DOI: 10.7860/JCDR/2024/72947.19718

Case Report

Pathology Section

Malignant Eccrine Tumours at Unusual Locations: A Report of Two Cases

NEHA SINGH[1], RUPINDER KAUR[2], FIZA CHOPRA[3]

ABSTRACT

Eccrine carcinoma is a rare skin adnexal tumour that presents significant diagnostic challenges due to its uncommon occurrence and varied clinical presentations. This report discusses two unique cases of eccrine carcinoma in middle-aged females, occurring at atypical locations: the thigh and the anal region. It emphasises the importance of recognising such tumours for appropriate management. The first case describes a 53-year-old woman with a chronic, non healing thigh ulcer that was initially suspected to be a benign lesion but was later identified as spiradenocarcinoma through histopathological examination. This highlights the potential for benign eccrine lesions to undergo malignant transformation. The second case involves a 50-year-old woman presenting with rectal bleeding and a malignant growth at the anal verge, which was confirmed as eccrine carcinoma through comprehensive pathological analysis, including immunohistochemical staining. Both cases underline the crucial role of detailed clinical observation and advanced histopathological evaluation in diagnosing and managing eccrine carcinoma, particularly when presented in non traditional sites. This approach guides effective treatment strategies and improves patient outcomes.

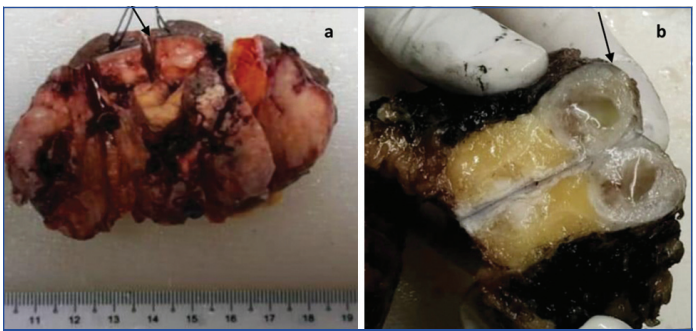
Keywords: Eccrine carcinoma, Histopathology, Immunohistochemistry, Malignant transformation, Skin adnexal tumours, Spiradenocarcinoma

CASE REPORT

Case 1

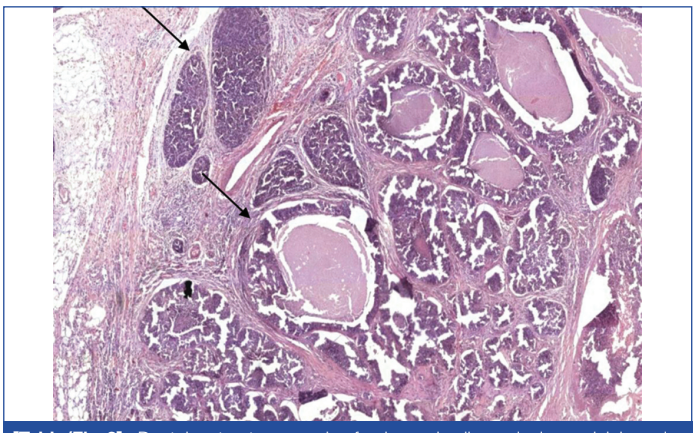
A 53-year-old female patient presented with chronic pain and swelling in her left lower limb for three years. Local examination revealed a non healing, fungating ulcer on the posterior-medial aspect of her left thigh, which had persisted for the last three years, along with multiple nodules at the periphery of the lesion. There was no previous history of any skin lesion growth. Imaging findings, including lower limb colour doppler and ultrasonography of the whole abdomen, were non contributory. Clinical suspicion of a Marjolin's ulcer was raised. A wide local excision was performed, and the specimen was sent for histopathological examination.

