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ECCRINE ADENOCARCINOMA OF SWEAT GLAND: A CASE REPORT AND REVIEW OF LITERATURE

Metta Raja Gopal¹, S. V. Kumar², K. Lakshmi Kumari³, P. V. S. S. Vijaya Babu⁴

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ABSTRACT: Eccrine adenocarcinoma of sweat gland is a extremely rare malignant sweat gland tumour. Sweat gland tumours show high female predominance and involve individuals of middle to old age. The diversity of histological finding for diagnosing the type of eccrine tumours contributes to the difficulty in establishing histological prognosis. Herewith we are presenting a 40 year female with multinodular tumours at the superior end of nape of neck, which is slowly growing with no distance metastasis. After routine blood, biochemical and histopathological examination she had been diagnosed as eccrine adenocarcinoma of sweat gland. These tumours are poorly responsive to medical therapy. Wide local excision with tumour free margins offers a reasonable chance of long term survival.

KEY WORDS: Eccrine gland, Sweat gland, Adenocarcinoma.

INTRODUCTION: Eccrine adenocarcinoma is a rare malignant sweat gland tumour, generally featuring slow growth rate and high local recurrence rate.¹ In a review at Mayo clinic of more than 75 years of skin tumours, only 14 cases eccrine adenocarcinoma were recorded. There are three types of sweat glands in the human body, eccrine, apocrine and apoeccrine types. Sweat gland carcinomas were first reported by Stout and Cooled in 1951. Sweat gland classification is important since each of the specific sweat gland carcinoma features its own characteristic behavior. Numerous subtypes with different biologic and pathologic characteristics make the topic a challenging one. More than 10 subtypes are known, including eccrine porocarcinoma, hidradenocarcinoma, mucinous eccrine carcinoma, adenoid cystic carcinoma, aggressive digital papillary adeno carcinoma, microcystic adenexal carcinoma, mucoepidermoid carcinoma of the skin, eccrine spiradenoma, eccrine ductal adeno carcinoma, clear cell carcinoma, carcinosarcoma and basaloid eccrine carcinoma.^{2,3} Apocrine carcinomas are able to metastasize to regional lymphnodes and do so frequently, whereas eccrine carcinomas are typically not able to metastasize.⁴ The incidence of sweat gland carcinoma appears to be female predominance and usually involves individuals of middle to old age.⁵ Sweat gland tumours are able to develop anywhere on the trunk of the body or on the extremities. Sweat gland carcinomas are often under diagnosed or misdiagnosed due to their clinical rarity. The clinical manifestation of eccrine carcinoma is destructive with a propensity for metastasis.^{4,6} Sweat gland tumours are rare with approximately 200 cases of eccrine sweat glands and 38 cases of apocrine sweat gland carcinoma being reported in the world literature.^{7,8} Sweat gland malignancy accounts for approximately 0.005% of all malignant epithelial neoplasms. In one series of 4,50,000 skin biopsy specimens only 35 specimens were sweat gland carcinomas.⁹

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CASE REPORT: A forty year female presented to surgery outpatient department at King George Hospital, Visakhapatnam, Andhra Pradesh, India for evaluation of a painless superficial multinodular mass on the top of the nape of her neck. The nodules had slowly growing over the period of 3 years measuring 1.5x2 cms. The mass was not discoloured but hyperkeratotic. There was no surrounding lymphadenopathy. On examination the thyroid, breast, chest, abdomen and uterus along with ovaries were normal. Routine blood and biochemical investigations were within normal limits. Earlier she was operated twice at another hospital and her biopsy specimen was sent for histopathological examination. Her biopsy report revealed that she had adenocarcinoma of sweat gland that is eccrine adenocarcinoma. She came to us with recurrent mass for the third time. This time wide local excision was done and local rotation skin flap was made. The margins are free of tumour. The post-operative period was uneventful.



Fig. 1: Picture showing multinodular mass on the top of the nape of the neck

DISCUSSION: Eccrine carcinoma is a quite rare malignant tumour that typically arises from a sweat gland and that features a rather higher recurrence rate. These tumours are potential for destructive local tissue infiltration and regional metastasis. The management of these neoplasms is both complex and cumbersome, mainly due to limited availability of literature. The three basic types of sweat glands are eccrine, apocrine and apoeccrine.

The eccrine glands are present everywhere except the lips, glans penis, inner surface of prepuce and labia minor. They are denser on palms and soles. Apocrine glands are limited to ear canal, eyelids, axilla, anogenital region and areola of mammary gland and are under control of hormones.^{10,11,12} Two main types of sweat gland carcinoma are apocrine gland carcinoma and eccrine gland carcinoma. Eccrine gland carcinoma possesses no distinctive features. They usually manifest as non-tender, subcutaneous nodules, primarily in elderly individual.

Apocrine carcinoma manifest as non-tender single firm, rubbery or cystic masses with red to purple overlying skin.¹³ Eccrine sweat glands are of clinical importance of regulating body temperature. The skin contains 3,000,000 sweat glands. Histopathologically these are simple tubular glands. The secretory epithelium is cuboidal or low columnar. Two types of cells may be distinguished: a light type, which secretes the watery sweat and dark type which may produce a mucin like secretion. Cells are arranged in different shapes. Because of this arrangement,

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epithelium may appear like pseudostratified. A layer of myoepithelial cells are found between secretory cells of epithelium. The secretory duct is lined by stratified cuboidal epithelium. This excretory duct empties directly onto the surface of skin.

