

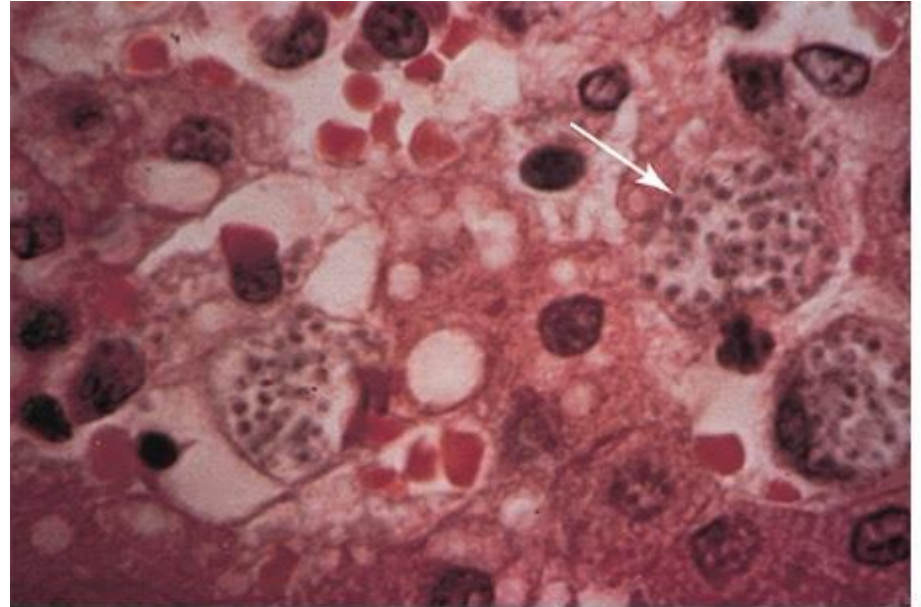
SKIN

GRANULOMATOUS REACTIONS (FOLLICULOPAPULAR ERUPTIONS)

Kenneth Alonso, MD, FACP

Granulomatous tissue reaction

- Red papules and plaques characterize disseminated fungal infection (systemic mycetoma)
 - Immunodeficient.
 - Nodular form results from direct inoculation.
 - Multinuclear epithelial cells with abscesses
- Deep mycoses
Bromoderma

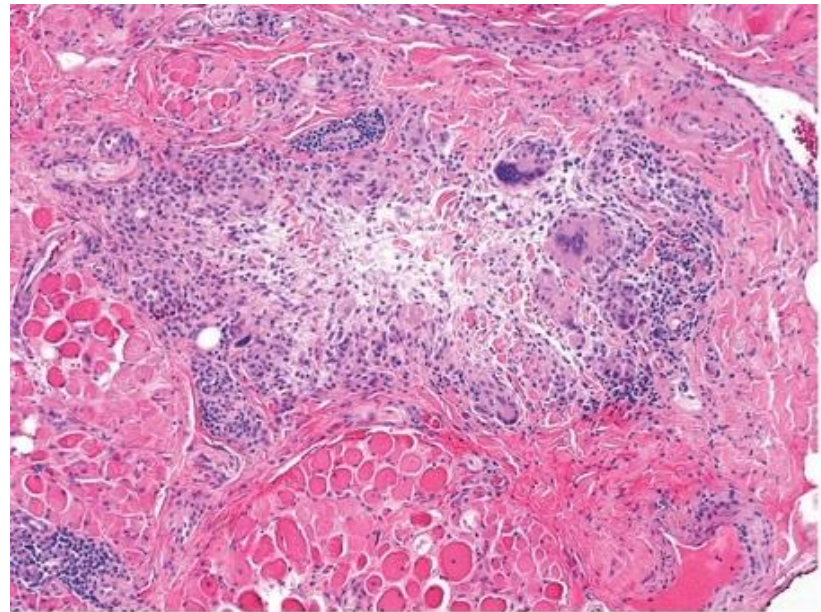


Source: Wolff K, Goldsmith LA, Katz SI, Gilchrest BA, Paller AS, Leffell DJ: *Fitzpatrick's Dermatology in General Medicine*, 7th Edition: <http://www.accessmedicine.com> Copyright © The McGraw-Hill Companies, Inc. All rights reserved.

