



ORIGINAL RESEARCH PAPER

Medical Science

CORRELATION OF CYTO-HISTOLOGICAL DIAGNOSIS IN NODULAR HIDRADENOMA- A RETROSPECTIVE STUDY

KEY WORDS: Cytology ; FNAC; Histopathology; Nodular hidradenoma.

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ABSTRACT

Introduction: Nodular hidradenomas are difficult to be diagnosed. The present study aims at finding a co-relation between cytological and histopathological diagnosis.
Methods: All those histopathology diagnosed cases of Nodular Hidradenoma between Jan. 2012 to Dec. 2017, were analyzed for clinical and cytological diagnosis. Histopathological slides along with fresh slides made from paraffin embedded tissues were also reviewed.
Results: Amongst nine cases of Nodular hidradenoma, there were eight adults and one child. The tumors were mainly confined to head and neck area and extremities. On FNAC, in five cases diagnosis of benign skin adnexal tumor was made while in four cases diagnosis of benign adnexal tumors with possibility of Nodular hidradenoma was suggested. Histopathology established the diagnosis of nodular hidradenoma in all the cases.
Conclusions: Nodular hidradenoma are difficult to be diagnosed on FNAC. Histopathology is the answer for final diagnosis.

INTRODUCTION

Nodular hidradenoma is a distinctive neoplasm of eccrine or apocrine ducts, which is thought to arise from the acrosyringium, the distal portion of the duct¹. The tumor often presents as a circumscribed skin colored nodule in the dermis of scalp, trunk and proximal extremities. Rarely, the tumor may be found on hands, feet, eye lids, breast, and vulva. These slow growing tumors are typically seen in age group of 25- 50 years, with female preponderance. The precise diagnosis of nodular hidradenoma on FNAC of these benign skin adnexal tumors is often difficult. For a conclusive diagnosis and confirmation, histopathological examination is essential. In this retrospective study of 6 years, we present nine histopathologically diagnosed cases of nodular hidradenoma. The cytological diagnosis made on FNAC in these cases was reviewed to assess relevance of FNAC in the diagnosis of nodular hidradenoma.

MATERIALS AND METHOD

This retrospective study was carried out in the department of pathology, Dr. B.S.A hospital, Rohini, New Delhi, on all those cases where the final diagnosis of nodular hidradenoma was made on histopathology during Jan.2012 to Dec.2017. There were a total of nine such cases. The data of all these patients was analyzed for age, sex, anatomical location, size and clinical diagnosis. Cytology smears and the diagnosis made on FNA were analyzed. Histopathological slides along with fresh slides prepared from paraffin embedded tissues were also reviewed.

AIMS AND OBJECTIVES

1. To study the morphological features of the tumor including shape, size and site.
2. To study the relevance of FNAC in the diagnosis of nodular hidradenoma.

OBSERVATIONS AND RESULTS

There were total nine cases of nodular hidradenoma during the period of study. Majority of these cases were adults in the age group of 21 to 40 (6 cases). There was only one patient who belonged to pediatric age group whereas 2 cases were in the age group of 41 to 60 years. No patient was older than 60 years. There was a slight female preponderance with 5 cases being seen in females compared to 4 in males. [Table1]. The Tumors were mainly confined to head and neck area (6 cases) [Fig1] and extremities (2 cases). The series had one case of nodular hidradenoma in vulva

region. Clinical diagnosis in 4 cases was sebaceous cyst whereas in 5 cases the clinician suspected soft tissue tumors. Diagnosis of primary skin adnexal tumor was not considered clinically in any of these cases.

Table 1: Clinical and Cyto-Pathological Profile of the Patients (n=9)

Age Group	Age in Years/ Sex	Clinical Presentation	Clinical Diagnoses	Cytopathology
0-20	10 / F	1.5x1 cm, swelling on posterior aspect of thigh	Soft tissue tumor	Benign skin adnexal tumor
21-40	22 / M	1x1 cm, cystic occipital region scalp swelling	Sebaceous cyst	Benign skin adnexal tumor
	25/F	2x2 cm, cystic swelling in vulva	Sebaceous cyst	Benign skin adnexal tumor with possibility of Nodular hidradenoma
	30 / F	1x1 cm, post-auricular firm swelling	Soft tissue tumor	Benign skin adnexal tumor
	33 / M	1.5x1 cm, firm swelling lower part of cheek	Soft tissue tumor	Benign skin adnexal tumor
	34 / F	1.5x1 cm, gluteal region swelling	Soft tissue tumor	Benign skin adnexal tumor with possibility of Nodular hidradenoma.
	35 /M	2.5x2 cm, axillary cystic swelling	Sebaceous cyst	Benign skin adnexal tumor
41-60	42 / M	1x1 cm, cystic cheek swelling	Sebaceous cyst	Benign skin adnexal tumor with possibility of Nodular hidradenoma
	60 / F	1x1 cm, scalp firm swelling	Soft tissue tumor	Benign skin adnexal tumor with possibility of Nodular hidradenoma

