



## Characterization of Epidermal Inflammatory Cyst by Squamous Epithelium

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### Description

A cancerous condition called Squamous Cell Carcinoma (SCC) develops in the keratinocytes of the epidermis. Rarely have cystic forms of several cutaneous tumour types been documented in the literature. We present a case of invasive SCC with a well-differentiated biopsy that was successfully treated with Mohs surgery. The pathology slides on frozen sections revealed benign-looking cystic formations in the margins that remained even after it seemed as though the initial tumour had been removed. More SCC was discovered after taking another Mohs stage owing to clinical suspicion, and it was later cleared after two additional Mohs stages. This is the first case that, to the best of our knowledge, histologically shows biopsy-proven invasive SCC with benign-appearing cystic formations on frozen sections.

The second most prevalent kind of cutaneous cancer that develops from abnormal epidermal keratinocytes is squamous cell carcinoma (SCC). Nevertheless, cystic forms are uncommon to find. Histologically, it may be categorised on a range from well to poorly differentiated, can be invasive versus *in-situ*, and has differential propensity for perineural invasion, lymphovascular invasion, and metastasis. Milia and Epidermal Inclusion Cysts (EIC) are often seen clinically as keratin-filled spherical structures. Histologically, they are lined by a preserved granular layer, squamous epithelium, and keratinous material in the lumen. These benign neoplasms can occasionally develop into malignancies. We describe a case of Mohs surgery for a case of biopsy-confirmed, fairly well-differentiated invasive SCC with benign-appearing milia/cyst-like formations in the margins.

A 91-year-old man who had previously been diagnosed with basal cell carcinoma of the chin and a

cerebrovascular accident arrived to the clinic with a right forearm nodule that had been growing, hurting, and draining for a month. The patient had no past history of osteomyelitis, trauma, or a persistent wound in the region. An aggressive, well-differentiated SCC without definite perineural, lymphovascular, or subcutaneous invasion was discovered during a shave biopsy. The patient was a candidate for Mohs surgery due to the lesion's size and ill-defined margins. Stage I epidermal keratinocyte atypia with large hyperchromatic and pleomorphic nuclei was seen on frozen sections. Furthermore, cutaneous keratin-filled cystic formations with a retained granular layer and stratified squamous epithelium were seen in the margins, histologically simulating EICs against milia.

There was no atypia or malignant squamous growth in the cyst wall or lumen. For more precise staging, stage I tissue was defrosted and submitted for permanent sections. Squamous cell carcinoma without perineural or lymphovascular invasion was detected on pathology. Stage II was characterised by the persistence of the benign-appearing dermal cystic formations in the margins but no keratinocyte atypia. It was discussed whether to continue with Mohs excision or to observe. There was no adequate, believable explanation for the cystic formations despite their unremarkable appearances. Clinical suspicion led to the decision to carry out the procedure.

A milium, also known as an Epidermal Inflammatory Cyst (EIC), is characterised histologically by squamous epithelium, a retained granular layer, and epidermal-type keratinous material in the lumen. There have been reports of Merkel cell carcinoma, basal cell carcinoma, and SCC all developing from EICs. During the first biopsy of well-differentiated invasive SCC, no cystic formations were seen. After Mohs surgery, fro-

zen sections revealed benign-looking cystic formations in the margins that persisted even after it looked that the primary cancer had disappeared. More SCC was discovered after taking another stage owing to clinical suspicion, and after two further stages, it was cleared.

While analysing frozen sections of KAs/SCCs for any cystic formations that first appear benign, we encourage Mohs surgeons to have an open mind. We advise thinking about further excision up until the underlying cancer and these structures are clear.