

## Aggressive digital papillary adenocarcinoma: a case report

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### ABSTRACT

Aggressive digital papillary adenocarcinoma is a rare malignancy of eccrine sweat gland origin with propensity for metastasis and recurrence, occurring in men. The recognition of this tumor as a distinct clinicopathologic eccrine sweat gland neoplasm is important because of the potential for aggressive local growth and distant metastasis.

**Key words:** Skin neoplasm, sweat gland, aggressive tumor, rare malignancy.

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### 1. INTRODUCTION

Aggressive digital papillary adenocarcinoma is a rare neoplasm of eccrine sweat gland origin. These tumors were originally described in 1987. This occurs on fingers, toes and adjacent skin of palms and soles, commonly seen in males, as a single often cystic mass (David 2005; Kao et al. 1997). This has the potential for highly aggressive biological behavior. Here we present this rare neoplasm in female with brief review of literature.

### 2. SCOPE OF THE STUDY

To know the histopathology and biologic behavior of these tumors.

#### 2.1. Materials

A female aged 41 years presented to OPD with swelling on the dorsum of right wrist, which as cystic on examination. Excision was done and sent for histopathological examination with 10% formalin fixative.

#### 2.2. Methodology

Excision biopsy was received in our department, which was grey white nodule with skin attached. On gross examination of the specimen, it was greywhite nodular mass with skin attached measuring 0.5 x 0.5 cms in size. On cut section, showed cystic and solid areas, drained blood stained fluid. Sections were taken and processed in histokinette by sequential changes in alcohol, xylene and embedded in paraffin bath. Blocks were made; serial sections were taken at 5 micron thickness, stained and observed under microscope.

### 3. RESULTS

On microscopic study, the epidermis was within normal limits. The dermis showed lobular arrangement of the tumor cells interspersed by fibrotic bands (Figure 1). The tumor cells have scant to moderate cytoplasm and the nucleus appears ground glass due to intra-nuclear cytoplasmic

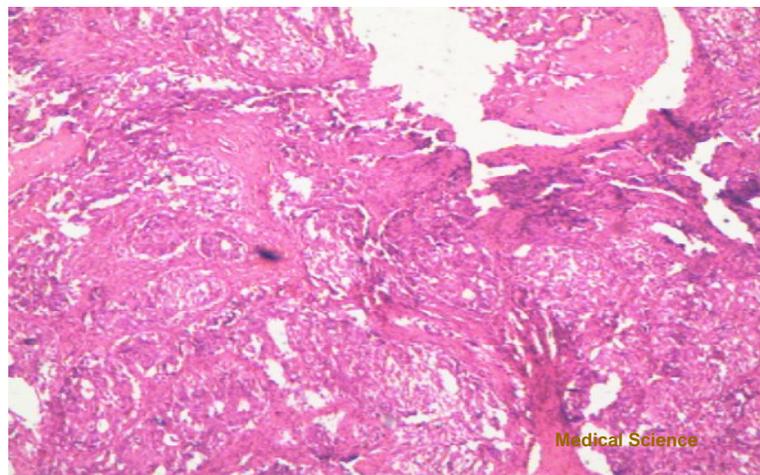
inclusion, showing pleomorphism and mitotic figures. These tumor cells are also arranged in tubuloalveolar pattern, at areas papillary projections into the lumen with few cystically dilated glandular structures (Figure 2). Infiltration to subcutaneous fat is also noticed and was diagnosed as Aggressive digital papillary adenocarcinoma.

