Seborrheic Keratosis: A Pictorial Review of the Histopathologic Variations
D Sarma, S Repertinger

Citation

Abstract
A brief review of the variations of microscopic appearances of seborrheic keratosis is presented.

Figure 1
Seborrheic keratosis: Acanthotic type (Figure 1)

Although no exact data are available for percentage distribution of different histologic subtypes of seborrheic keratosis, the acanthotic type appears to be the most common. This type shows marked acanthosis of predominantly basaloid cells [1]. Moderate papillomatosis and hyperkeratosis are present and characteristic horn cysts or pseudocysts are seen. Approximately one-third of these lesions exhibit melanocyte proliferation and hyperpigmentation, demonstrating the common finding of overlapping histologic findings between different subtypes. Squamous eddies are absent.

Figure 2
Seborrheic keratosis: Hyperkeratotic type (Figure 2)

Pronounced papillomatosis is present in the hyperkeratotic form of seborrheic keratosis [1]. Acanthosis is mild, but shows a verrucous appearance with elongated projections (“church spire” pattern). There is pronounced orthohyperkeratosis. While horn cysts and pseudocysts may be seen, they are less common than in the acanthotic form. Hyperpigmentation is unusual.

Figure 3
Seborrheic keratosis: Clonal type (Figures 3 and 4)
The hallmark of the clonal (nested) seborrheic keratosis subtype is the proliferation of sharply demarcated intraepithelial nests of basaloid or pale cells (Borst-Jadassohn phenomenon). In some cases the nests are composed of larger cells with conspicuous intercellular bridges, with nests separated by strand of cells with small dark nuclei.

**Figure 5**
Seborrhieic keratosis: Flat clonal type (Figures 5 and 6)

Flat seborrheic keratosis of clonal type shows acanthosis and intraepithelial nests of basaloid or pale cells. However, papillomatosis and hyperkeratosis is not prominent. This variant may be confused histologically with melanocytic nevus or malignant melanoma by the inexperienced.

**Figure 7**
Seborrhieic keratosis: Reticulated type (Figures 7 and 8)

The reticulated (or adenoid) type is characterized by numerous, thin, double rows of basaloid epidermal cells which extend from the epidermis and show branching and interweaving in the dermis. Hyperpigmentation is relatively common, although horn cysts and pseudocysts are not [1]. There is clinical and histologic evidence of a relationship between solar lentigo and the reticulated subtype of seborrheic keratosis; solar lentigo may even become a reticulated seborrheic keratosis through exaggerated downward budding of basal cells.
Seborrheic Keratosis: A Pictorial Review of the Histopathologic Variations

**Figure 9**
Seborrheic keratosis: Irritated type (Figures 9 and 10)

Irritated seborrheic keratosis shows a lichenoid inflammatory infiltrate in the dermis and intraepithelial squamous eddies [1], which are composed of whorling aggregates of eosinophilic squamous cells. In this type, the squamous cells outnumber the basaloid cells. Most eddies appear to show at least one of the morphological features of intraepidermal hair follicle structures [2]. Squamous eddies may be confused with horn pearls of squamous cell carcinoma, but can be differentiated from them by their large number, small size, and circumscription. Other features of irritated seborrheic keratosis include apoptotic cells in the basal layer and occasional acantholysis, dyskeratosis, and spongiosis.

**Figure 10**
Seborrheic keratosis: Irritated type (Figures 9 and 10)

Pigmentation is often seen within the acanthotic and reticulated subtypes of seborrheic keratosis. Pigment is present mainly within basal keratinocytes, although in melanocytic nevus, a rare type of pigmented seborrheic keratosis, a marked increase in melanocytes containing melanin pigment is seen. The pigmented subtype may be clinically confused with other pigmented lesions, such as malignant melanoma, pigmented basal cell carcinoma, or melanocytic nevus.

**Figure 11**
Seborrheic keratosis: Pigmented type (Figures 11 and 12)

**Figure 12**
Seborrheic keratosis: Pigmented type (Figures 11 and 12)

**Figure 13**
Seborrheic keratosis: Acantholytic type (Figures 13 and 14)

The acantholytic subtype usually incorporates features of other subtypes, particularly of the irritated type, and are
located on the face and scalp (65%) [3]. Acantholysis is seen almost exclusively in the squamous nests showing dyskeratosis and spongiosis between and around squamous eddies or horn cysts. It is speculated that the dyskeratotic, degenerative changes of keratinocytes, together with the spongiosis, are responsible for the acantholysis.

References

Author Information

Deba P Sarma, MD
Department of Pathology, Creighton University Medical Center

Susan Repertinger, MD
Department of Pathology, Creighton University Medical Center