Incontinentia Pigmenti
Incontinentia pigmenti (IP) is an X-linked dominantly inherited disorder. Females with the abnormal gene on only one of their two X chromosomes are heterozygous for this condition and hence are so severely affected that they typically die in utero. This explains the predominance of female patients with this disorder. To date, over 40 male patients with IP have been reported. The majority of these patients have not been related, and their mothers were not affected, thereby excluding a maternal genetic origin. Both X chromosomes of these male patients were expected to carry the gene for IP. However, in a few cases, the affected males had a second X chromosome containing a partial Y chromosome as in cases of 47,XXY or Klinefelter syndrome. The familial form of this disorder, IP2 (or 3/11 syndrome) is inherited in an autosomal dominant manner and is characterized by more mild clinical manifestations than the sporadic form.
The alterations in the second stage consist of acanthosis, irregular papillomatosis, and hyperkeratosis. In addition, the epidermis is replaced by a dense, urticating, inflammatory infiltrate intermingled with melano-phages. This infiltrate extends into the epidermis in many places.

classical incontinentia pigmentosa), is localized to the Xq28 region. It is due to a mutation in the IKK-gamma gene as part of the NEMO complex.
The disorder has four stages. The first stage, consisting of erythema and bullae arranged in lines, either
In about 80% of the cases, IP is associated with various congenital abnormalities, particularly of the central nervous system, eyes, and teeth. Partial alopecia at the vertex is also often seen.

**Histopathology**

The vesicles seen during the first stage arise within the epidermis and are associated with spongiosis. They are of the type known as oral vesicles.
The areas of pigmentation seen in the third stage show extensive deposits of melanin within melanophages.
A different pattern has recently been described on the skin of the legs of an infant in whom the vesiculation...
Pathogenesis

The fact that the first two stages of IP are seen predominantly on the extremities and the third stage mainly on the trunk has led to the assumption by some authors that the pigmentary changes of the third stage occur independently of the bullous and verrucous lesions of the first two stages. However, the pigmentary changes of the third stage occur independently of the bullous and verrucous lesions of the first two stages. Even in the first stage, many keratinocytes and melanocytes show degenerative changes resulting in the presence of dyskeratotic keratinocytes in the epidermis during all three stages of the disease.
The presence of eosinophils in epidermal and dermal infiltrates can be explained by the presence in the early vesicular stage of basophils, which release eosinophil chemotactic factor.
of anaphylaxis. Eosinophil chemotactic activity has been demonstrated in patients with IP in the blister fluid and in eluates of crusted scales overlying the lesions.