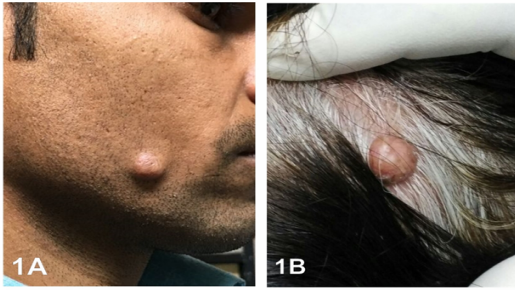


Fig1: Clinical photographs of Patients with Nodular Hidradenoma (1A, Cystic swelling on Cheek 1x1 cm; 1B Firm Scalp swelling 1x1 cm.)

On FNAC, in 5 out of nine cases diagnosis of benign skin adnexal tumor was made, while in 4 of the cases of benign skin adnexal tumor, with the possibility of nodular hidradenoma was suggested. [Fig 2] Amongst these 4 cases, the first case was that of a female patient aged 25 years who presented with a swelling of 2 x 2cm in subcutaneous location in vulva. The FNAC smears were moderately cellular and showed basaloid cells in sheets and clusters with occasional papillaroid structures. A few cells were round to polygonal with vacuolated cytoplasm admixed in the basaloid cells.

In second case of a 34 year old female, having a swelling in the gluteal region, FNAC yielded granular aspirate smears from which showed clusters of basaloid cells. Another population of cells which were round to oval with vacuolated cytoplasm was also seen. In the third case of a 42 year old male with swelling on the left cheek, FNAC smears were moderately cellular and showed small round cells in clusters. Cells had scanty cytoplasm and darkly stained nucleus. A few polyhedral shaped cells were also present in the periphery having clear cytoplasm. In fourth case of a 60 year old female with scalp swelling, FNAC showed basaloid cells with scanty cytoplasm, clustered in papillaroid pattern, along with cells having vacuolated cytoplasm

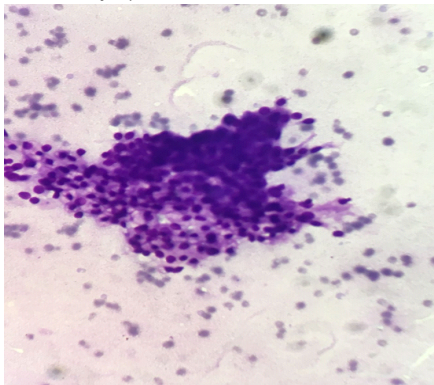


Fig 2: FNAC Smear (Giemsa Stain 40x10 X) showing dual population of cells consisting of basaloid cells and polyhedral cells with clear cytoplasm

Excision biopsy and histopathology established the diagnosis of nodular hidradenoma in all the cases [Fig3] and [Fig4].

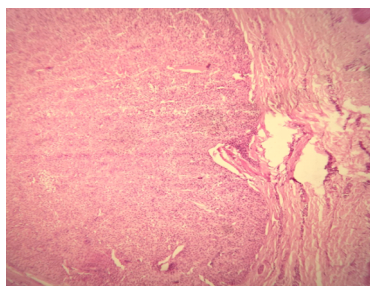


Fig 3: Histopathological section (H&E Stain 10x10 X) showing circumscribed tumor located in the dermis as epithelial lobule.

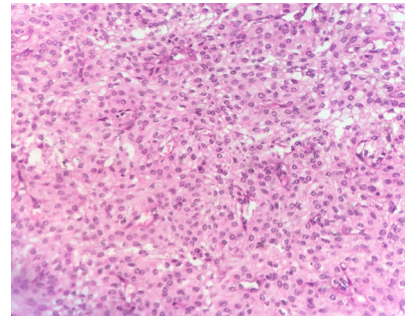


Fig 4: Histopathological section (H&E stain 10x40 X) showing two types of cells; Polygonal cells with rounded nucleus and basophilic cytoplasm and Round cells with clear cytoplasm.

