Epithelial Conjunctival Tumors

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Thibaud Garcin, Mathilde Kaspi, Cyril Habougit, Damien Grivet, Jean-Luc Perrot, and Elisa Cinotti

Contents

Abbreviations

Ab	Antibodies
HES	Hematoxylin-eosin-saffron stain
IVCM	In vivo reflectance confocal microscopy

T. Garcin (✉) · M. Kaspi · D. Grivet
Department of Ophthalmology, University Hospital of Saint-Etienne, Saint-Etienne, France
e-mail: garcinthibaud@gmail.com; mathilde.kaspi@gmail.com; damien.grivet@chu-st-etienne.fr

C. Habougit
Department of Pathology, University Hospital of Saint-Etienne, Saint-Etienne, France
e-mail: cyril.habougit@chu-st-etienne.fr

J.-L. Perrot
Department of Dermatology, University Hospital of Saint-Etienne, Saint-Etienne, France
e-mail: j.luc.perrot@chu-st-etienne.fr

E. Cinotti
Department of Dermatology, University of Siena, S. Maria alle Scotte Hospital, Siena, Italy
e-mail: elisa.cinotti@unisi.it

13.1 Epithelial Dysplasia

Epithelial dysplasia can be flat or raised. Here (Fig. 13.1) the patient presents a white, budding raised lesion with a feeder vessel (*black arrow*).

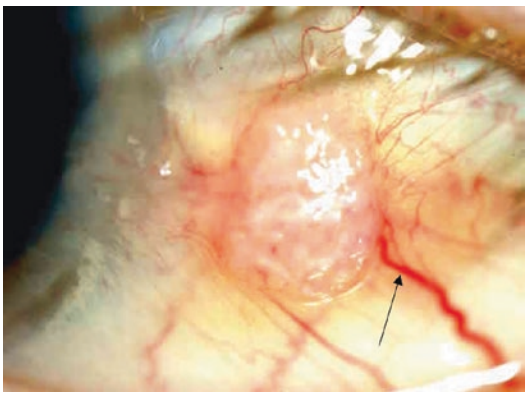

Fig. 13.1 Clinical aspect of epithelial dysplasia: slit-lamp photography

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The IVCM features are as follows (Fig. 13.2a–d):

- Disorganization of the conjunctival epithelium with cells of variable size and reflectance (*blue stars*) can be seen.
- Cell roll (*red dotted line*) and images of pseudo-epithelial cavities are visible (*yellow arrows*).
- The lower and median layers of the epithelium show cytological atypia; the superficial layers keep maturation without dyskeratosis.

