

# A pink papule on the back of an 82-year-old man: an example of the buttonhole sign on reflectance confocal microscopy

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## Clinical presentation

An 82-year-old man with Fitzpatrick skin type III presented for the evaluation of a lesion on the left upper back. A scaly pink papule was observed (Figure 1). The differential diagnosis

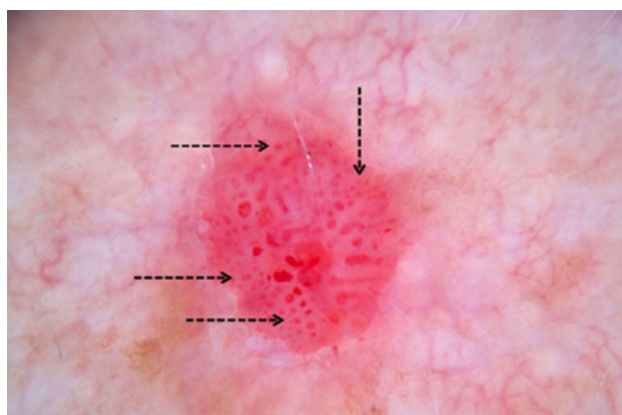


**Figure 1.** Squamous cell carcinoma *in situ*. Scaly pink papule on the left upper back. [Copyright: ©2016 Que et al.]

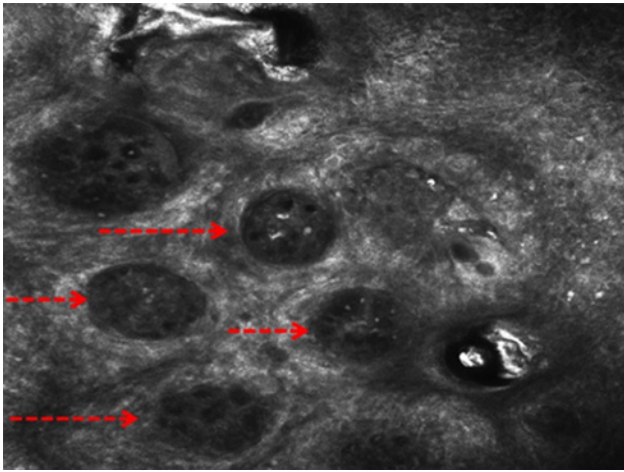
included squamous cell carcinoma (SCC), actinic keratosis, basal cell carcinoma, and amelanotic melanoma.

## Dermoscopic appearance

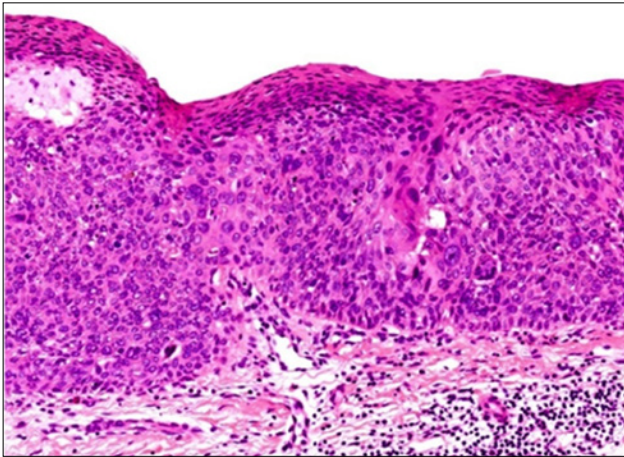
On dermoscopy, multiple coiled blood vessels (also termed glomerular vessels) were scattered across the papule (Figure 2) [1].



**Figure 2.** Squamous cell carcinoma *in situ*. Dermoscopic image showing dotted and round blood vessels (black arrows) appearing centrally and around the periphery. [Copyright: ©2016 Que et al.]



**Figure 3.** Squamous cell carcinoma *in situ*. At the level of the dermo-epidermal junction, reflectance confocal microscopy reveals round blood vessels (“buttonholes”) traversing the dermal papillae (“buttons,” red arrows). [Copyright: ©2016 Que et al.]



**Figure 4.** Histopathology reveals full-thickness cytological atypia with mitoses and acantholysis, consistent with squamous cell carcinoma *in situ*. [Copyright: ©2016 Que et al.]

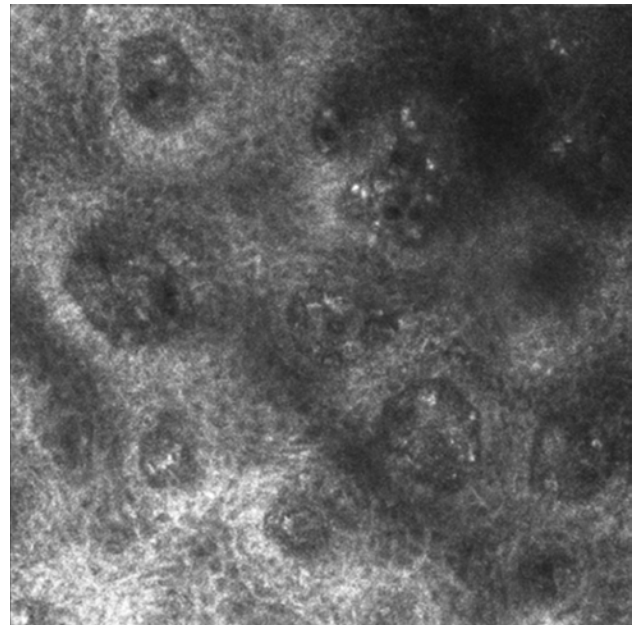
## Reflectance confocal microscopy appearance

Reflectance confocal microscopy (RCM) at the level of the dermo-epidermal junction shows dermal papillae appearing in cross-section as perfect circles, resembling “buttons.” Round blood vessels traverse through the dermal papillae, appearing centrally and around the periphery as “buttonholes” (Figure 3). The surrounding epidermis is characterized by an atypical honeycomb pattern consisting of cells with variability in brightness and in the size of nuclei.

### *What is your diagnosis?*

#### Diagnosis

Histopathology revealed SCC *in situ* (Figure 4). The “buttonholes” seen on RCM correlate with numerous tortuous blood vessels at the dermal papillae of the SCC *in situ* (Figure 5).



**Figure 5.** Psoriasis. At the level of the dermo-epidermal junction, reflectance confocal microscopy reveals round blood vessels (“buttonholes”) traversing the dermal papillae (“buttons,” red arrows). [Copyright: ©2016 Que et al.]

## Discussion

A buttonhole sign in the presence of an atypical honeycomb pattern is an RCM clue for SCC. Previous articles have correlated dotted vessels on dermoscopy with sparsely distributed round vessels on RCM [2]. Here we report a new RCM diagnostic clue not previously reported—the presence of numerous round vessels in an SCC *in situ* with coiled vessels. The uniformity, clustered nature, and multitude of these round vessels reflect the way these vessels repeatedly loop through the dermal papillae. This finding is not specific for SCC and can be observed in conditions like psoriasis or clear cell acanthoma, when there are coiled or glomerular vessels seen under dermoscopy. However, in SCC the increased vascularity is seen under RCM in conjunction with irregularity of the honeycomb pattern of the spinous and granular layers of the epidermis.

## References

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