Disseminated Histoplasmosis. Lesional biopsy specimen shows dermal macrophages packed with dozens of tiny yeast forms of *Histoplasma capsulatum* (arrow). Fig. 190-10 Accessed 07/20/2010

Granulomatous tissue reaction

- Nodular
- Multinuclear epithelial cells with eosinophils
 - Eosinophilic granuloma
 - Hodgkin's Disease
 - Granuloma faciale
 - Granuloma annulare (pictured)



Source: Wolff K, Goldsmith LA, Katz SI, Gilchrest BA, Paller AS, Leffell DJ:
Fitzpatrick's Dermatology in General Medicine, 7th Edition: <http://www.accessmedicine.com>
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Fig. 6-21 Accessed 06/16/2010

A well-circumscribed palisading granuloma is seen in the dermis. Necrobiotic collagen is surrounded by histiocytes, lymphocytes, and a few scattered multinucleated giant cells.

Granulomatous tissue reaction

- Nodular.
- Mononuclear cells and tuberculoid architecture with caseation necrosis

TB (Scrofuloderma)

Leprosy

Disseminated Lupus

Tertiary Syphilis

Beryllium granuloma



Lupus vulgaris (TB)

Fig. 24-66 Accessed 07/16/2010

Source: Wolff K, Johnson RA: *Fitzpatrick's Color Atlas and Synopsis of Clinical Dermatology*, 6th Edition: <http://www.accessmedicine.com>
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Granulomatous tissue reaction

- Nodular
- Mononuclear cells and tuberculoid architecture without caseation
necrosis

Sarcoid (pictured)

Histoplasmosis

Leishmaniasis

Discoid Lupus

- In the dermis, numerous "naked" tubercles consisting of epithelioid cells and scant lymphocytes are seen. The overlying epidermis is atrophic.

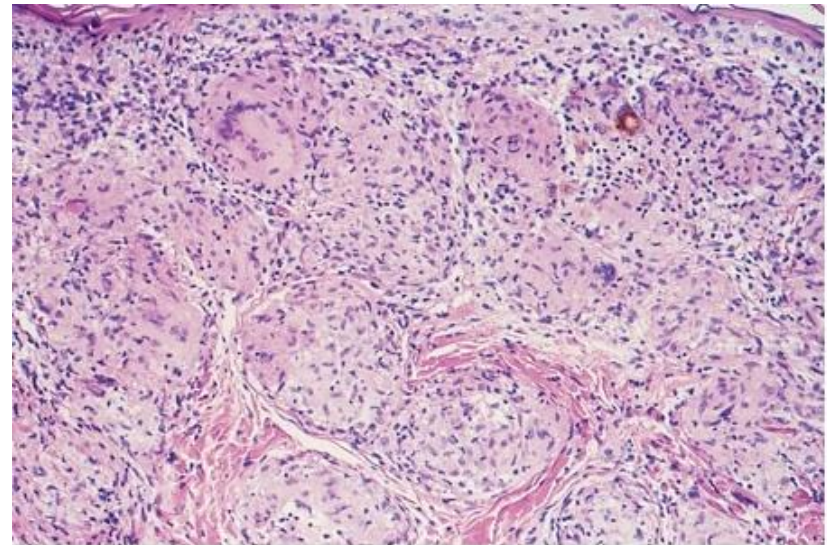


Fig. 6-20 Accessed 07//16/2010

Granulomatous tissue reaction

- Nodular.
- Multinuclear epithelial cells with plasma cells
Secondary Syphilis
Leishmaniasis
Granuloma inguinale
- Nodular
- Macrophages with few or no epithelial cells
Foreign body granuloma
Silicone

Granulomatous tissue reaction

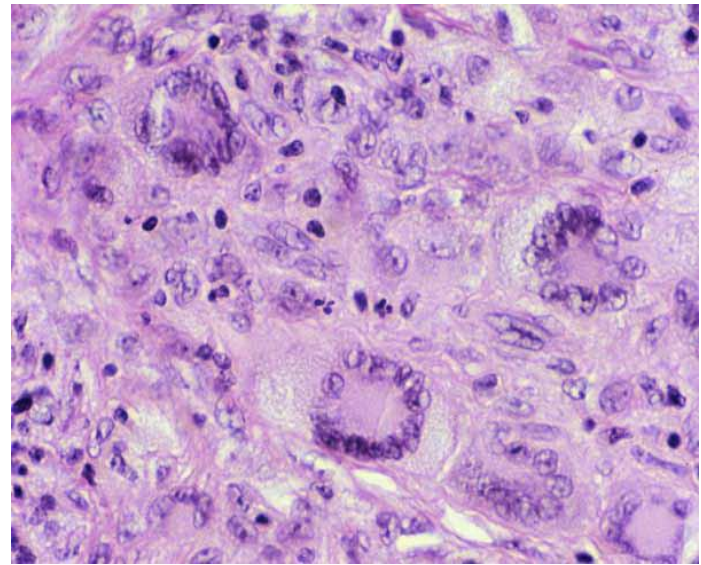
- Mononuclear cells with non-tuberculoïd architecture with foam cells