### 4. DISCUSSION

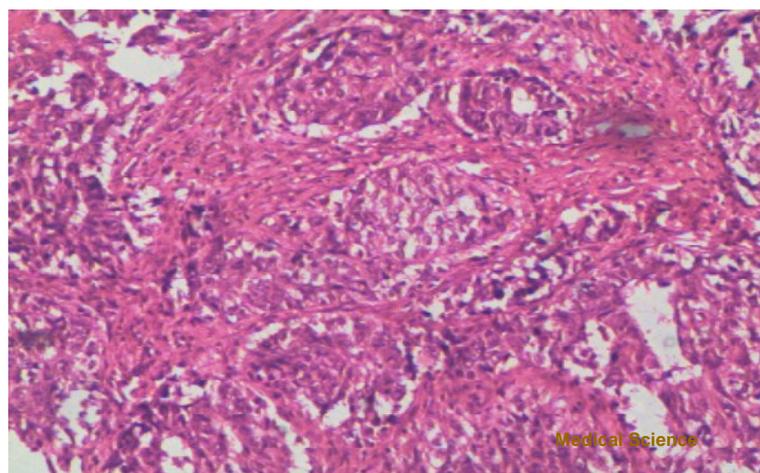
Aggressive digital papillary adenocarcinoma is a rare variant of sweat gland carcinoma of the digits and volar surface, which has the potential for highly aggressive biological behavior (Bakotic et al. 2000). The original description of digital papillary sweat gland tumor was made by Kao et al in 1987 (Singla et al. 1997) suggesting that they could be divided into benign and malignant variants. However recent reviews have indicated that all these neoplasms should be considered as malignant abinitio, because of their frequent recurrence and metastasis (Duke et al. 2000). These tumors occur predominately in men with mean age of 52 years (19 to 93 years). In our case, this tumor is seen in female, being unusual, when gender factor is considered and presented as solitary nodule on dorsum of right wrist. The characteristic histologic finding of the lesion includes tubuloalveolar and ductal structures associated with papillary projections protruding into cystically dilated lumina. Macropapilla are lined by atypical epithelial cells project into micro cysts. Stroma may vary from thin, fibrous septa to areas of dense hyalinised collagen along with fused back to back glands, lined by cuboidal to low columnar cells, often these picture lead to the diagnosis of metastatic carcinoma as that of breast. Mitotic activity is often present. However recent studies suggest that histologic feature alone cannot reliably predict clinical behavior and therefore all lesions should be considered as aggressive digital papillary adenocarcinoma (Jih et al. 2001). The tumor cells may infiltrate deeply into underlying soft tissue and even into bone, at times digital amputation is warranted in some cases to gain local control of the tumor (Inaloz et al. 2002).

### Pleomorphism:

pleomorphism, the existence of irregular and variant forms in the same species or strain of microorganisms, a condition analogous to polymorphism in higher organisms. Pleomorphism is particularly prevalent in certain groups of bacteria and in yeasts, rickettsias, and mycoplasmas and greatly complicates the task of identifying and studying them.



**Figure 1**  
Histologically showing lobular, at areas tubuloalveolar arrangement of tumor cell (H & E 40X)



**Figure 2**  
Microscopically showing higher view of tubuloalveolar pattern of tumors cells & fibrous bands (H & E 100X)

## 5. CONCLUSION

The recognition of aggressive digital papillary adenocarcinoma as a distinct clinicopathologic eccrine sweat gland neoplasm is important because of the potential for aggressive local growth and distant metastasis. Thus complete excision is recommended, since there is 50% recurrence rate. It should also be differentiated from metastatic breast tumor, as the histopathology resembles same. Hence early detection by histological evaluation is the need of the hour, in order to prevent digital amputation in later course.

## SUMMARY OF RESEARCH

The recognition of this tumor as a distinct clinicopathologic eccrine sweat gland neoplasm is important because of the potential for aggressive local growth and distant metastasis.

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### Jih et al. (2001):

This study report a case of an aggressive digital papillary adenocarcinoma (ADPA) on the right thumb of a 48-year-old white man. Histologic evaluation of the initial biopsy demonstrated features consistent with those proposed for aggressive digital papillary adenoma; however, re-excision of the remaining lesion revealed histologic features consistent with aggressive digital papillary adenocarcinoma. These tumors have a high rate of local recurrence and can metastasize, occasionally resulting in mortality. Our case demonstrates that even if the histologic criteria of aggressive digital papillary adenocarcinoma are met, the lesion may still represent an aggressive digital papillary adenocarcinoma (ADPAca). In agreement with a recent study by Duke et al., this case supports the idea that aggressive digital papillary lesions should be classified as aggressive digital papillary adenocarcinoma.