There are four forms of calcinosis cutis: metastatic calcinosis cutis, dystrophic calcinosis cutis, idiopathic calcinosis cutis, and subepidermal calcified nodule.
Metastatic Calciosis Cutis

Metastatic calcification develops as the result of hypercalcemia or hyperphosphatemia. Hypercalcemia may result from (a) metastatic carcinoma of the bones or from primary hyperparathyroidism, (b) chronic renal disease, or (c) ingestion of vitamin D. High Blood Levels of vitamin D stimulate parathyroid secretion, leading to secondary hyperparathyroidism and increased resorption of calcium.
and phosphorus from bone. The demineralization of bone causes both osteodystrophy and metastatic calcification.
Metastatic calcification most commonly affects the media of the arteries and the kidneys. In addition, other visceral organs, such as the myocardium, the stomach, and the lungs, may be involved.

Metastatic calcification in the subcutaneous tissue is occasionally observed in association with renal hyperparathyroidism, in uremia, in hyperparathyroidism, and as the result of excessive intake of milk and alkali but rarely in primary hyperparathyroidism. Palpable, hard nodules, occasionally of considerable size, are located mainly in the vicinity of the large joints. With an increase in size, the nodules may become fluctuant.
Calciphylaxis is a life-threatening condition in which there is progressive calcification of small- and medium-sized vessels of the skin. This condition affects patients with chronic kidney disease, diabetes, and hyperparathyroidism. The disease is characterized by the formation of calcium deposits in the walls of blood vessels, leading to ischemia and tissue necrosis. Clinically, the lesions present as a panniculitis or vasculitis. Bullae, ulcerations, or a livedo reticularis-like appearance can also be observed. The progression of the disease can lead to severe pain, gangrene, sepsis, pancreatitis, and multisystem organ failure, contributing to an overall mortality rate of more than 60%.
Instances of cutaneous metastatic calcinosis. Most reports have concerned patients with renal hyperparathyroidism and osteodystrophy. The cutaneous lesions usually present as plaques, nodules, or papules; or as firm, white, raised nodules that are sometimes painful. A clear correlation has been found between the degree of hyperparathyroidism and the severity and frequency of the skin lesions.

Mural calcification of arteries and arterioles in the deep dermis or subcutaneous tissue occurs rarely in primary hyperparathyroidism but somewhat more frequently in secondary hyperparathyroidism subsequent to renal disease.
Histopathology

Calcium deposits are recognized easily in histologic sections, because they stain deep blue with H&E. They stain black when examined with a polarizing microscope. This is because calcium deposits evoke a foreign body reaction; thus, giant cells, an inflammatory infiltrate, and fibrosis may be present around them.
In areas of infarctive necrosis, as a result of calcification of dermal or subcutaneous arteries or arterioles, the lumina of the affected vessels may be narrowed or occluded. Mural calcification often is most pronounced in the internal elastic membranes of arteries or arterioles.

The histologic changes in calciphylaxis include calcium deposits in the subcutis, chiefly within the walls of small and medium-sized vessels. These deposits may lead to thrombosis and subsequent tissue necrosis. In addition, areas of necrosis may be accompanied by neutrophils, indicating an inflammatory response to the ischemic injury.
It is particularly important that these findings be recognized in order that appropriate therapy, which often includes parathyroidectomy, might be instituted immediately.
**Dystrophic Calcinosis Cutis**

In dystrophic calcinosis cutis, the calcium is deposited in previously damaged tissue. The values for serum...
**Calcinosis Cutis = اﻠﺠﻠدﻲ اﻠﻜﻠاﺲ**

*Calcinosis universalis* occurs as a rule in patients with dermatomyositis, but exceptionally it has also been observed in patients with systemic lupus erythematosus, rheumatoid arthritis, and scleroderma. In dermatomyositis, if the patient survives, the nodules of dystrophic calcinosis gradually resolve.

*Calcinosis circumscripta*
Calciosis Cutis = اﻠﺠﻠدﻲ اﻠﻜﻠاﺲ

... occurs as a rule in patients with systemic scleroderma; rarely, however, it may be

... often referred to as the Thibierge-Weissenbach syndrome or the CREST syndrome, because...
Lupus erythematosus is only rarely associated with dystrophic calcinosis cutis. In addition to occurring in subcutaneous fat necrosis of the newborn and, rarely, in the subcutaneous nodules occurring in Ehlers-Danlos disease.

*Histopathology.*

As in metastatic calcinosis cutis, the calcium in dystrophic calcinosis cutis usually...
Idiopathic Calcinosis Cutis

Even though the underlying connective tissue disease in some instances of dystrophic calcinosis cutis may...
Histopathology

Tumoral calcinosis shows in the subcutaneous tissue large masses of calcium stones.
Pathogenesis

Two authors have studied lesions of idiopathic calcinosis cutis by electron microscopy (160, 161). They agree that the crystals lie within collagen fibrils and subsequently extend into the ground substance as the apatite crystals grow (161).
Idiopathic Calcinosis of the Scrotum

Idiopathic calcinosis of the scrotum consists of multiple asymptomatic nodules of the scrotal skin. The nodules begin to form in childhood or in early adult life, increase in size and number, and sometimes break down to discharge their chalky contents.
Calcinosis Cutis = اﻠﺠﻠدﻲ اﻠﻜﻠاﺲ
Histopathology
At one time, the accepted view was that some of the calcific masses in calcinosis cutis were surrounded by a connective tissue capsule. The calcific masses then became surrounded by fibrous connective tissue, the epithelial lining eventually disintegrated, and the calcific masses became cystic. The cyst wall was eventually destroyed, leaving only dermal collections of calcium. Thus, the cysts were formed by calcific masses that became surrounded by fibrous connective tissue. The cysts were then formed by calcific masses that were embedded in fibrous connective tissue.
according to this view, calcinosis of the scrotum represents the end stage of dystrophic calcification of scrotal cysts. After the cysts undergo fibrosis and calcify, lose their cyst walls. It is likely that authors who found no cyst walls were examining old lesions.
Calcinosis Cutis = اﻠﺠﻠدﻲ اﻠﻜﻠاﺲ
Subepidermal Calcified Nodule

In subepidermal calcified nodule, also referred to as cutaneous calculi, usually a single small, raised, hard nodule is present. Occasionally, there are two or three nodules, and in rare cases, there can be even innumerable nodules. Most patients are children; however, in some patients, a nodule is present at birth or even innumerable nodules.
does not appear until adulthood. In most instances, the surface of the nodule is verrucous, but it may be smooth. The most common location of the nodule is the face.

Pathogenesis. The primary event seems to be the formation of large, homogeneous masses that undergo calcification and break up into numerous calcified globules. The origin of the homogeneous masses is obscure. It is not likely that they originate from a specific preexisting structure, such as sweat ducts or nevus cells as has been assumed.