The biopsy was received in the histopathology department in multiple pieces, two of which were partially covered by skin, measuring 8×6.5×2.5 cm and 5.5×5.4×1.5 cm, respectively. The largest skin-covered tissue displayed an ulcer measuring 5.5×5 cm with everted margins and a necrotic base [Table/Fig-1a]. A cut section through it revealed a greyish-white, circumscribed growth with a depth of 1 cm, containing cystic areas filled with mucoid material [Table/Fig-1b]. The other tissue pieces showed multiple nodules collectively measuring 1.5×1.2×1.7 cm with a greyish-white cut surface.



[Table/Fig-1]: a) Skin-covered soft-tissue piece showing an ulcerated lesion with everted margins and necrotic base; b) Cut sections show a greyish-white growth which was 1 cm deep.

Microscopically, the sections examined revealed several well-circumscribed nodules of benign spiradenoma extending into the dermis and subcutaneous tissue. The tumour exhibited basaloid cells forming ductal structures interspersed with basement membrane material and a sprinkling of lymphocytes. Adjacent to these were high-grade malignant components consisting of numerous ductular structures made up of polygonal cells with vesicular nuclei, irregular margins, and moderate eosinophilic cytoplasm. Many of these cell nests exhibited comedo necrosis and numerous atypical mitotic figures [Table/Fig-2]. A microscopic diagnosis of spiradenocarcinoma arising from benign spiradenoma was made. The patient attended regular follow-up appointments in the surgery outpatient department every two weeks for four months postexcision, after which she was lost to follow-up.

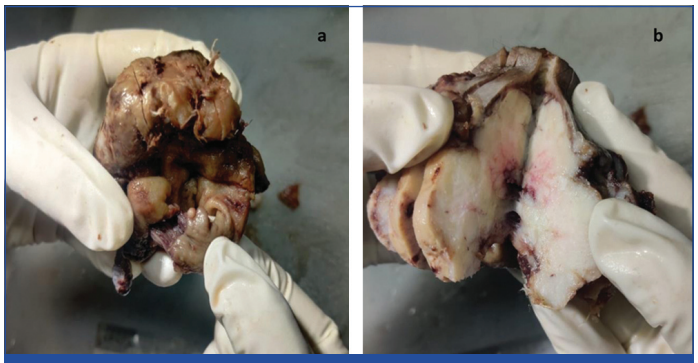


[Table/Fig-2]: Ductular structures made of polygonal cells, vesicular nuclei, irregular margins, and moderate eosinophilic cytoplasm with presence of comedo necrosis (H&E, 40x).

Case 2

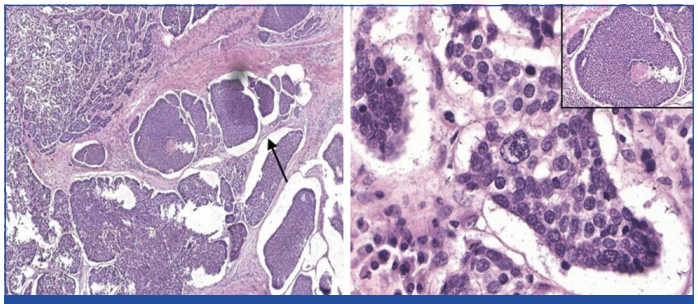
A 50-year-old female presented with rectal bleeding and constipation for six months. She had no previous history of any skin lesions. A local examination revealed an anal growth measuring 5.2×3.5 cm, which was identified as malignant on a Contrast Enhanced Computed Tomography (CECT) of the abdomen. Sigmoidoscopy

revealed a patchy loss of vascular pattern with oedematous mucosa. An Abdominal Perineal Resection (APR) with end colostomy was performed under general anaesthesia. A small tissue sample from the growth was sent to the pathology department for a frozen section, which tested positive for malignancy. The APR specimen, measuring 7×6.5×3 cm with attached perianal skin measuring 6×2.5 cm, was received for histopathological examination [Table/Fig-3a]. Cut sections through the growth revealed greyish-white solid areas [Table/Fig-3b]. The tumour was 0.2 cm away from the skin cut margin, while the other resection end was 1.5 cm away from the tumour. The tumour extensively involved the serosal surface of the intestine and reached up to the mucosa.



