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Case Report

A rare case report on nodular hidradenoma

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ABSTRACT

Nodular hidradenoma is a rare form of sweat gland tumour characterised by diverse clinical and histopathological features, which can make diagnosis challenging. In this report, we describe the case of a 26-year-old male patient who presented with painless scalp swelling. The rarity of nodular hidradenoma in males, as well as its importance in the differential diagnosis, are highlighted in this case. The patient underwent diagnostic evaluation, including ultrasound, CT-brain, and fine needle aspiration cytology, all of which confirmed the diagnosis. Surgical excision with tumor free margins and flap reconstruction were performed, leading to a successful outcome without recurrence at the 6-month follow-up. This case emphasises the importance of careful evaluation, appropriate surgical management, and vigilant follow-up in cases of nodular hidradenoma to minimise recurrence rates and ensure optimal patient care.

Keywords: Nodular hidradenoma, Skin tumour, Sweat gland

INTRODUCTION

Nodular hidradenoma, also known as eccrine acrospiroma or clear cell hidradenoma, is a type of dermal adnexal tumour that commonly develops in the head and neck regions or extremities.[1] The origin of this tumour has been suggested to be either apocrine or eccrine, and it has been reported to exhibit both decapitation secretion, which is typically associated with an apocrine origin, and ultrastructural features that suggest eccrine differentiation.[2] Although most nodular hidradenomas are benign, they may recur after inadequate excision. Typically, these tumours consist of solid and cystic areas containing various types of cells, such as clear, poroid, squamoid, and, in rare cases, mucinous cells.[1,3] Usually, prominent cytological atypia, mitosis, and necrosis are absent.

Nodular hidradenomas occurring in breast tissue are extremely rare and can be misdiagnosed as primary breast carcinoma by physicians and pathologists The most frequent histological appearance typically shows a combination of solid and cystic components, featuring characteristic clear cells alongside cells displaying eosinophilic cytoplasm.[4] Based on the literature, limited data have been published on nodular hidradenoma in English. In addition, this rare tumour has only been reported in 30-35 case studies and a few recent publications.[2,5-8]

Herein, we present the case of a 26-year-old male with a history of pain and swelling over the scalp for 2 years which was later diagnosed as a nodular hidradenoma.

CASE REPORT

A 26-year-old male, originally from Bihar and a migrant, presented with painless, progressive swelling over the scalp that persisted for the past two years. On local examination, a swelling measuring 3×3 cm was observed over the left frontoparietal region. The swelling had a smooth surface, showed hair loss, was non-tender, had a

solid cystic consistency, was non-pulsatile, and lacked a cough impulse.

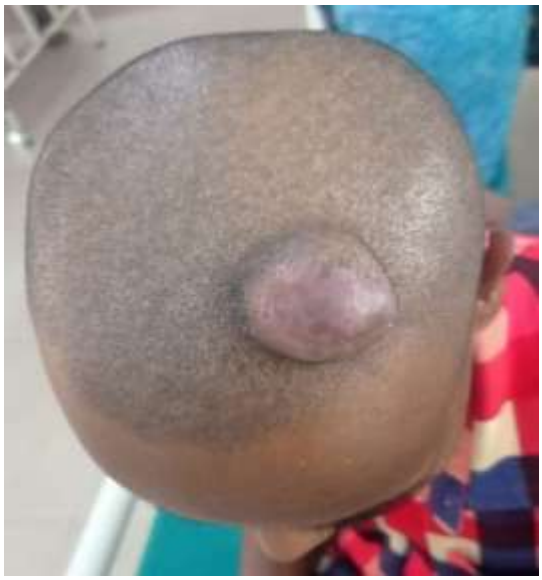

Figure 1: Patient during admission.

Investigations

Ultrasonography (USG) revealed a solid cystic lesion measuring 3×2.5 cm over the left parietal region. Further evaluation with CT showed a dense soft tissue lesion measuring 3×2.6 cm in the left frontal region without intracranial extension. Fine needle aspiration cytology (FNAC) findings were suggestive of an anexal lesion.

Figure 2 (a and b): Peri-operative procedure demonstrating local excision with 1 cm.

Treatment

The patient underwent wide local excision, which included a 1 cm clearance margin, in addition to rotational flap reconstruction.

Histopathological examination

Histopathological examination of the excised specimen revealed features suggestive of a nodular hidradenoma. The margins all around were free from the tumour.

Figure 3 (a and b): Wide local excision followed by flap reconstruction and rotation.