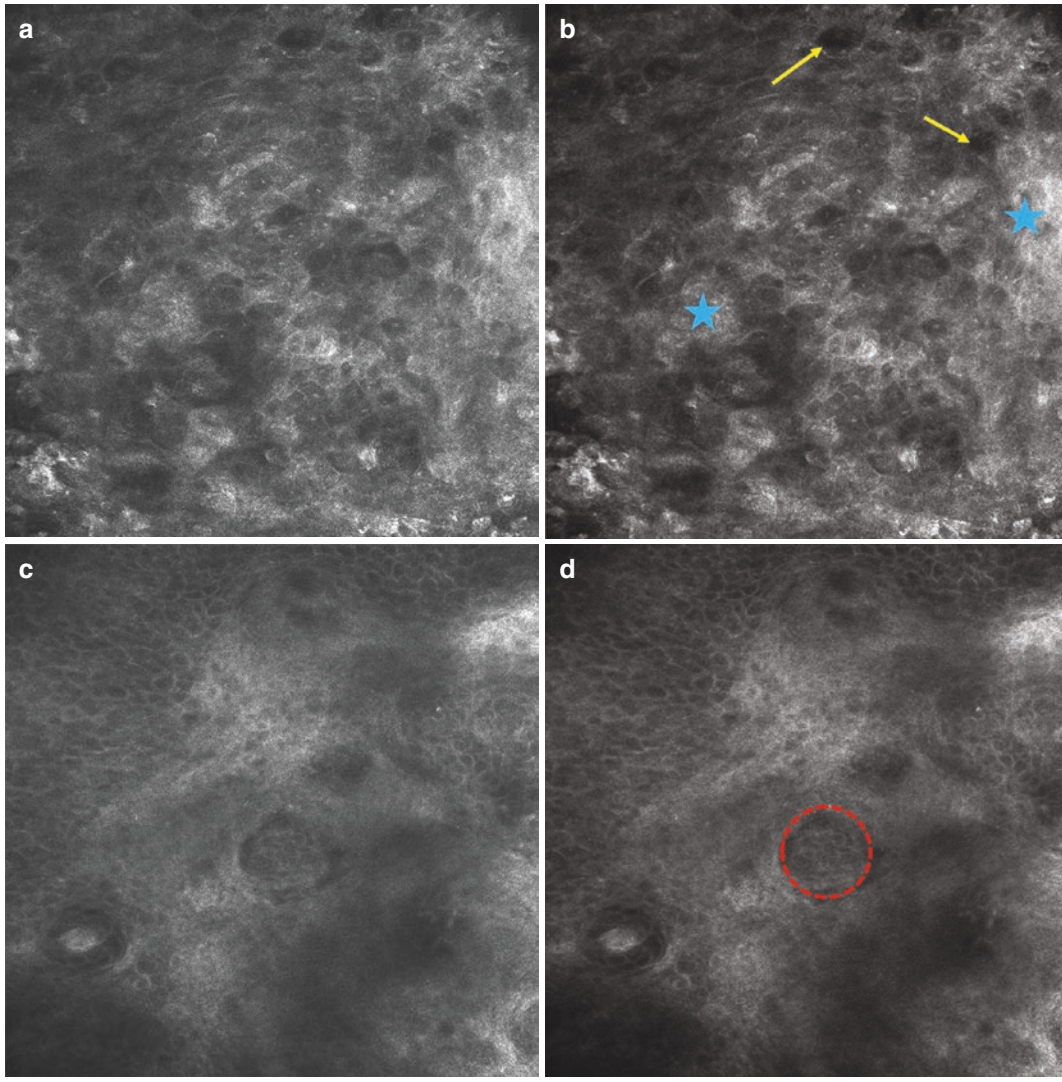

Fig. 13.2 IVCM features of epithelial dysplasia (**a**–**d**)

On optical microscopy the histologic features are as follows (Fig. 13.3e–h):

– At low magnification (e–f), in this case the proliferation of the squamous epithelium is exophytic. Epithelial hyperplasia is arranged in anastomotic cords containing islands of connective tissue (*black stars*) and keratin pearl pseudocysts (*blue arrows*).
– At high magnification (g–h), the basement membrane does not show any alteration. The lower and median layers of the epithelium include cytonuclear atypia (*yellow circle*). The superficial layers keep maturation without dyskeratosis.

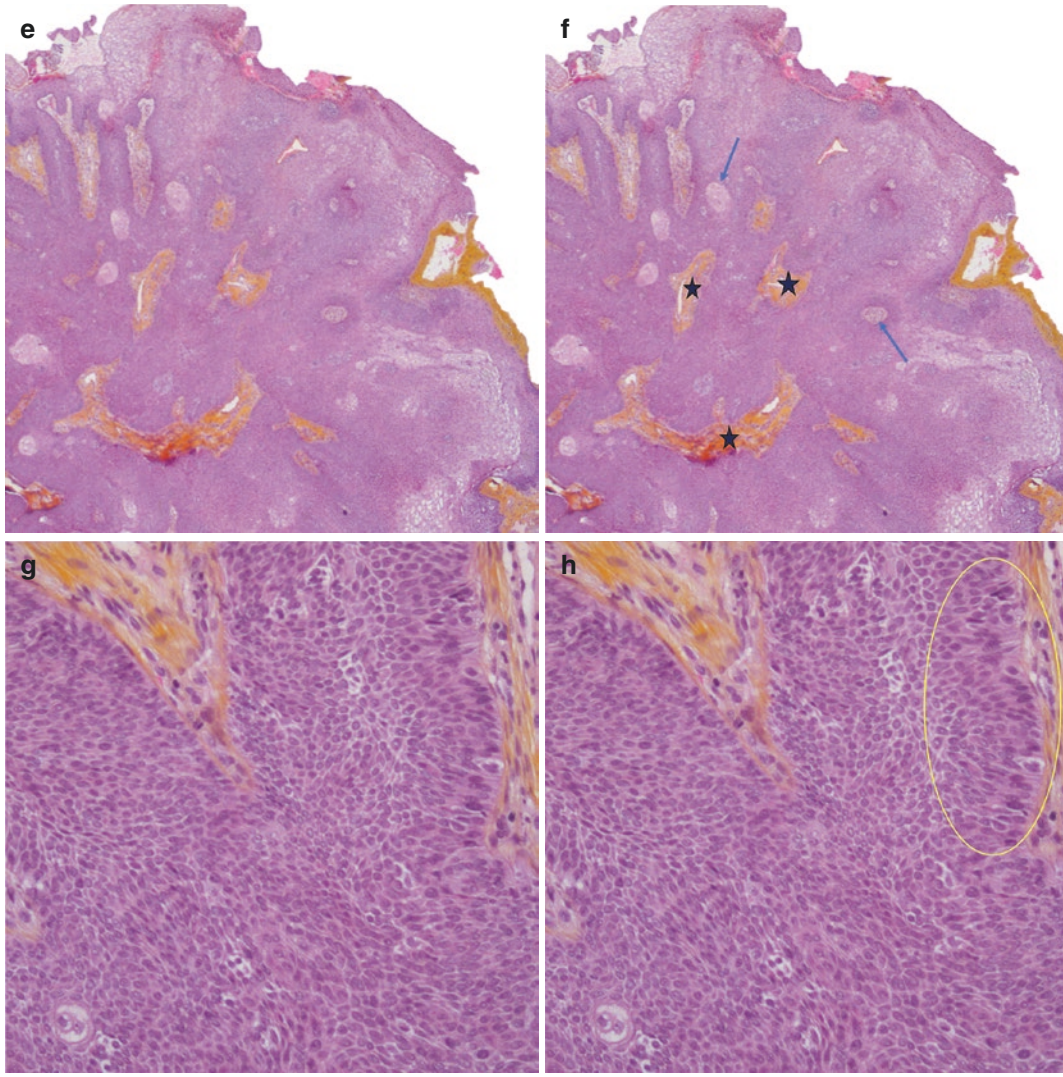

Fig. 13.3 Histological features of epithelial dysplasia (**e–h**). (**e, f**) ×25HES. (**g**, **h**) ×200 HES

13.2 Squamous Cell Carcinoma

Ultraviolet exposure is a major risk factor for squamous cell carcinoma.