Xanthoma

Xanthogranuloma

Reticulohistiocytoma

Leprosy



Reticulohistiocytoma

Xanthoma

- Accumulation of fat in macrophages and, rarely, under the skin.
- May see firm red-yellow nodules in area of pressure points or tendons. May be lobulated.
- May erupt in crops; tender, itchy. Resolve spontaneously.
- Indicative of hyperlipidemia If at sites other than lids or occurs in the young.



Source: Wolff K, Johnson RA: *Fitzpatrick's Color Atlas and Synopsis of Clinical Dermatology, 6th Edition*: <http://www.accessmedicine.com>
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Fig. 15-11
Accessed 07/20/2010

Granulomatous tissue reaction

- Nodular.
- Mononuclear cells with non-tuberculoïd architecture with palisading reaction

Necrobiosis lipoidica diabetorum

Rheumatoid granuloma

Granuloma annulare

Localized skin disorder

Young

Females 2:1

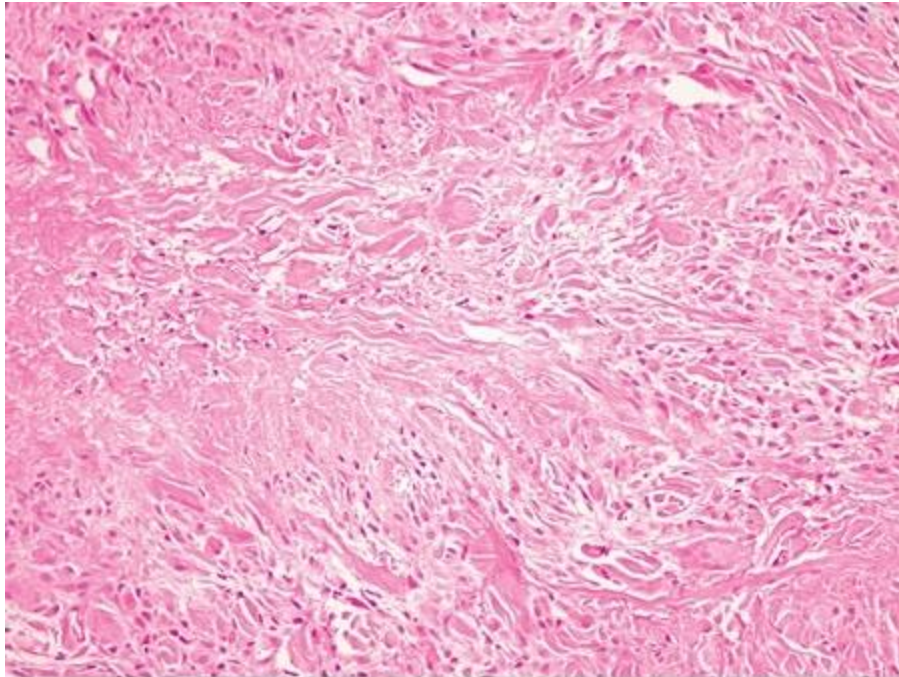
75% regress within 2 years

Recurrences common



Granuloma annulare

Granuloma annulare



Source: Wolff K, Goldsmith LA, Katz SI, Gilchrest BA, Paller AS, Leffell DJ:
Fitzpatrick's Dermatology in General Medicine, 7th Edition: <http://www.accessmedicine.com>
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Palisading
granulomatous
inflammation surrounding
degenerating collagen
within the dermis.
(Hematoxylin and eosin
stain, x200.)

The presence of mucin in
areas of necrobiosis
distinguish this from
rheumatoid nodule.

(Used with permission from Dr. Richard Crawford.)

Fig. 43-4
Accessed 07/20/2010

Rheumatoid (arthritis) nodule

- Firm subcutaneous non-tender nodules found in areas of skin subject to pressure.
- Microscopically there is a central zone of fibrinoid necrosis rimmed by epithelioid histiocytes and lymphocytes (B, CD4 Th1, and CD28-T cells).