DISCUSSION

Nodular hidradenoma was first described by Liu in 1949 as clear cell papillary carcinoma of skin². Lever et al³ in 1952, in their retrospective study of twenty years, described ten cases of these rare tumors. Eight of these ten cases were females. The age of the patients ranged from 14-75 years. These very slow growing tumors were present for 1-5 years at various locations in scalp, neck, arm, leg, vulva and pubic region. Nine of those cases presented as solid nodule whereas one as cystic lesion. Seven of those ten cases had covered intact skin whereas in 3 cases there was minimal serous discharge. Hernández-Pérez E et.al⁴ in their large retrospective study spanned over a period of 10 years also found that nodular hidradenomas were more common in women (ratio of 1.7 to 1). The average age in their series was 37.2 years, and tumors were located mainly on the head. Subsequent literature by different authors also reaffirmed these slow growing intradermal nodular tumors to have predilection for head and neck region and extremities^{5,6}. In our series, tumor was located in head and neck region in 6 cases, in extremities in 2 cases and in vulva in 1 case. All these cases were asymptomatic with intact skin with size of lesion ranging from 0.5 -2 cm. In our study the age ranged from 10 years to 60 years with mean age of 32.3 years. There was a slight female preponderance with 5 out of 9 patients being females. Similar preponderance has also been reported by many authors^{3,7}. The tumor is more common in adults than in children⁸. There was only one case in pediatric age group in the series. Nodular hidradenomas are solid cystic tumors which generally do not give an impression of being cystic clinically⁹. Nandeesh et.al. in their study of 15 cases of nodular hidradenoma, found most of these tumors to be solitary, circumscribed solid/ cystic in nature¹⁰. Similar observations were also seen by other authors¹¹. In our study four cases had cystic consistency. The clinician made a provisional diagnosis of sebaceous cyst in those cases.

Nodular hidradenoma are cutaneous tumors which are often misdiagnosed on cytology. Cytological diagnosis of nodular hidradenoma is rarely reported in the literature. Gottschalk-Sabag S and Glick T claimed to be the first to diagnose nodular hidrademona on FNAB in 1996¹². However, most cases of nodular hidradenoma are misdiagnosed, inconclusive, or misinterpreted on FNAC¹³. In our series, among the nine cases of nodular hidradenoma, FNAC failed to give final opinion in 5 cases. Cyto-pathologist made a diagnosis of benign skin adnexal tumor in these cases. In remaining four cases, benign skin adnexal tumor with possibility of nodular hidradenoma was made.

There is a limited literature on cytological features of this tumor. According to Kim et al⁹ and Punia et al¹³, these tumors show sheets and clusters of small basaloid cells, dark nucleus with scanty to vacuolated cytoplasm. In our series, the cytological features identified were similar to the ones reported by Kim et al.⁹ and Punia et.al.¹³. FNAC in our patients diagnosed as skin adnexal tumor with possibility of nodular hidradenoma revealed having dual population of cells present as sheets, clusters and papillaroid pattern..

Histopathological findings of nodular hidradenoma may have a varied picture. The tumor is composed of epithelial lobules located

in the dermis. Within these lobulated masses tubular lumina of various sizes are present. These Lumina are lined by cuboidal cells or by columnar secretory cells. There are often large cystic spaces containing eosinophilic homogenous material⁶. In solid portions there are two populations of cells. One type is polyhedral with round nucleus and basophilic cytoplasm. The other type is round nucleus and contains clear cytoplasm^{3,14,15}.

CONCLUSION

Nodular hidradenoma is an uncommon tumor which is usually seen in head and neck region and extremities. Morphologically, in our series, 5 of the cases were located in head and neck region and presented as firm swellings with size varying from 0.5 to 2 cms. The overlying skin was intact in all the cases. This study reaffirms that this tumor is usually seen in adults and is rare in pediatric age group. Typically, this slow growing tumor affects females more often than males. The clinical diagnosis is often not possible in such situations. Conclusive diagnosis of nodular hidradenoma on cytology is also very difficult and the tumor is usually reported as benign skin adnexal tumor. Histopathology is the answer for final diagnosis of nodular hidradenoma.

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