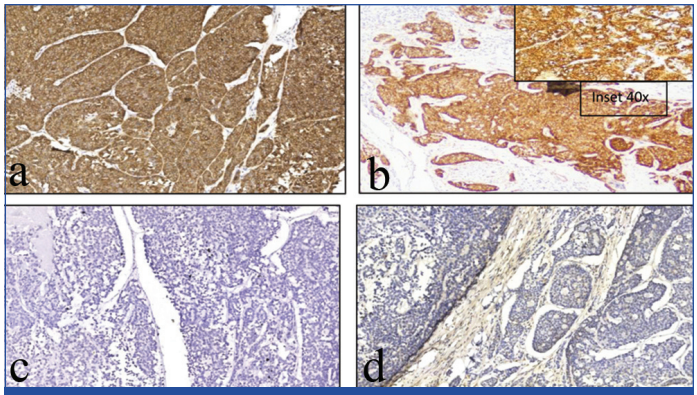
[Table/Fig-3]: Anal growth with attached perianal skin; b) Cut section shows greyish-white solid areas.

Microscopically, the sections examined showed markedly ulcerated anal canal mucosa with an infiltrative tumour arranged in sheets, nests, lobules, and cords, separated by thin fibrocollagenous septa. The cells formed pseudorosette-like structures and trabeculae surrounding basement membrane-like pink hyaline material [Table/Fig-4a]. Morphologically, the cells displayed basaloid morphology, with round hyperchromatic nuclei, conspicuous eosinophilic nucleoli, and scant to moderate eosinophilic cytoplasm. Areas showing abrupt anisonucleosis, bizarre cells, and comedo necrosis were also noted [Table/Fig-4b]. Brisk mitosis (22-24/10 HPF) and minimal Tumour Infiltrating Lymphocytes (TILs) were present. No benign counterpart was noted despite extensive sampling. Based on the above microscopic findings, the differential diagnosis of malignant spiradenoma and malignant cylindroma were made.



[Table/Fig-4]: a) Cells are forming pseudorosette and trabeculae surrounding basement membrane-like pink hyaline material (H&E 40x); b) The cells are medium in size with round hyperchromatic nuclei, conspicuous eosinophilic nucleoli, abrupt anisonucleosis, and bizarre forms (H&E, 100x). Comedo necrosis is also noted (inset H&E, 40x).

Immunohistochemistry was performed on relevant sections, and the results were as follows: CK7 showed diffuse cytoplasmic and membranous positivity [Table/Fig-5a]; beta-catenin showed diffuse cytoplasmic and focal nuclear positivity [Table/Fig-5b]; synaptophysin, Epithelial Membrane Antigen (EMA), chromogranin, and Carcinoembryonic Antigen (CEA) were negative [Table/Fig-5c,d]. Thus, microscopy and immunohistochemistry confirmed the diagnosis of a malignant eccrine tumour in both cases. The patient never returned to the outpatient department after being discharged from the hospital postsurgery.



[Table/Fig-5]: a,b) IHC-CK7: diffuse cytoplasmic membranous positivity, Beta Catenin: diffuse cytoplasmic membranous and focal nuclear positivity (inset 40x); c,d) EMA and Synaptophysin are negative (IHC 10x).

DISCUSSION

Sweat gland tumours are rare cutaneous malignancies categorised into four main groups based on their origin: eccrine, apocrine, a combination of both, and unclassifiable tumours [1]. Eccrine tumours can be benign or malignant. Benign types include spiradenoma, cylindroma, poroma, chondroid syringoma, and hidradenoma. Malignant eccrine carcinomas comprise spiradenocarcinoma, malignant cylindroma, syringoid carcinoma, mucinous carcinoma, adenoid cystic carcinoma, and ductal papillary adenocarcinoma. Additionally, there are unclassifiable sweat gland tumours such as clear cell eccrine carcinoma, eccrine ductal carcinoma, basaloid eccrine carcinoma, and non specific sweat gland carcinomas [2].