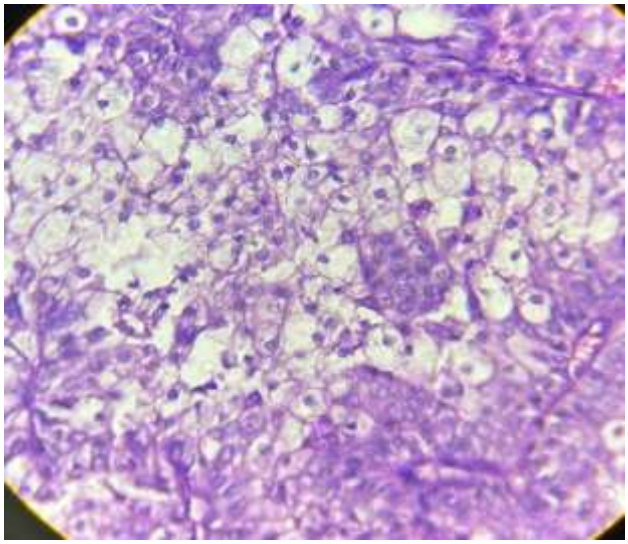

Figure 4: Histopathological examination specimen with presence of nodular hidradenoma.

Figure 5: 6-month follow-up after wide local excision and removal of nodular hidradenoma.

Postoperative course

The patient had an uneventful postoperative course and was discharged after a 5-day hospital stay. A follow-up examination 6 months post-surgery showed minimal scar alopecia and no clinical signs of recurrence.

DISCUSSION

Nodular hidradenoma, a tumour of the sweat glands that is infrequently encountered, typically affects individuals aged between the 4th and 8th decades, with a higher incidence among females. The tumour is primarily present in the neck and head region, trunk, and extremities and typically appears as a painless solitary mass with firm consistency. The diagnostic challenges posed by this tumour arise from its variable clinical presentation and rarity, which can lead to confusion with other lesions such as dermatofibrosarcoma protuberans, leiomyoma, follicular cysts, trichilemmoma, and metastatic renal cell carcinoma.[4,5]

Histologically, nodular hidradenoma exhibits a diverse array of patterns, although it generally appears as a well-defined, unencapsulated tumour primarily found in the dermis. This tumour consisted of both solid and cystic regions of varying degrees.[3] The solid component comprises two distinct cell populations: one with small, centrally located dark nuclei in clear cytoplasm and the other with round, fusiform, or polygonal cells featuring round or oval vesicular nuclei and eosinophilic cytoplasm. Immunohistochemical analysis, while not typically necessary, may reveal the expression of AE1/AE3, EMA, and CEA markers.[3,8]

Local recurrence is a common occurrence; however, malignant transformation into hidradenocarcinoma is relatively rare. Malignant hidradenoma or hidradenocarcinoma is characterised by poorly defined borders, a substantial size, a sheet-like growth pattern, necrosis, vascular and lymphatic invasion, pleomorphism, and a high mitotic rate.[7] In exceptional cases, nodular hidradenomas may undergo malignant transformation, which is distinguished by necrosis, significant cytological abnormalities, increased mitotic activity including atypical forms, irregular infiltrative borders, vascular invasion, perineural invasion, and/or distant metastasis.[3,9]

Radiological evaluation via ultrasonography and MRI can aid in assessing the lesion; however, a definitive diagnosis is established through histopathological examination of the excised tissue. Surgical excision with tumor free margins remains the cornerstone of treatment with the aim of complete tumour removal while minimising the risk of recurrence. Close postoperative monitoring is crucial for promptly detecting signs of regrowth or complications.[6]

In this case report, we describe an atypical presentation of nodular hidradenoma in a male patient which is considered a rare clinical presentation in males.[10,11] The patient underwent successful wide local excision and flap rotation, which did not result in recurrence. Nevertheless, the recurrence of nodular hidradenoma is relatively common, with reported rates reaching as high as 10%, which is likely attributed to incomplete excision of the tumour.[2]

Our case aligns with the results of previous case reports by Bijou et al, Jaitly et al and Kumar et al.[10-12] In contrast to our patients, the majority of these cases involved females. The significant risk of recurrence and potential for malignancy highlights the importance of employing appropriate treatment strategies. Complete excision of a nodular hidradenoma with wide margins is crucial for preventing local recurrence. However, there is currently a lack of consensus in the literature regarding the optimal excision margins. Further research and clinical guidelines are necessary to establish standardised protocols for surgical management to minimise recurrence rates and enhance patient outcomes.

CONCLUSION

Although rare, nodular hidradenomas present clinical and diagnostic challenges owing to their varied presentations and histological patterns. This case report highlights an atypical presentation of nodular hidradenoma in a male patient, underscoring the importance of considering this tumour, even in less common scenarios. Successful management was achieved through wide local excision with clear margins and flap rotation, resulting in favourable outcomes with no recurrence during follow-up. However, the risk of recurrence remains high, emphasising the need for meticulous surgical techniques and close postoperative monitoring.

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