Squamous cell carcinoma can occur in different clinical forms: leukoplakia, gelatinous, papillomatous, pedunculated, nodular, and diffuse. The diffuse form very often mimics a chronic conjunctivitis. Limbal involvement and orbital invasion are possible. Squamous cell carcinoma in situ is limited to the entire epithelium, whereas invasive squamous cell carcinoma crosses the basal membrane of the epithelium and invades the chorion.

13.2.1 In Situ Squamous Cell Carcinoma: Gelatinous Form

The clinical aspect (Fig. 13.4a–b) of a gelatinous squamous cell carcinoma is that of a whitish lesion with a wet sugar appearance. Here the lesion is surrounded by dilated superficial feeder vessels (*yellow circle*) and the limbus is invaded.

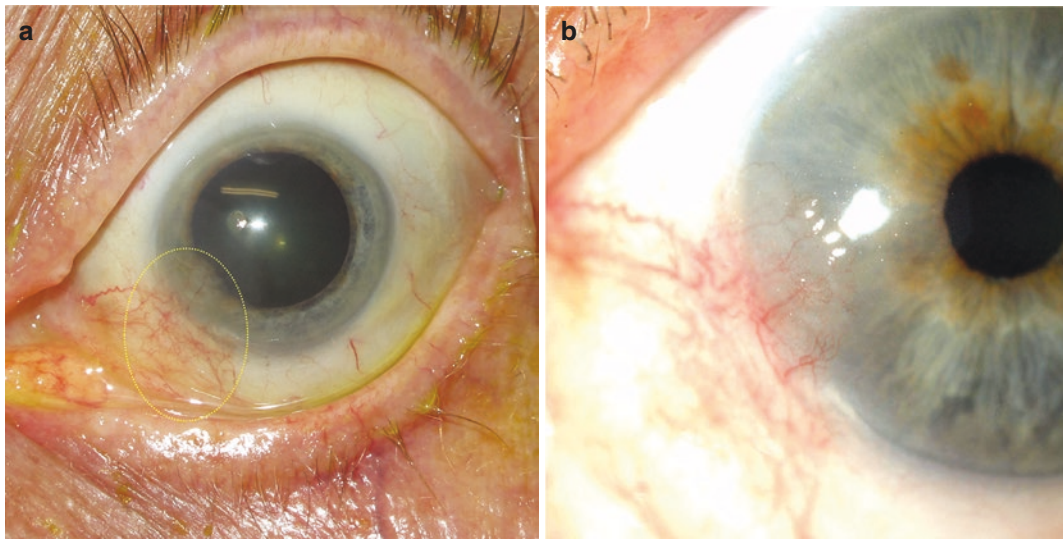

Fig. 13.4 Clinical aspect of in situ gelatinous form of squamous cell carcinoma: macroscopic photography (**a**) and slit-lamp photography (**b**)

The IVCM features are as follows (Fig. 13.5c–f):

- Corneal epithelium at the level of the limbus is disorganized (*yellow diamond*), instead of having the regular honeycomb pattern (*green diamond*) of the normal cornea.
- Conjunctival epithelium is thickened and disorganized (*blue stars*).
- Tumor lobules show roll-up pattern (*red dotted line*).

On optical microscopy the histologic features are as follows (Fig. 13.6g–l):

- At low magnification (g–k) the squamous proliferation (*black stars*) is intraepithelial.
- The tumor disorganizes the entire thickness of the epithelium, without crossing the basement epithelial membrane (*black line*). In immunohistochemistry, this proliferation is marked (in brown) by the anti-p53 antibody.
- At high magnification (k–l) atypical squamous cells have a large eosinophilic cytoplasm with some mitoses (*black arrows*). Abnormal drafts of squamous maturation are observed (*blue circles*). Parakeratosis is present on the surface (*green dotted lines*).