• Fig. e10-75 Accessed 07/16/2010



Source: Fauci AS, Kasper DL, Braunwald E, Hauser SL, Longo DL, Jameson JL, Loscalzo J. *Harrison's Principles of Internal Medicine*, 17th Edition: <http://www.accessmedicine.com>
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Necrobiosis lipidoica diabeticorum

- Red-brown shiny plaques that over time atrophy and are yellowed.
- Not painful though may ulcerate.
- Not diagnostic of diabetes mellitus.
- Disorder of collagen degeneration
- Granulomatous response
- Microangiopathy
- Fat deposition.
- May mimic sarcoid.
- May mimic granuloma annulare



Erythema nodosum

- Tender red nodules.
- Presents usually over the shins.
- Much more common in women.
- Age distribution related to underlying disorder.
- Granulomatous panniculitis centered about vessels.
- No vasculitis.
- May have arthralgia (ankles).
- Presumed delayed-type hypersensitivity reaction.
- No known etiology in 50% of cases.
- Sarcoid and sulfonamides as other major causes
- Self-limited course.

Erythema nodosum

- Associated with:
- Drug reactions
 - sulfonamides and sulfonylureas,
- Infection
 - principally streptococcus
- Inflammatory bowel disease,
- Sarcoid.
 - Bilateral hilar adenopathy strongly suggests sarcoid.
- Coccidiomycosis
- Ulcerative colitis

Erythema nodosum

- Presents as poorly defined, exquisitely tender, erythematous plaques and nodules that may be more readily palpated than seen.
- Fever and malaise may occur with initial presentation
- Over the course of weeks, lesions usually flatten and become bruise-like, leaving no residual clinical scars, while new lesions develop.

Erythema nodosum

- In early lesions, the connective tissue septae are widened by edema, fibrin exudation, and neutrophilic infiltration.
- Later, infiltration by lymphocytes, histiocytes, multinucleated giant cells, and occasional eosinophils is associated with septal fibrosis.
- Vasculitis is not present.

Erythema nodosum



Fig. 7-23 Accessed
07/16/2010

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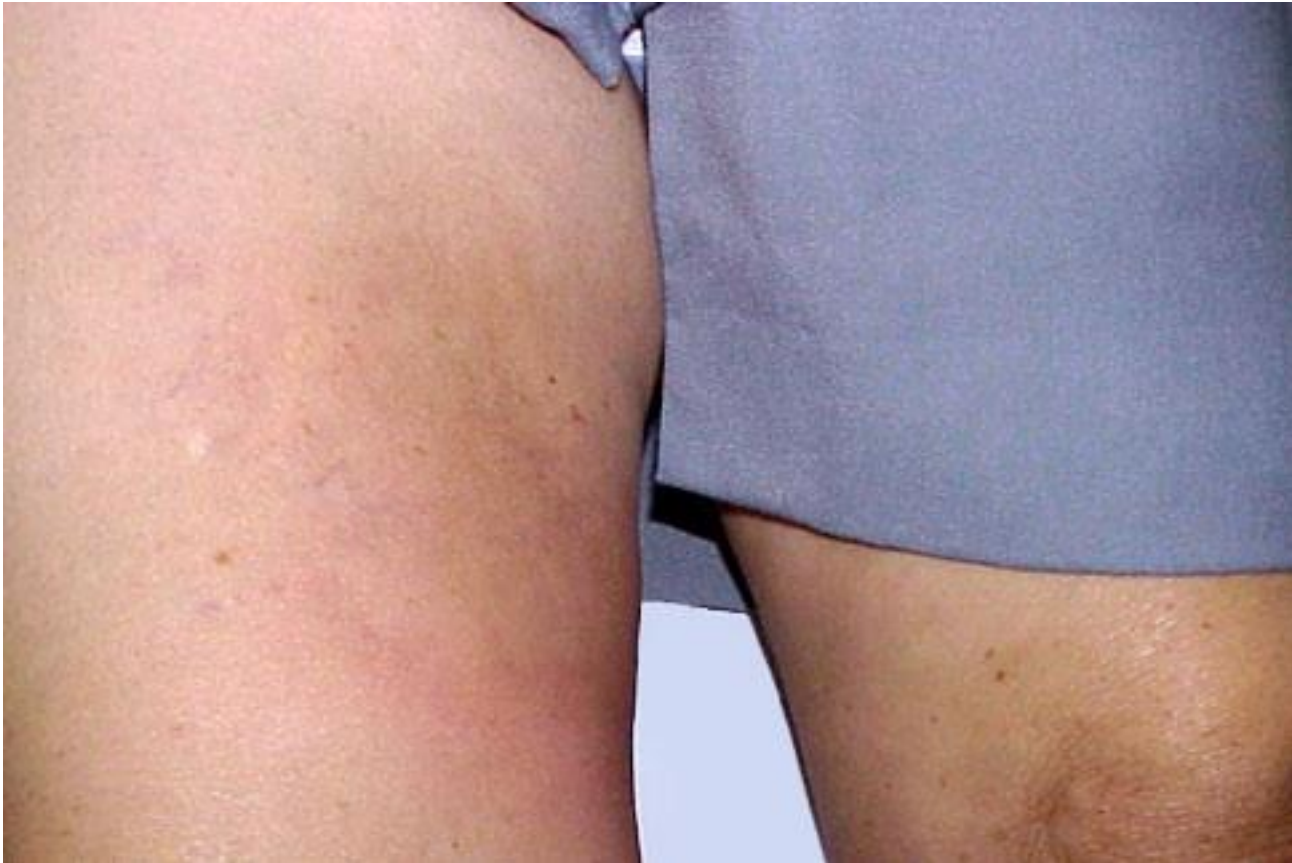
Nodular non-suppurative panniculitis

