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Case Report

Malignant hidradenoma of the nasal tip mimicking basal cell carcinoma: A diagnostic pitfall

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Abstract

Malignant hidradenoma is a rare eccrine sweat gland tumor, most commonly occurring in the head and neck, followed by the extremities; however, involvement of the nasal tip is exceptionally uncommon. These tumors typically present as slow-growing, painless nodules and can mimic more common cutaneous malignancies, leading to diagnostic challenges. We report an 81-year-old female with a large, cauliflower-like mass over the nasal tip persisting for 3–4 years, clinically suspected as basal cell carcinoma due to its location and appearance. The patient underwent wide local excision with pedicled flap reconstruction, and histopathological evaluation confirmed malignant hidradenoma, with no nodal or distant metastasis. The unusual site and deceptive clinical appearance of this tumor emphasize the importance of including malignant hidradenoma in the differential diagnosis of nasal lesions. Early recognition, histopathological confirmation, and complete excision are crucial for reducing recurrence and ensuring optimal management.

Keywords: Hidradenoma, Malignant; Sweat gland neoplasms; Nose neoplasms; Basal cell carcinoma; Rare cutaneous Adnexal tumor.

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1. Introduction

Malignant Hidradenoma, also known as hidradenocarcinoma, is a rare and aggressive neoplasm of sweat gland origin, accounting for less than 0.001% of all skin tumors and approximately 6% of malignant adnexal neoplasms of eccrine origin.[1] It typically affects individuals over 40 and commonly arises on the scalp, trunk, and extremities. Head and neck involvement is less frequent, and presentation on the nose, especially the nasal tip, is exceedingly rare.[2,3]

These tumors may arise de novo or from preexisting benign hidradenomas.[4] Histologically, malignant hidradenomas are characterized by infiltrative growth, nuclear pleomorphism, increased mitotic activity (more than 4 mitoses per 10 high-power fields), necrosis, and a high Ki-67 proliferation index (>10%).[5] Immunohistochemical studies often aid in distinguishing malignant from benign forms.

Standard treatment involves wide local excision with negative margins, with or without sentinel lymph node biopsy. Despite surgical management, recurrence rates are high, and distant metastases have been reported.[6] Given the functional and aesthetic complexity of the nasal tip, malignant hidradenomas in this region present unique challenges in both oncologic resection and reconstruction.

We report a rare case of Malignant Hidradenoma located at the tip of the nose, highlighting its clinical presentation, histopathologic features, surgical management, and reconstructive considerations.

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2. Case Report

An 81-year-old female presented to the ENT outpatient department with a large, cauliflower-like, pedunculated mass over the tip of the nose (**Figure 1**). The lesion had been gradually increasing in size over the past 3-4 years and had recently ulcerated and started bleeding. The mass had a firm consistency, was non-tender, and mobile in all directions, with no signs of intranasal extension or lymphadenopathy.

3. Investigations

Clinical examination revealed a pink, multi-lobulated, pedunculated mass measuring approximately 6 cm × 5 cm × 4 cm. It extended vertically from the nasal dorsum to the tip and transversely between both the alae, with no adherence to underlying structures (**Figure 1**). The overlying skin was ulcerated in places. Anterior rhinoscopy was normal. No lymphadenopathy was noted. Based on clinical examination, basal cell carcinoma was considered as one of the differential diagnoses.

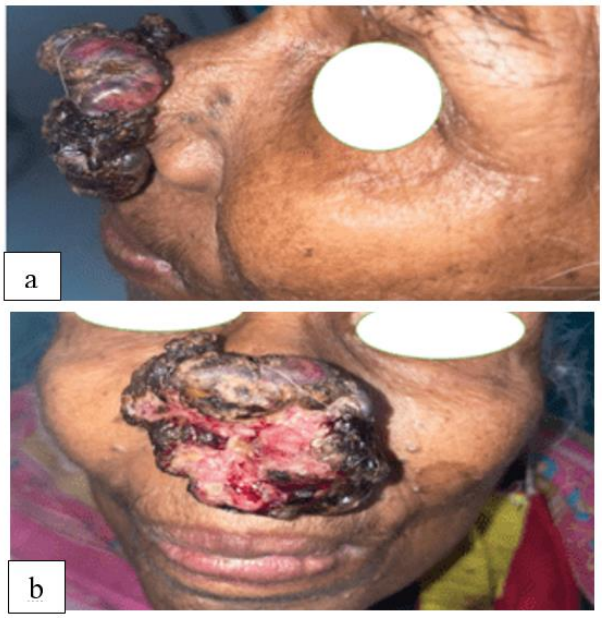

Figure 1: Multiple photographs of the patient showing the lesion from multiple angles

3.1. Treatment

The patient underwent wide local excision of the nasal mass with 1cm tumor-free margins. As per the size and location of the resultant defect over the nasal tip, a paramedian forehead flap based on the right supratrochlear artery was planned. The flap was raised in the subgaleal plane and inset into the nasal defect. The pedicle was divided at three weeks, and minor revisions were performed for contouring (**Figure 2**). The patient healed well with satisfactory aesthetic and functional results. No recurrence was noted on short-term follow-up.