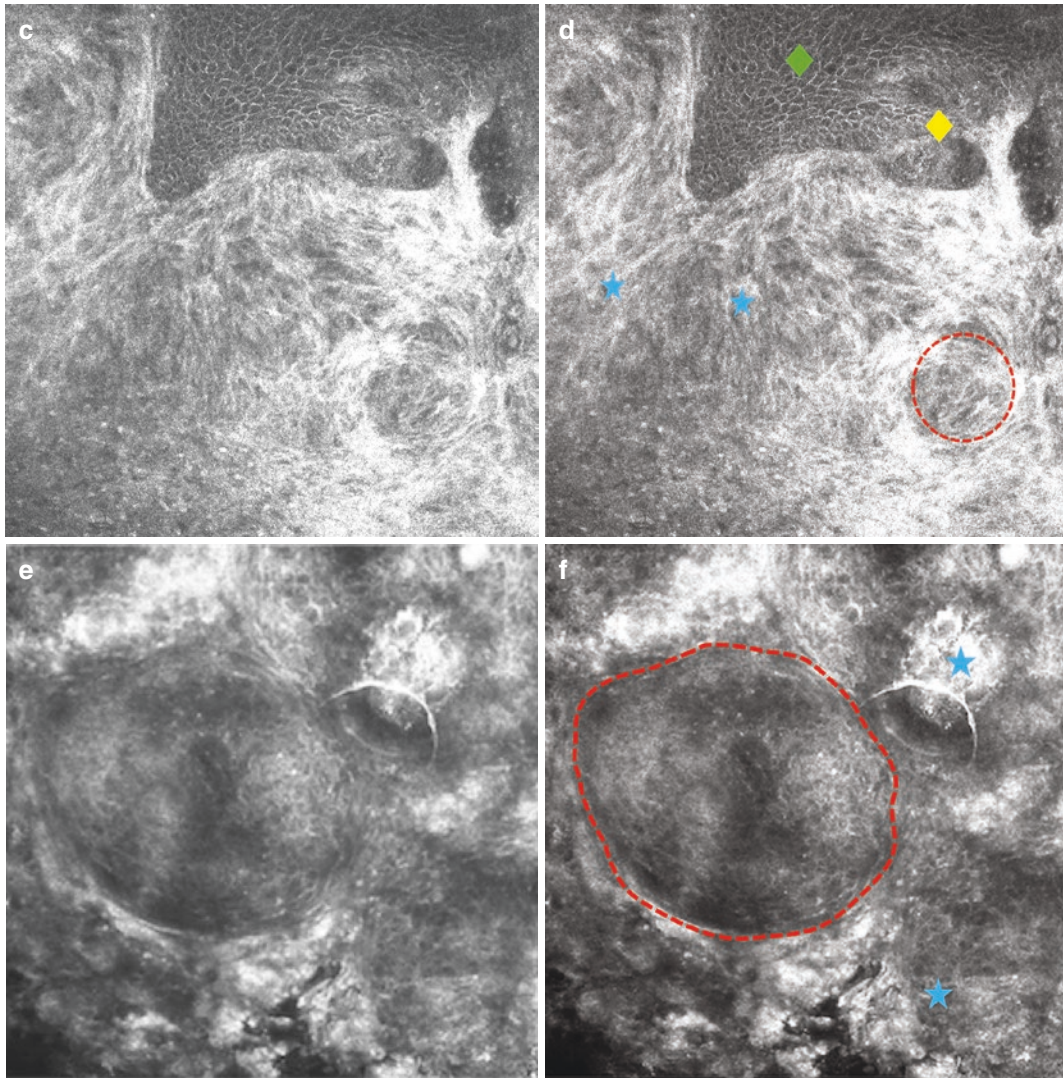

Fig. 13.5 IVCM features of in situ gelatinous form of squamous cell carcinoma (**c–f**)