- Weber-Christian disease
- Lobular, non-vasculitic panniculitis
- Women
- 30-60 years old
- May present with fever, abdominal pain, and arthralgias.
- Relapsing
- No scarring
- Etiology unknown

Nodular non-suppurative panniculitis

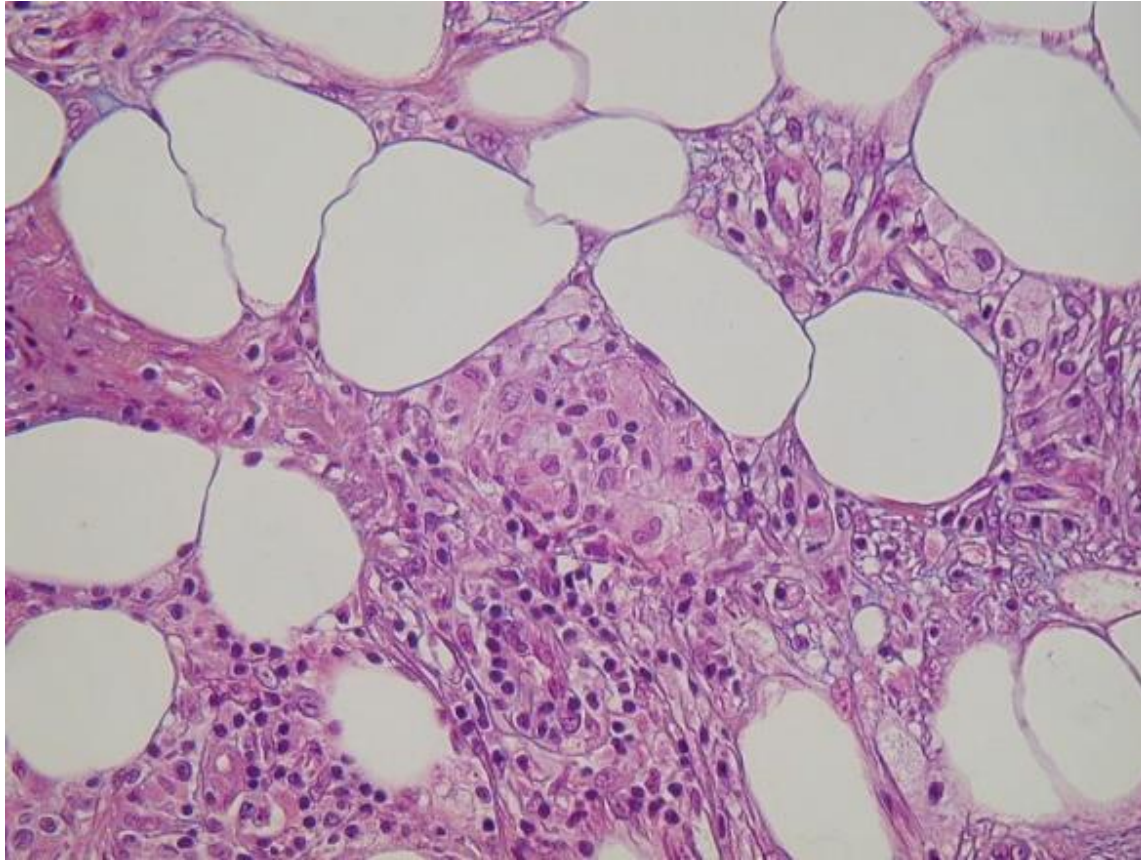
- It is marked by crops of erythematous plaques or nodules, predominantly on the lower extremities.
- Deep-seated foci of inflammation containing aggregates of foamy macrophages admixed with lymphocytes, neutrophils, and giant cells.
- No vasculitis