Figure 2: Operative and postoperative photograph

4. Histopathology

Histopathological examination revealed a dermal-based tumor composed of nodular lobules and trabeculae of epithelial cells with moderate to marked nuclear pleomorphism and increased mitotic activity. Ductal differentiation with the area of necrosis was noted. The tumor showed an infiltrative growth pattern. Resection margins were tumor-free. The features were consistent with Malignant Hidradenoma (**Figure 3**). Immunohistochemistry was done outside, which showed eccrine differentiation.

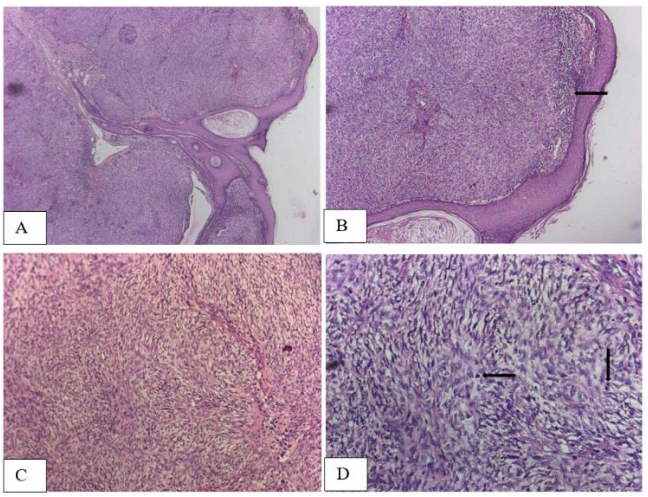

Figure 3: Histopathology of tumor. (H & E stain); **A):** Tumor cells seen arranged in nodules. (H&E, 40); **B):** Tumor cells seen infiltrating the superficial dermis with overlying thinned out epidermis, marked by the black arrow. (H&E, 100); **C):** Oval to spindled mildly pleomorphic cells arranged in sheets, showing vesicular nuclei and a moderate amount of pale cytoplasm. (H&E, 200); **D):** Mitotic figures seen marked by Black arrow (H&E, 400)

5. Discussion

Malignant Hidradenoma, also known as hidradenocarcinoma, is a rare and aggressive adnexal tumor that arises predominantly from eccrine sweat glands.[7] These tumors account for a small fraction of all cutaneous sweat gland neoplasms and often present diagnostic and therapeutic challenges due to their rarity and clinical overlap with other skin malignancies.

Our patient's presentation with a longstanding nodular lesion is consistent with the natural history of malignant hidradenomas, which tend to grow slowly over months or years before becoming clinically apparent or symptomatic.[7,8] This indolent course frequently leads to delayed diagnosis, often after the lesion has increased in size, ulcerated, or developed features suggestive of malignancy. In many cases, these tumors may be initially misdiagnosed as benign entities such as cysts, lipomas, or benign hidradenomas, underscoring the importance of maintaining a high index of suspicion when evaluating persistent or enlarging skin nodules.

Clinically and histologically, Malignant Hidradenomas can mimic other cutaneous malignancies, including basal cell carcinoma, squamous cell carcinoma, and Merkel cell carcinoma, as well as metastatic carcinomas from other sites.[8] Ulceration and rapid growth can especially obscure the diagnosis. In our case, the clinical differential diagnosis included basal cell carcinoma due to the lesion's appearance and chronicity. Its pathogenesis is not fully elucidated, but it is believed to involve the malignant transformation of benign eccrine hidradenomas through the accumulation of genetic alterations, including mutations in TP53, PIK3CA, and cell cycle regulatory genes.[9,11]

Histopathological examination remains the gold standard for diagnosis, where features such as infiltrative tumor borders, perineural invasion, vascular invasion, and a high mitotic index distinguish malignant hidradenomas from benign counterparts.[9] In our case, perineural invasion and vesicular invasion were not present; however, a high mitotic index and infiltrative tumor borders favoured the diagnosis. Immunohistochemistry supported eccrine differentiation, showing positivity for EMA, CEA, and cytokeratin, helping to rule out other cutaneous malignancies. Genetic studies, although not performed in our case, can aid in the diagnosis of ambiguous lesions and provide insight into tumor biology.

The biological behavior of malignant hidradenomas is variable. Although these tumors are locally aggressive, with a propensity for recurrence following excision, the incidence of distant metastases is relatively low but clinically significant when present.[9] Common sites of metastasis include regional lymph nodes, lungs, and bones. Factors associated with poor prognosis include deep tissue invasion, lymphovascular involvement, perineural invasion, and high mitotic rate.[9] Given these risks, thorough staging investigations and long-term follow-up are essential components of management.