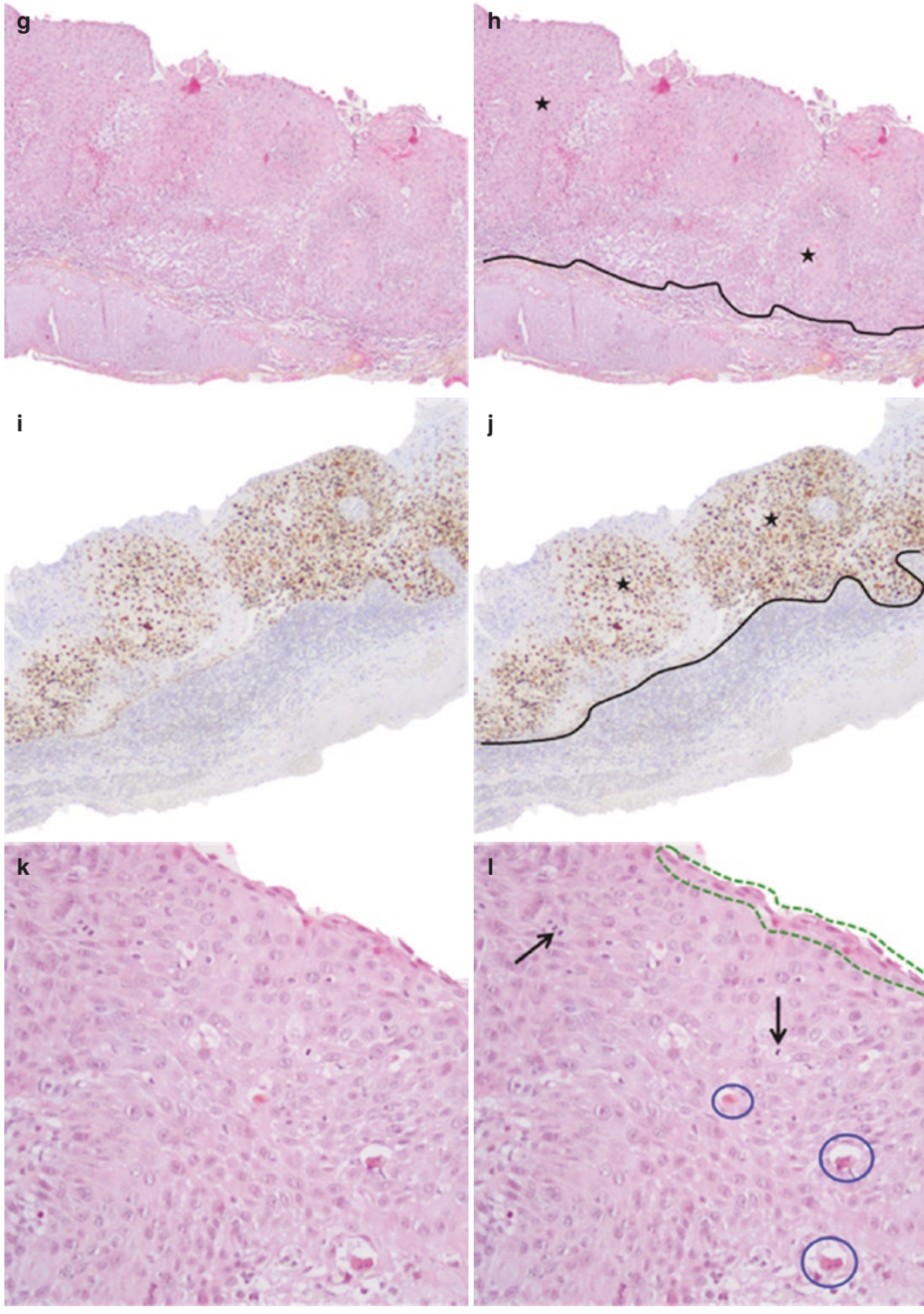

Fig. 13.6 Histological features of in situ gelatinous form of squamous cell carcinoma (**g**–**l**). (**g**, **h**) ×50 HES. (**i**, **j**) ×50 Anti-p53 Ab. (**k**, **l**) ×200 HES

13.2.2 In Situ Squamous Cell Carcinoma: Papillomatous Form

The papillomatous form (Fig. 13.7) is telangiectasic and more protruding. Dilated feeder vessels are visible (*black arrows*). The papillomatous form mimics conjunctival papilloma.

The IVCM features are as follows (Fig. 13.8a–d):

– Totally disorganized conjunctival epithelium is seen (*blue stars*).

Fig. 13.7 Clinical aspect of in situ papillomatous form of squamous cell carcinoma