Nodular non-suppurative panniculitis



https://www.dermaamin.com/site/images/clinical-pic/W/weber_christian_disease/weber_christian_disease1.jpg

Nodular non-suppurative panniculitis



<http://www.eopathologies.com/sem/derm06/dphd/hd07i008.jpg>

Erythema induratum

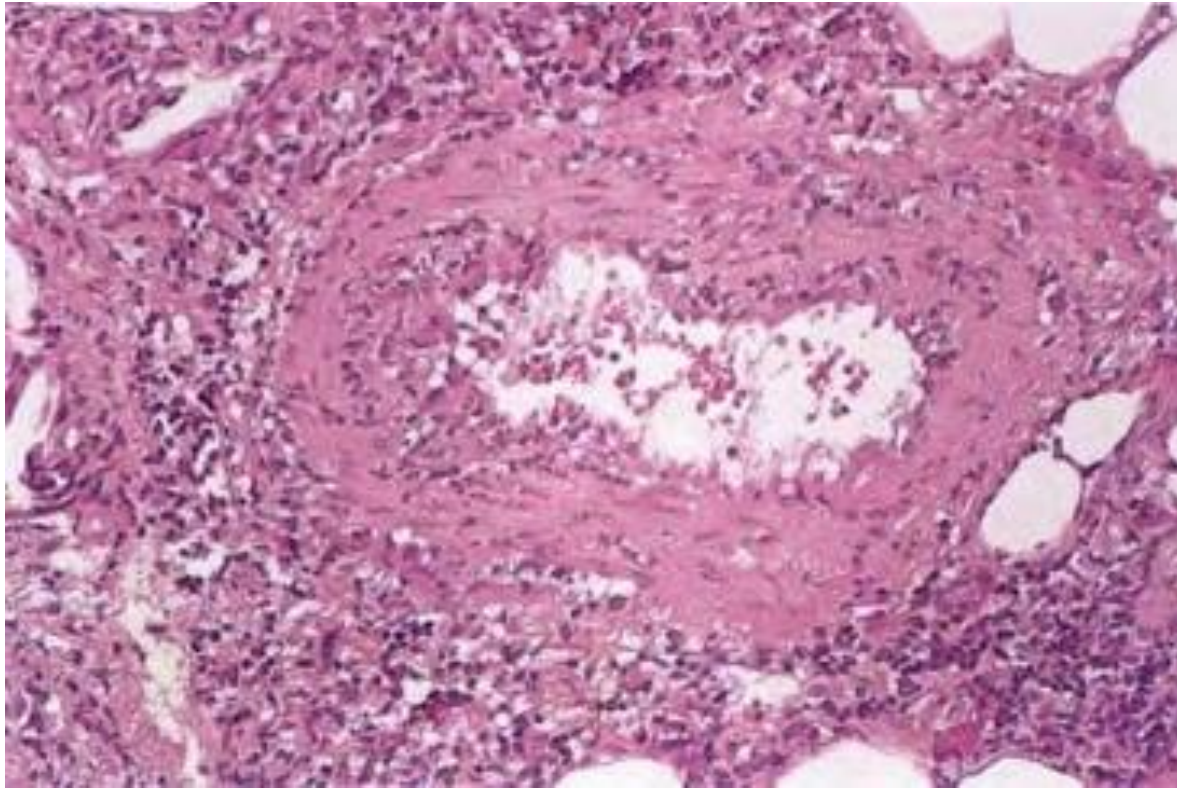
- Presents as an erythematous, slightly tender nodule that usually goes on to ulcerate.
- Primary vasculitis of deep vessels supplying the fat lobules of the subcutis
- Early lesions show necrotizing vasculitis affecting small- to medium-sized arteries and veins in the deep dermis and subcutis.
- Granulomatous inflammation and zones of caseous necrosis involve the fat lobule