Surgical excision with wide, tumor-free margins remains the mainstay of treatment, with adjuvant radiotherapy considered in cases of recurrence or high risk.[10,12] Margin status correlates closely with recurrence risk, underscoring the importance of meticulous surgical technique and intraoperative margin assessment whenever feasible. The role of adjuvant radiotherapy is not well defined but may be considered in cases with positive margins, perineural invasion, or recurrent disease.[10,12] Chemotherapy and targeted therapies have not been extensively studied in this tumor due to its rarity and lack of clinical trials. Emerging reports suggest potential benefits of systemic treatments in metastatic or unresectable cases, but the evidence remains anecdotal.

Our case highlights several key clinical and pathological features of Malignant Hidradenoma: prolonged lesion duration, clinical mimicry of other skin cancers, histological evidence of malignancy, and the imperative for wide surgical excision. Given the lack of established guidelines, reporting such cases adds to the collective understanding and may eventually inform standardized approaches.

6. Conclusion

Malignant hidradenoma is an uncommon and diagnostically challenging adnexal tumor that may clinically mimic more common cutaneous malignancies such as basal cell carcinoma or squamous cell carcinoma. The present case is unique due to its prolonged indolent course, deceptive clinical appearance, and eventual confirmation as a rare Malignant Hidradenoma on histopathology. This highlights the importance of maintaining a high index of suspicion for adnexal malignancies in persistent or atypical skin nodules, given their rare incidence. Early biopsy and meticulous histopathological evaluation are crucial for accurate diagnosis. Wide local excision with negative margins remains the primary treatment, and vigilant long-term follow-up is vital due to the high risk of local recurrence and potential for metastasis. Documentation of such rare presentations contributes valuable insight to the limited existing literature and may help evolve standardized guidelines for diagnosis and management.

7. Source of Funding

None.

8. Conflict of Interest

None.

References

1. Gauerke S, Driscoll JJ. Hidradenocarcinomas: A Brief Review and Future Directions. *Arch Pathol Lab Med*. 2010;134(5):781–5. https://doi.org/10.5858/134.5.781.

2. Sinhasan SP, Harthimath BC, Sylvia MT, Bhat RV. "Metastatic malignant nodular hidradenoma": A rare case report with review of literature. *Clin Cancer Investig J*. 2015;4:651–4. https://doi.org/10.4103/2278-0513.164747.
3. Nongkynrih A, Kamboj K, Dhull AK, Kaushal V. Miraculous response to radiotherapy in a rare case of malignant nodular hidradenoma nose. *J Cancer Prev Curr Res*. 2018;9(3):97–9. https://doi.org/10.15406/jcpcr.2018.09.00328.
4. Agarwal A, Agarwal P, Anand A, Sagar M, Bhalla S, Agrawal M, et al. Nodular Hidradenocarcinoma, Trichelemmal Carcinoma and Squamous Cell Carcinoma with Clear Cell Changes: Pitfalls of Biopsy Diagnosis of Skin and Adnexal Tumours. *Clin Pathol*. 2021;14:2632010X211033840. https://doi.org/10.1177/2632010X211033840.
5. Nandeesh BN, Rajalakshmi T. A study of histopathologic spectrum of nodular hidradenoma. *Am J Dermatopathol*. 2012;34(5):461–70. https://doi.org/10.1097/DAD.0b013e31821a4d33.
6. Gauerke S, Driscoll JJ. Hidradenocarcinomas: A Brief Review and Future Directions. *Arch Pathol Lab Med*. 2010;134(5):781–5. https://doi.org/10.5858/134.5.781.
7. Malignant nodular hidradenoma. *J Am Acad Dermatol*. 2011;64(2):AB125. https://doi.org/10.1016/j.jaad.2010.09.510.
8. Maiti T, Somanna S, Devi BI, Unchagi A, Shukla D. Malignant nodular hidradenoma of scalp. *J Neurosci Rural Pract*. 2014;5(4):423–5. https://doi.org/10.4103/0976-3147.140011.
9. Soni A, Bansal N, Kaushal V, Chauhan AK. Current management approach to hidradenocarcinoma: a comprehensive review of the literature. *Ecancermedicalscience*. 2015;9:517. https://doi.org/10.3332/ecancer.2015.517.
10. Nakazawa T, Kondo T, Sato E, Motosugi U, Niu D, Mochizuki K, et al. Subcutaneous porocarcinoma clinically presenting as a soft tissue tumor. *J Cutan Pathol*. 2015;42(11):897–902. https://doi.org/10.1111/cup.12576.
11. Souvatzidis P, Sbano P, Mandato F, Fimiani M, Castelli A. Malignant nodular hidradenoma of the skin: report of seven cases. *J Eur Acad Dermatol Venereol*. 2008;22(5):549–54. https://doi.org/10.1111/j.1468-3083.2007.02504.x.
12. Nazarian RM, Kapur P, Rakheja D, Piris A, Duncan LM, Mihm MC Jr, et al. Atypical and malignant hidradenomas: a histological and immunohistochemical study. *Mod Pathol*. 2009;22(4):600–10. https://doi.org/10.1038/modpathol.2009.18.

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