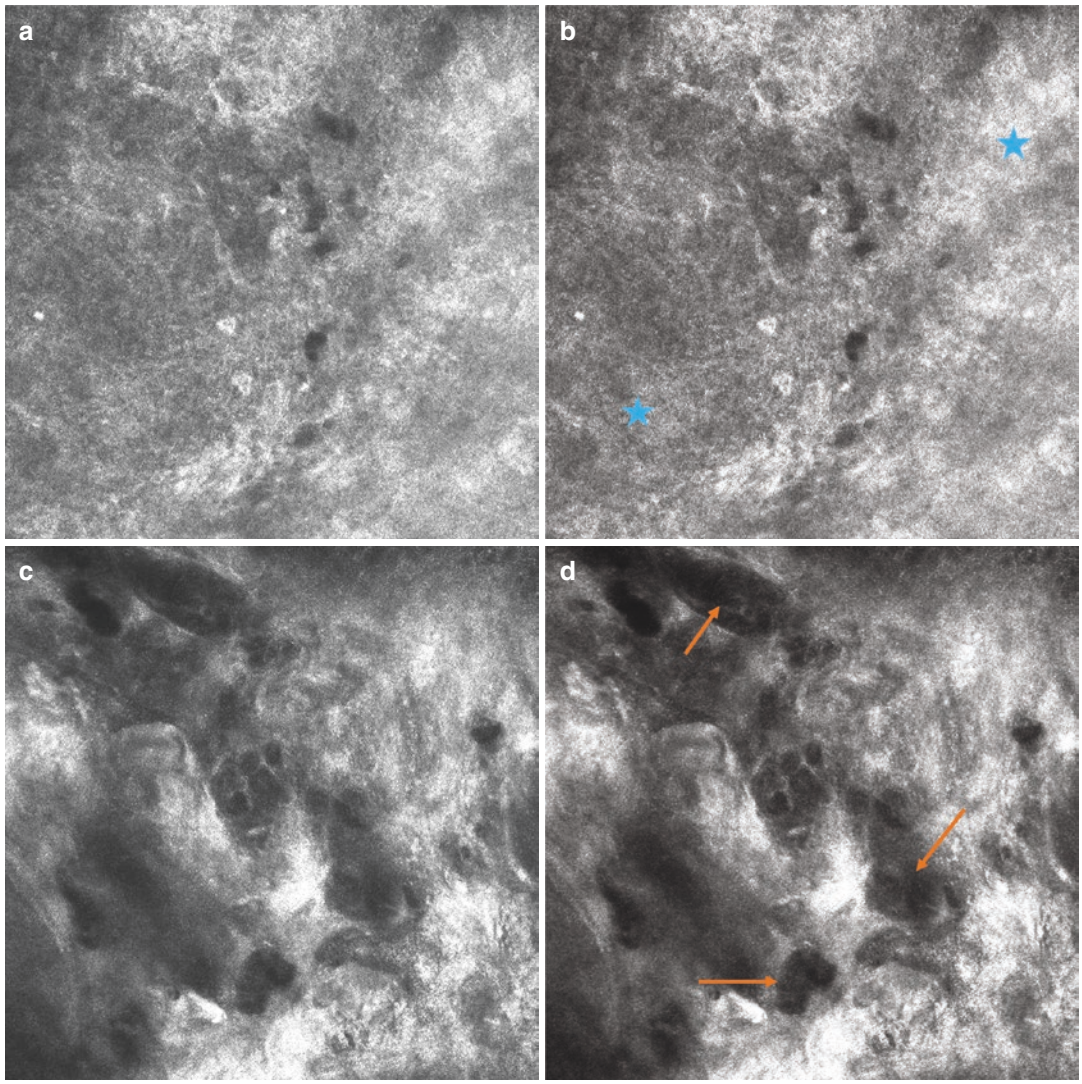

Fig. 13.8 IVCM features of in situ papillomatous form of squamous cell carcinoma (**a**–**d**)

– At greater depth, rounded hyporeflecting areas corresponding to the stroma (*orange arrows*) are visible; sometimes dilated vessels are often inside these areas.

On optical microscopy the histologic features are as follows (Fig. 13.9e–h):

– At low magnification (e–f), the proliferation of atypical squamous cells disrupts the architecture of the entire thickness of the epithelium, without crossing the basement membrane (*blue dotted lines*). Vessels are found within the proliferation (*green arrows*).
– At high magnification (g–h), proliferation is made up of joined polygonal cells with moderate atypia. Some mitoses are visible (*black arrows*).