Erythema induratum



http://dermaamin.com/site/images/clinical-pic/e/erythema_induratum/erythema_induratum11.jpg

Erythema induratum



<http://dermaamin.com/site/images/histo-pic/e/erythema-induratum-bazin/erythema-induratum-bazin3.jpg>

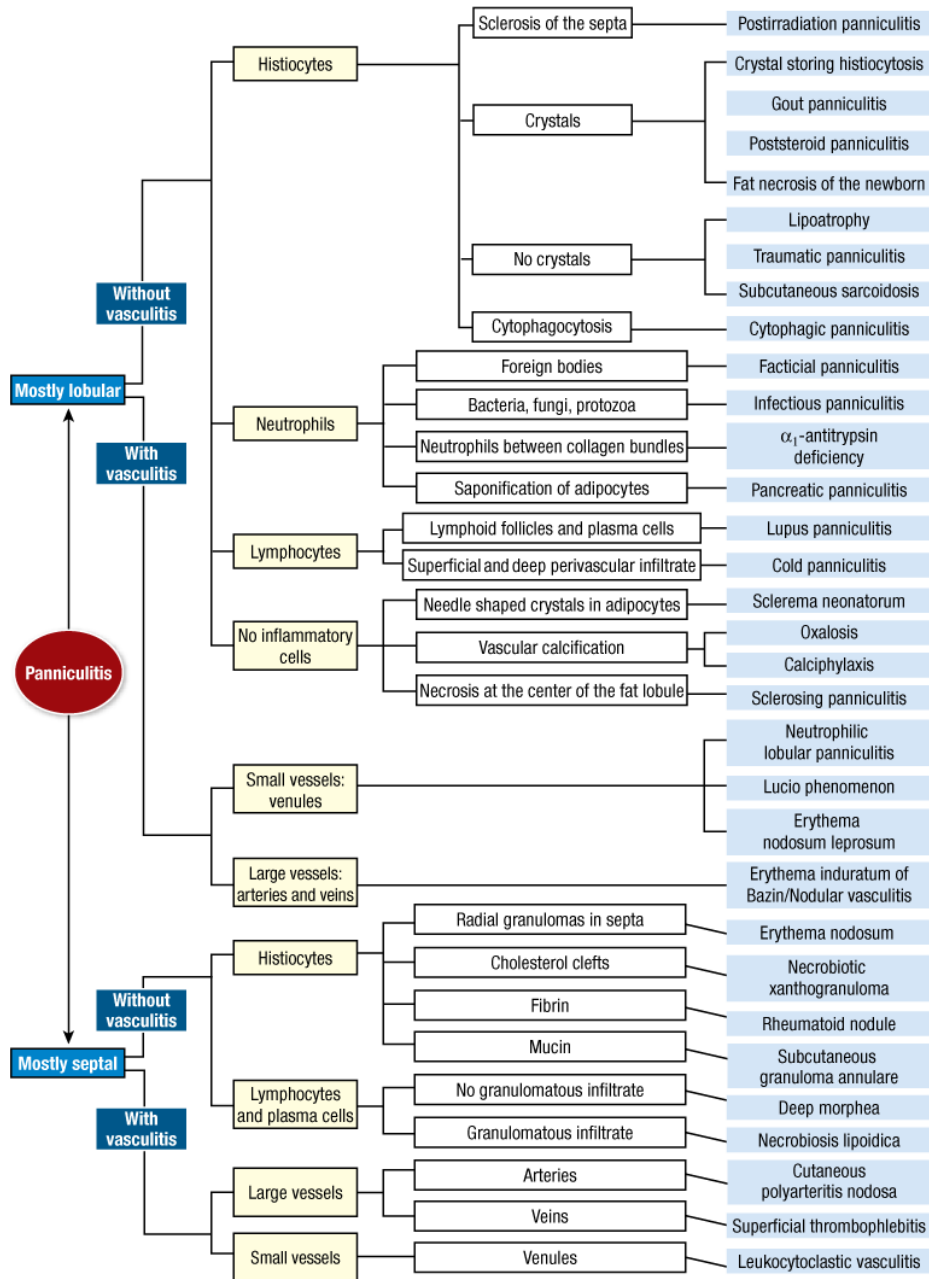


Fig. 68-1 Accessed 06/16/2010