Histopathologically eccrine tumours revealed an undifferentiated malignant proliferation. Tumor cells show clear cytoplasm with an hyperchromatic nucleus and a high mitotic activity. Individual malignant cells are rich in glycogen and stain with PAS and are diastase sensitive with prevalent nuclear changes and propensity for lymphatic invasion. The glandular features show narrow lumen surrounded by a layer of flat cuboidal cells with no hemosiderin. PAS stain after diastase digestion shows the tubular structures are not surrounded by a basement membrane but rather by a strongly stained cuticle containing amorphous masses in their lumen.^{10,12,13}

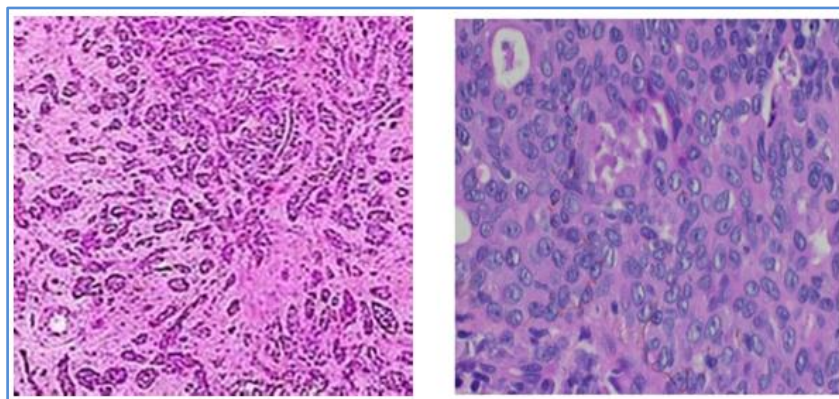


Fig. 2

Fig. 3

The microphotographs show hyperchromatic nuclei and narrow glandular pattern.

Apocrine gland carcinoma is a rare sub type which is relatively limited in distribution and found in the axilla, the medial aspect of the upper arm, the areola, the lateral aspects of the breast, ear canal and anogenital region. These tumours spread via both lymphatic and vascular route. Approximately one third of patients have regional lymph node involvement at diagnosis.

Sweat gland carcinomas occur equally in both sexes¹⁴ and in all races. Sweat gland carcinomas are broadly divided in to two.¹⁵

1. Tumours bearing resemblance to their benign counterparts.
2. Tumours without or minimal resemblance to their counterparts and are further classified in to
 - a) Eccrine adeno carcinoma.
 - b) Mucinous eccrine adeno carcinoma.
 - c) Adenoid cystic eccrine adenocarcinoma.
 - d) Aggressive papillary adenoma.

In this case the mass is at the nape of the neck and appearance like subcutaneous non-tender nodules is favourable towards eccrine gland tumour. Histopathological report shows narrow lumen of glandular part and tumour cells show high chromatic nucleus and confirm the diagnosis as eccrine adenocarcinoma. The recommended treatment of all subtypes of sweat

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gland carcinomas is wide surgical excision along with regional lymph node dissection in the presence of clinically positive nodes. Prognostic features for sweat gland carcinoma are difficult to identify, again owing to the small number of reported cases. The likely prognostic factors include size, histological type, lymph node involvement and distant metastasis. 10 year disease free survival rate of 56% in the absence of lymph node metastasis is observed which falls to 9% of nodes are involved.

Surgery is the first choice for the management of eccrine carcinoma, since this carcinoma features a poor response to chemotherapy and radiotherapy.¹⁶ Given its poor response to adjuvant therapy, wide excision of the lesion with tumour free margins may offer a reasonable chance of long term prognosis.

CONCLUSION: Eccrine adenocarcinoma can be slowly growing but does feature the potential for recurrence, as well as distal metastasis. Primary treatment includes wide local excision with or without regional lymphadenectomy.

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AUTHORS:

1. Metta Raja Gopal
2. S. V. Kumar
3. K. Lakshmi Kumari
4. P. V. S. S. Vijaya Babu

PARTICULARS OF CONTRIBUTORS:

1. Associate Professor, Department of Surgery, Andhra Medical College, Visakhapatnam, Andhra Pradesh, India.
2. Professor, Department of Surgery, Andhra Medical College, Visakhapatnam, Andhra Pradesh, India.
3. Assistant Professor, Department of Anatomy, Andhra Medical College, Visakhapatnam, Andhra Pradesh, India.

4. Assistant Professor, Department of Biochemistry, Andhra Medical College, Visakhapatnam, Andhra Pradesh, India.

NAME ADDRESS EMAIL ID OF THE CORRESPONDING AUTHOR:

Dr. P. V. S. S. Vijaya Babu,
Assistant Professor,
Department of Biochemistry,
Andhra Medical College,
Visakhapatnam, A. P, India.
E-mail: vb_bio@yahoo.com

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