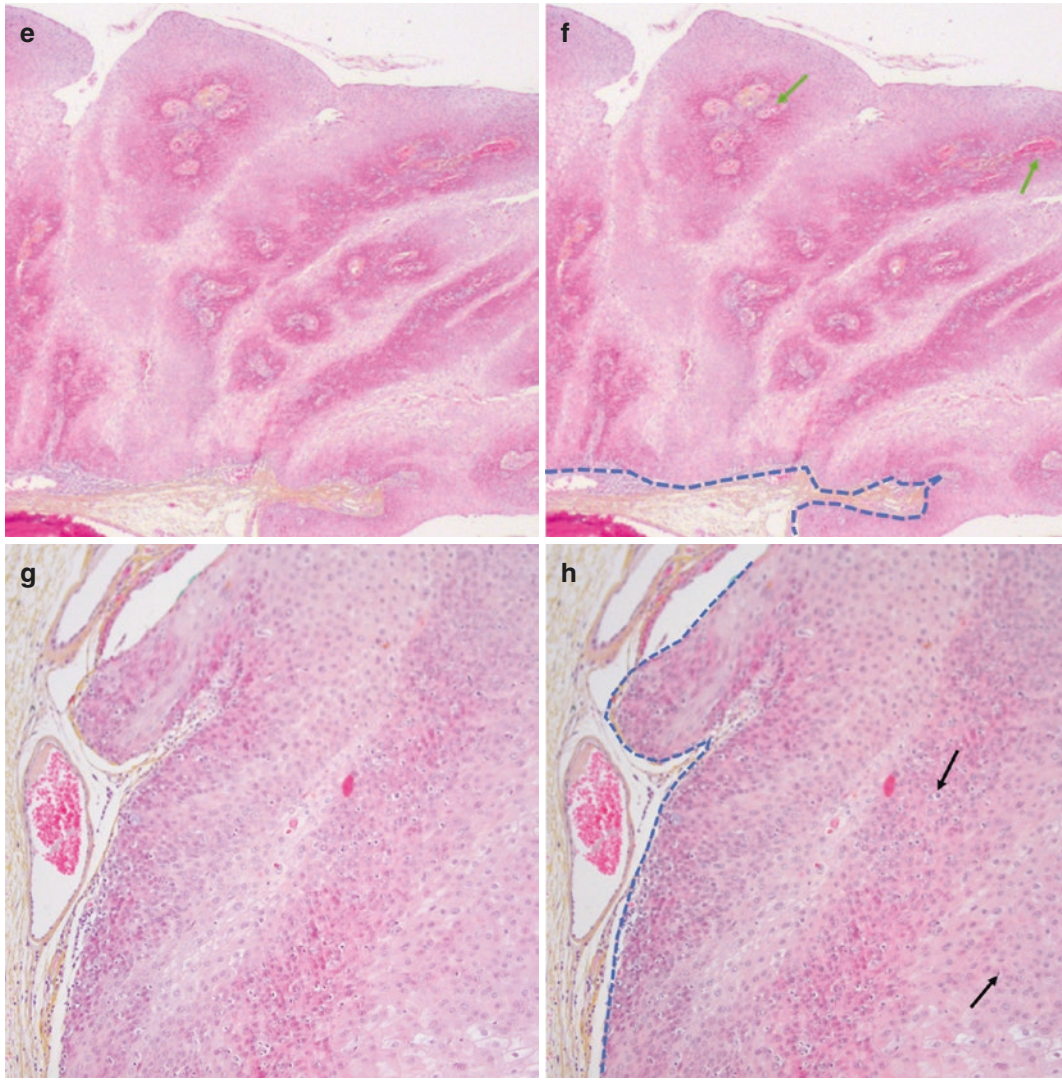

Fig. 13.9 Histological features of in situ papillomatous form of squamous cell carcinoma (**e**–**h**). (**e**, **f**) ×25 HES. (**g**, **h**) ×100 HES

13.2.3 Invasive Squamous Cell Carcinoma

This case of invasive squamous cell carcinoma is of gelatinous type with a wet sugar appearance (Fig. 13.10). It is surrounded by dilated superficial feeder vessels. The limbus is invaded.

The IVCM features are as follows (Fig. 13.11a–d):

– Corneal epithelium at the level of the limbus is disorganized (*yellow diamonds*), instead of having the regular honeycomb pattern (*green diamond*) of the normal cornea.

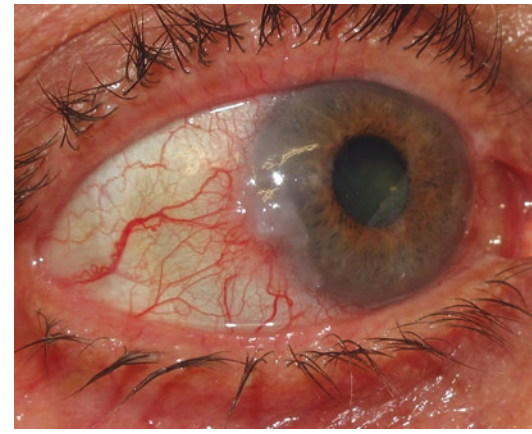

Fig. 13.10 Clinical aspect of invasive squamous cell carcinoma: slit-lamp photography

