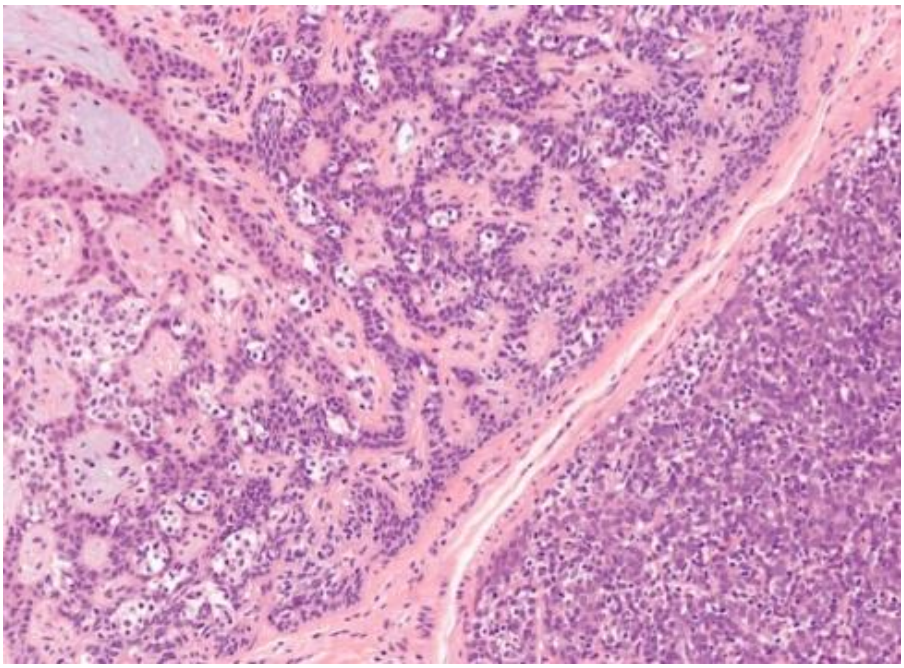
PARTICIPANT RESPONSES:

Submitted Diagnoses by Participating Institutions	**Assessment**
Benign adnexal tumour suggestive of spiradenoma	Minor Discordance
Spiradenoma	Minor Discordance
Eccrine spiradenoma	Minor Discordance
Dermal duct tumor	Minor Discordance
Eccrine Spiradenoma	Minor Discordance
Spiradenoma	Minor Discordance
Spiradenoma	Minor Discordance
Spiradenoma	Minor Discordance
1. Spiradenoma 2. Chondroid syringoma	Concordant

0% Discordant

HISTOLOGICAL IMAGES:





Focus of Chondroid syringoma.

EDUCATIONAL NOTES:

1) Section of the skin shows 2 well-discernible areas in low-power view. The predominant component is a spiradenoma composed of well-circumscribed, multilobular dermal nodule consisting of aggregates of basaloid cells. The basaloid cells are arranged in sheets, islands and in intervening cords of cell nests around ductal lumina. Two types of cells are seen, the larger cells with pale nuclei in the centre and the smaller, dark basaloid cells with hyperchromatic nuclei in the periphery. The tumour is populated by numerous lymphocytes. The smaller foci near the nodule of spiradenoma shows a chondroid syringoma composed of collections of non-branching ducts lined by a single layer of flat epithelial cells from which small, comma-like proliferations are seen to extend into a fibromyxoid stroma. Spiradenoma is a rare benign adnexal tumour usually seen in the head and neck or upper trunk in young adults although congenital case has been described. It is rare in the lower extremities and in the elderly. Most spiradenoma are solitary subcutaneous nodule however multiple lesions can occur
2) Co-existence of spiradenoma with other lesions like cylindroma, trichoepithelioma, and hidradenoma and chondroid syringoma has been documented in literature. Multiple spiradenoma which are inherited in an autosomal dominant pattern are often associated with multiple trichoepithelioma, cylindroma and tumour of the parotid gland an association known as Brooke-Spiegler syndrome
3) Clinical presentation: Papular or nodular, rare giant lesions may achieve a diameter of several centimeter, bluish colouration (sometimes), painful (sometimes), multiple sometimes especially in the context of Brooke-Spiegler syndrome
4) Histopathology:
    - Nodular or multinodular pattern from scanning magnification
    - Large individual nodules often positioned within both dermis and subcutis