In the cases presented, both were diagnosed as spiradenocarcinoma. Microscopically, spiradenocarcinoma can range from well-differentiated to high-grade features like atypia, increased mitotic activity, and necrosis [3]. This contrasts with malignant cylindroma, which shows basaloid cells arranged in a jigsaw puzzle-like arrangement; syringoid carcinoma, characterised by increased cellularity and atypia; hidradenoma, displaying solid, cystic, and tubular structures; and eccrine ductal carcinoma, featuring ductal structures with cytologic atypia [4].

Eccrine carcinomas typically present as single, locally invasive, slow-growing, non encapsulated, and non tender nodules. They commonly appear in the head and neck region, followed by the trunk and extremities, affecting both sexes equally, usually in the fifth to seventh decades of life [5]. The presenting ages in both the case studies were comparable to those in the literature; however, in one of the cases presented, the anal region was the site of origin for the spiradenocarcinoma, which, to the best of the authors' knowledge, has not been reported in the literature. Salim A et al., reported a rare case of eccrine spiradenoma on the thigh, and Pal SS and Alam MS noted the rarity of eccrine spiradenomas in unusual locations such as the eyelid, requiring detailed microscopic and histopathological analysis [6,7]. Malignant transformation of eccrine tumours is rare. Theories regarding their malignancy include origin from aberrant skin tissue, transformation from benign eccrine lesions, and overgrowth of malignant components within pre-existing benign lesions [8]. A benign counterpart was present in one of the reported cases, and both patients did not experience any tumour recurrence.

The second case involved a 50-year-old female with rectal bleeding and a malignant anal growth. Detailed histopathological and immunohistochemical analysis was required for diagnosis. Comparably, Lach K et al., reported two cases of low-grade spiradenocarcinoma that demonstrated distant metastasis despite their typically indolent behaviour. The low-grade tumours exhibited subtle histopathologic signs of malignant transformation [9].

A comprehensive literature review by Wagner K et al., identifies significant challenges in the diagnosis and management

of spiradenocarcinoma. The study highlights high rates of local recurrence (20.8%), metastasis (37.4%), and mortality (19.1%) in 182 cases of spiradenocarcinoma, underscoring the importance of regular follow-up and advanced imaging techniques to monitor disease extent and recurrence [10]. Tian Q et al., analysed 11 cases of spiradenoma, highlighting its benign nature and common occurrence in the trunk and limbs, with patients ranging from 19 to 70 years old [11]. While the study emphasised the importance of histopathological diagnosis to prevent misdiagnosis, it also noted the potential for malignant transformation in long-standing or recurrent cases, which aligns with the findings of Wagner K et al., who stressed the need for regular follow-up due to high recurrence and metastasis rates in malignant spiradenoma cases [10].

Long-term follow-up is necessary for these patients, as studies have suggested that low-grade tumours can show metaplastic differentiation, aggressive behaviour, and can metastasise [12-14]. However, there was no evidence of metaplastic change or long-term follow-up in any of the cases mentioned in the present study.

CONCLUSION(S)

Malignant eccrine tumours can either arise de novo or develop from their benign counterparts, often following a prolonged course of transition from benign to malignant. These tumours generally have a poor prognosis in cases of distant metastasis. Due to their diverse clinical behaviour and histological features, these tumours can be challenging, making histopathology and immunohistochemistry essential for early detection. The rarity of these tumours, along with their occurrence in unusual locations in both of the case reports, makes them particularly noteworthy.