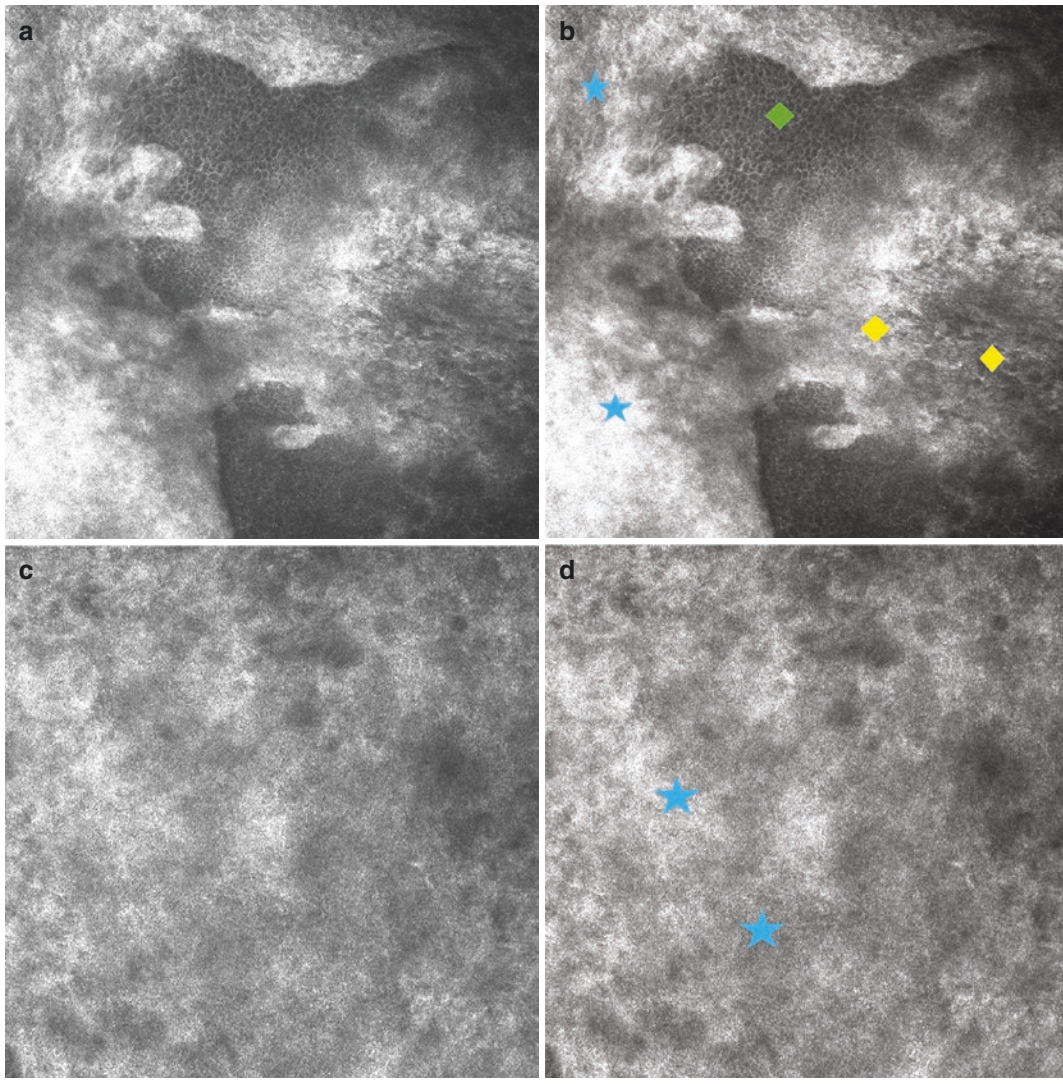

Fig. 13.11 IVCM features of invasive squamous cell carcinoma (**a**–**d**)

– Totally disorganized conjunctival epithelium is seen (*blue stars*).

On optical microscopy the histologic features are as follows (Fig. 13.12e–h):

– At low magnification (e, f), the proliferation of atypical squamous cells disrupts the architecture of the epithelium over its entire depth, with crossing of the basement membrane (*blue dotted lines*) and invasion of the chorionic layer (*blue arrow*).
– At high magnification (g, h), proliferation is made up of connected polygonal cells with high-grade cytonuclear atypia. Mitoses are visible (*black arrows*).

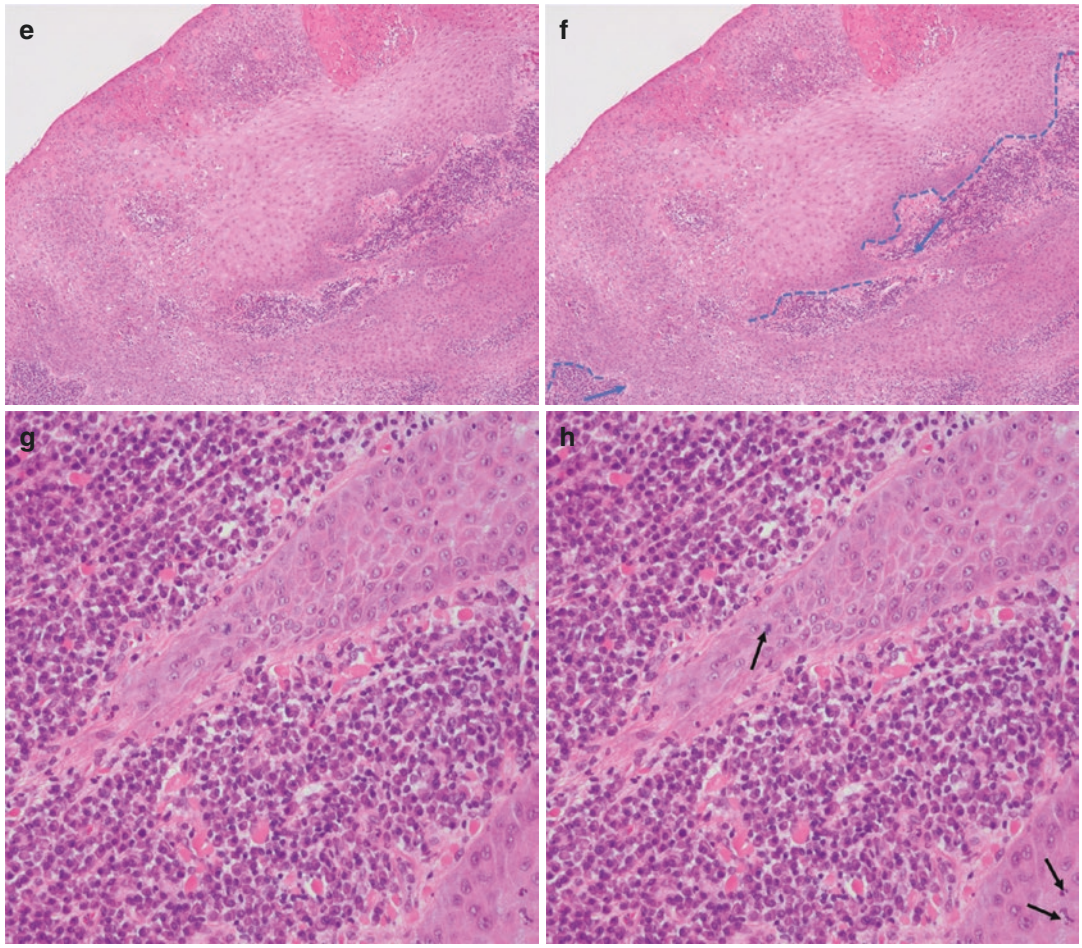

Fig. 13.12 Histological features of invasive squamous cell carcinoma (**e**–**h**). (**e**, **f**) ×50 HES. (**g**, **h**) ×200 HES