- Sharply circumscribed individual nodules
- Spiradenoma is composed of 2 types of cells. Trabecular internal structure with compact (dark) cells bordering trabeculae and cells with ample pale cytoplasm (pale cells) within trabecular centres
- Ductal or apocrine glandular (decapitation) differentiation (sometimes)
- Small lymphocytes scattered throughout trabecular areas (commonly)
- Striking-associated vascular ectasia (sometimes)
- Compact eosinophilic periodic acid-Schiff PAS positive basement membrane material within or bordering the trabeculae (sometimes)

5) Chondroid syringoma is a benign sweat gland neoplasm composed of epithelial, myoepithelial and mesenchymal elements. It is the cutaneous analogue of pleomorphic adenoma. Chondroid syringoma is most common in middle age men. The tumour often involves scalp and face, but can also affect the external ear canal, hand and arms. The trunk and genital region are rarely involved.
6) The tumour is solitary and rarely multiple well-circumscribed nodules. Mixed tumour has two variants, eccrine and apocrine. The apocrine variant has three components consist of epithelial, myoepithelial and mesenchymal (mucinous, chondroid, osseous, adipocytic and fibrotic). The epithelial component is composed of elongated branched tubules and cystic spaces. The epithelial structures are lined by two cell layers, the peripheral layer is composed of cuboidal myoepithelial cells and the inner layer is formed by columnar epithelial cells. The eccrine component of mixed tumour is less common composed of non-branching round ductal element lined by single layer of cuboidal epithelial cells embedded in myxoid or chondromyxoid stroma

REFERENCES:

- Color Atlast of Dermatopathology edited by Jane M. Grant-Kels
- Dermatology: Clinical and Basic Science series/32
- WHO classification of Skin Tumour 4th Edition

CASE 10

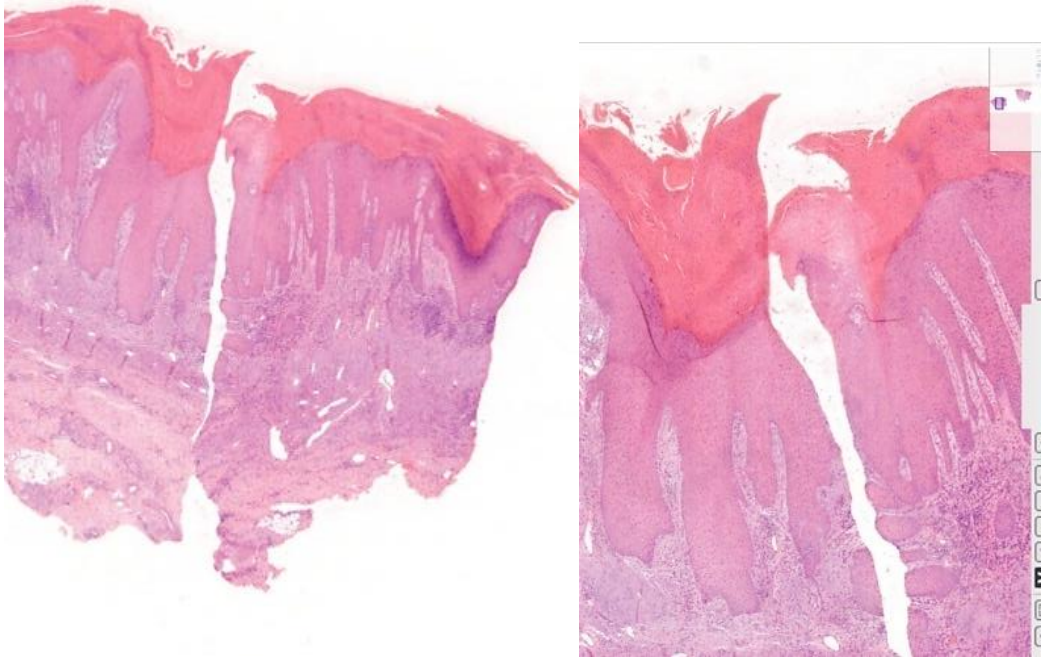
Case No: S4889/21
History: 66 years old male with 2 months history of itchy hyperkeratotic nodule over right hand
TARGET DIAGNOSIS: Nodular Prurigo
MINOR DISCORDANT: Lichen simplex chronicus, Lichen planus
MAJOR DISCORDANT: Psoriasis