REFERENCES

[1] You D, Ma Z, Liu J, Song X, Dong W. Malignant eccrine spiradenoma of the external auditory canal: A case report and literature review. Front Oncol. 2021;10:574112.
[2] Martineau J, Walz SN, Scampa M, Giordano S, Kalbermatten DF, Oranges CM. Spiradenocarcinoma: SEER study of epidemiology, survival, and treatment options. J Clin Med. 2023;12(5):2045.
[3] Opango AD, Nshimirimana B, Jaifi A, Belmaachi S, Fawzi S, Mansouri-Hattab N. Eccrine spiradenoma of nose: Surgical case report. Int J Surg Case Rep. 2023;113:109033.
[4] Brambullo T, De Lazzari A, Franchi A, Trevisson E, Garau ML, Scarmozzino F, et al. A misdiagnosed familiar Brooke-Spiegler syndrome: Case report and review of the literature. J Clin Med. 2024;13(8):2240.
[5] Kłos N, Boblewska J, Szepelska A, Bienia G, Kosowski T, Kondratskyi V, et al. A rare case of spiradenoma or a common sebaceous cyst?- A case study. J Education, Health and Sport. 2024;62:158-63.
[6] Salim A, Tariq MU, Zeeshan S. Eccrine spiradenoma: A rare adnexal tumour with atypical presentation: A case report. J Pak Med Assoc. 2021;71(2(A)):553-55.
[7] Pal SS, Alam MS. Eccrine spiradenoma of eyelid- A rare tumor at an unusual location with literature review. Orbit. 2024;01-03.
[8] Kim TH, Jeong SH, Ha HJ, Kim CH. Painful eccrine spiradenoma containing nerve fibers in the forearm: A case report. Arch Hand and Microsurgery. 2024;29(1):60-63.
[9] Lach K, Gharpuray-Pandit D, Franko A, Brenn T. Distant metastasis from morphologically low-grade spiradenocarcinoma: A report of two cases. J Cutan Pathol. 2023;50(7):642-646.
[10] Wagner K, Jassal K, Lee JC, Ban EJ, Cameron R, Serpell J. Challenges in diagnosis and management of a spiradenocarcinoma: A comprehensive literature review. ANZ J Surg. 2021;91(10):1996-2001.
[11] Tian Q, Hu Y, Lu Y. Clinicopathological characteristics of 11 cases with spiradenoma: A rare adnexal tumor. Am J Clin Exper Med. 2024;12(2):08-12.
[12] Held L, Ruetten A, Saggini A, Kempter W, Tiedke C, Weber-Kuhn S, et al. Metaplastic spiradenocarcinoma: Report of two cases with sarcomatous differentiation. J Cutan Pathol. 2021;48(3):384-89.
[13] Ahmed MB, Elzawawi KE, AlHammadi A, Al-Malki A, Petkar M, Al Lahham S, et al. A malignant spiradenoma of the forehead: A case report and literature review. Oxf Med Case Reports. 2024;2024(3):omae016.
[14] Kundu A, Mondal TR, Ghosh S, Dey S, Mahapatra AS. A rare case of malignant eccrine spiradenoma mimicking carcinosarcoma. Indian J Pathol Microbiol. 2021;64(2):398-401.

PARTICULARS OF CONTRIBUTORS:
1. Associate Professor, Department of Pathology, MMU, Mullana, Ambala, Haryana, India.
2. Professor, Department of Pathology, MMU, Mullana, Ambala, Haryana, India.
3. Postgraduate Resident, Department of Pathology, MMU, Mullana, Ambala, Haryana, India.

NAME, ADDRESS, E-MAIL ID OF THE CORRESPONDING AUTHOR:
Dr. Fiza Chopra,
781/1, Gobindpura, Manimajra, Chandigarh-160101, India.
E-mail: drfizachopra@gmail.com

PLAGIARISM CHECKING METHODS: [Jain H et al.]
- Plagiarism X-checker: May 17, 2024
- Manual Googling: Jun 15, 2024
- iThenticate Software: Jul 10, 2024 (8%)

ETYMOLOGY: Author Origin

EMENDATIONS: 6

AUTHOR DECLARATION:
- Financial or Other Competing Interests: None
- Was informed consent obtained from the subjects involved in the study? No
- For any images presented appropriate consent has been obtained from the subjects. No

Date of Submission: **May 17, 2024**
Date of Peer Review: **Jun 14, 2024**
Date of Acceptance: **Jul 11, 2024**
Date of Publishing: **Aug 01, 2024**