Graft versus Host Disease
GVHD occurs in situations in which donor immunocompetent T cells transferred into allogenic hosts are incapable of rejecting them. The sources of the T cells include primarily peripheral blood stem cell and bone marrow transplants, and infrequently, unirradiated blood products, solid organ transplants, and maternal-fetallymphocyte engraftment. Graft-versus-host-like reaction has been reported in patients with a thymoma or lymphoma.

The disease can be divided into an acute and a chronic phase. Acute GVHD typically occurs between 7 and 21 days after transplantation and is related to the degree of histocompatibility mismatch. Chronic GVHD is characterized by a more indolent course, with symptoms appearing weeks to months after transplantation. The risk of chronic GVHD is 11 times greater if the patients had prior acute GVHD.
In the acute phase, the classic triad includes skin lesions, hepatic dysfunction, and diarrhea. The clinical severity is judged on the extent and severity of these symptoms, with a higher score indicating more severe disease. Patients with progressive and fatal disease may require aggressive management and intervention.
In the chronic phase, an early lichenoid stage and a late sclerodermoid stage can be distinguished. Each stage can occur without the other. This is associated with a variety of clinical manifestations, including the erythematous lichenoid lesion, which in some cases may progress to chronic atrophic dermatitis. Other clinical manifestations include cicatricial alopecia, chronic ulcerations, pyogenic granuloma, and angiomatous lesions.
histopathology

the early changes in the acute phase consist of focal basal vacuolation and sparse superficial perivascular lymphocytic infiltrate with exocytosis of individual cells into the epidermis and follicular epithelium. The acute phase has been divided into four histopathologic grades. In grade 1 disease, there is focal or diffuse vacuolization of the keratinocytes, with some accompanied by two or more epidermal lymphocytes, a phenomenon known as satellite cell necrosis. The necrotic keratinocytes contain a pyknotic nucleus and eosinophilic cytoplasm. Grade 3 lesions are characterized by significant epidermal spongiosis, lymphocytic infiltration, and dyskeratosis at all levels of the epidermis. In rare cases, basal vacuolization and dyskeratosis of the follicular epithelium may be the only changes.
In the *chronic phase*, the early lichenoid stage may still show evidence of satellite cell necrosis within the epidermis. The overall pathologic picture is represented by epidermal necrosis, characterized by small foci of total epidermal necrosis accompanied by a lichenoid tissue reaction.
In the late sclerodermoid phase, the epidermis is atrophic, with the keratinocytes being small, flattened, and arranged in a palisade pattern. The dermis shows a fibrotic, hyalinized appearance, with decreased vascular density and obliteration of the papillary dermis. Subepidermal bullae are a rare finding in this phase.

**IF Testing.** Epithelial basement membrane zone granular IgM and complement deposition is present in 39% of patients with the acute form and in 86% of patients with the chronic form of GVHD. In addition, IgM and C3 have been found in the walls of dermal vessels.

**Pathogenesis.**
Acute and chronic forms of the disease have a different pathogenesis. In acute GVHD, it is believed that preparative conditions of the host antigen by donor T cells and activation and proliferation of them is crucial in the initial phase.

The greater the disparity between donor and recipient MHC, the greater the T-cell response. In identical pairs, the donor T cells represent a minority of infiltrates. B cells are not found.
The inflammatory cytokines (ILs, GM-CSF, TNF-a IFN-y) produced by activated T cells and by tissue damage during the... young rete ridge keratinocytes, follicular stem cells, and Langerhans cells are preferred targets. However, the exact mechanisms by which the skin, liver, and gastrointestinal tract are targeted are not clear.

Less is understood about the pathophysiology of chronic GVHD. The role of donor T cells against the recipient's...
Ultrastructural Study.

The necrotic keratinocytic cytoplasm is filled with numerous aggregated tonofilaments.
Graft versus Host Disease = داء رفض السطوع
Differential Diagnosis.
The acute phase of GVHD is similar to EM, with scattered necrotic keratinocytes and the formation of subepidermal clefts.
The eruption of lymphocyte recovery occurs predominantly in patients after receiving cytoreductive therapy (without bone marrow transplant) for acute Graft versus Host Disease."
Distinguishing between the lichenoid lesions of GVHD and lichen planus is often impossible.

However, late sclerotic lesions can be differentiated from scleroderma by the marked atrophy of
the epidermis. Active synthesis of collagen takes place largely in the upper third of the dermis;

in scleroderma, collagen is synthesized mainly in the lower dermis and in the subcutaneous tissu