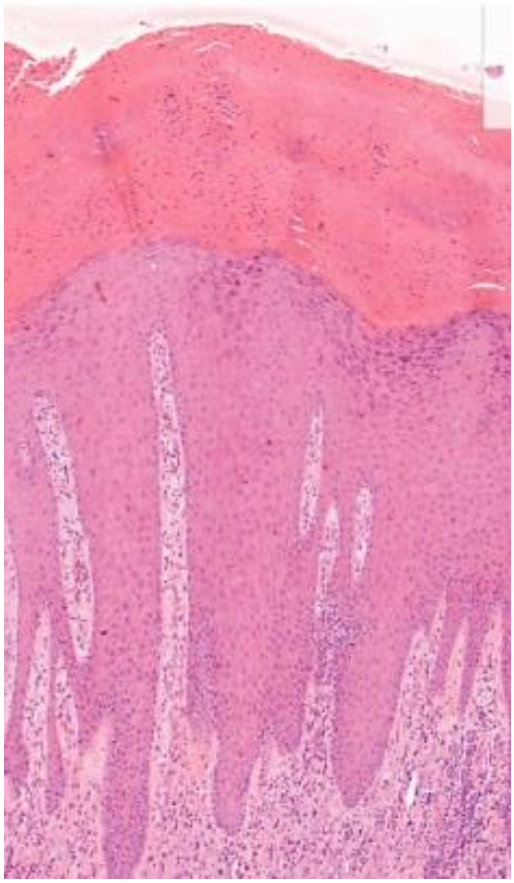
PARTICIPANT RESPONSES:

Submitted Diagnoses by Participating Institutions	**Assessment**
Prurigo nodularis	Concordant
Lichen simplex chronicus	Minor Discordance
Prurigo nodularis (Prurigoform acanthosis)	Concordant
Lichen planus; hypertrophic variant	Minor Discordance
Lichenoid dermatitis	Discordant
Prurigo nodularis	Concordant
Prurigo nodularis	Concordant
Nodular prurigo	Concordant
Prurigo nodularis	Concordant

11% Discordant

HISTOLOGICAL IMAGES:





EDUCATIONAL NOTES:

1) Nodular Prurigo usually presents as multiple, discrete papules or nodules, intensely pruritic (itchy), excoriated nodules erupting on the extensor surfaces of the limbs secondary to itching or rubbing. The cause of nodular prurigo is unknown. Many conditions have been reported to induce nodular prurigo from internal malignancy to renal failure to psychiatric conditions. Nodular prurigo can occur at all ages but mainly in adults aged 20–60 years. Both sexes are equally affected. Up to 80% of patients have a personal or family history of atopic dermatitis, asthma or hay fever (compared to about 25% of the normal population). It has been associated with internal disease including iron deficiency anaemia, chronic renal failure, gluten enteropathy, HIV infection and many other diverse conditions. It is uncertain whether scratching leads to the nodules or if the nodules appear before they are scratched. Nodular prurigo may commence as an insect bite reaction or another form of dermatitis
2) The individual prurigo nodule is a firm lump, 1–3 cm in diameter, often with a raised warty surface. The early lesion may start as a smaller red itchy bump. Crusting and scaling may cover recently scratched lesions. Older lesions may be darker or paler than surrounding skin. The skin in between the nodules is often dry. Nodular prurigo lesions are usually grouped and numerous but may vary in number from 2–200. Nodular prurigo tends to be symmetrically distributed. They usually start on the lower arms and legs and are worse on the outer aspects. The trunk, face and even palms can also be affected. Sometimes the prurigo nodules are most obvious on the cape area (neck, shoulders and upper arms).

3) Histopathology
4) Early lesions may demonstrate spongiosis
5) Evolves to demonstrate
    a. Compact orthokeratosis with focal parakeratosis
    b. Hypergranulosis
    c. The epidermal hyperplasia is generally irregular involving follicular or sweat gland
    d. Occasional pseudoepitheliomatous hyperplasia
    e. Prominent irregular acanthosis with curvilinear, blunt rete ridges
    f. Papillary dermal fibrosis, with vertically oriented collagen bundles
    g. Superficial chronic perivascular inflammatory infiltrate
    h. Rare mast cells and eosinophils

REFERENCES:

- Pearls and pitfalls in Inflammatory Dermatopathology. Asok Biswas
  https://dermnetnz.org/topics/nodular-prurigo
- McKee's Pathology of Skin 4th Edition