Nodular hidradenoma of the breast: A case report with literature review

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Abstract Nodular hidradenoma or clear cell hidradenoma is a rare skin adenexal tumor which arises from eccrine sweat glands. Skin adenexal tumors situated in the breast parenchyma are still very rare and is one of the differential diagnoses of breast tumors. Failure to identify its morphologic features may lead to a mistaken diagnosis and over treatment. We report a case of breast lump, in a 40-year-old lady, which was diagnosed clinically as a malignant breast lump. Final diagnosis of nodular hidradenoma was made only after excision biopsy as fine needle aspiration cytology was inconclusive.

Keywords Nodular hidradenoma · Adenexal tumor · Carcinoma breast

Introduction

Nodular hidradenoma (NH) or clear cell hidradenoma is a rare skin adenexal tumor arising from eccrine sweat glands with no site preference [1, 2]. It occurs in the nipple and the subareolar region of breast and is one of the differential diagnoses for breast tumors [2, 3]. We report a case of nodular hidradenoma of left breast which was treated with local excision and pertinent literature is reviewed to create awareness amongst the clinicians and pathologists.

Case report

A 40-year-old lady presented to the surgical outpatient department with painless lump in the left breast of two years duration. The lump was not associated with pain, fever, nipple discharge, retraction or trauma. There was no history of familial carcinoma of the breast. Clinical examination revealed a single lump, measuring 5×4 cm in both outer quadrants of the left breast (Fig. 1). The lump was firm, nontender, multinodular and projecting above the surface of the skin. It was free from the deeper structures. Nipple and areola were normal. Ipsilateral axillary lymph nodes were not enlarged. Clinically, diagnosis of carcinoma breast was made and fine needle aspiration cytology (FNAC) was performed. Report was inconclusive. Rests of the investigations were within normal limits. The patient had undergone excisional biopsy of the lump. The histopathological examination of lesion demonstrated benign appendageal tumor of eccrine sweat gland origin with features of solid and cystic nodular hidradenoma (Fig. 2). The tumor was not mitotically active. A few dilated breast ducts and acini were seen in addition. The postoperative course was uneventful. The patient is free from local recurrence after twelve months follow up.

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Discussion

Nodular hidradenoma is a rare tumor of the skin which arises from distal excretory ducts of eccrine gland and it is also known as eccrine acrospiroma, clear cell hidradenoma and solid-cystic hidradenoma [1, 4, 5]. Commonest sites of origin of NH are face, upper extremity, axilla, trunk, thigh, scalp and pubic region [1, 5]. NH of breast is very rare and few cases have been reported in English literature [1–3, 6–11]. It occurs in the nipple and subareolar region in more than fifty percent of cases [1, 2]. Breast NH shows features similar to those occurring elsewhere in the body [1]. It mainly presents as a slowly growing solitary, nodular swelling of 0.5 to 2 cm size, rarely may grow larger. It is adherent to the skin which sometimes becomes ulcerated and may lead to discharge of serous material [1, 5]. It may originate

from skin adnexal glands or mammary ducts [2]. Clinical features of NH extracted from reviewed literature are summarized in Table 1. Most of the patients of NH are females, from fourth to eighth decade of their life. Predominant clinical presentation is painless lump in the breast, occasionally associated with pain or nipple discharge. It is misdiagnosed preoperatively as benign breast disease or carcinoma of the breast. Usually, NH is difficult to diagnose cytologically [3, 6–7, 10–11]. In order to confirm the diagnosis of NH trucut or excision biopsy is required. Complete cure can be achieved following local excision of the tumor [1, 4–5]. It recurs very rarely in case of inadequate excision [10]. Malignant transformation of NH is observed in 5 % of the cases. Histopathologically, the tumor is well circumscribed and shows lobulated masses in the dermis. The tumor is composed of solid as well as cystic portion. Cystic

Fig. 1 Photograph showing multinodular tumor mass involving skin and projecting above the surface of skin of the breast

Fig. 2 Tumor showing lobulated masses composed of clear cells and small lumina (H and E, X 100)

Table 1 Various clinical presentations of nodular hidradenoma as described by different authors [1–3, 6–11]

First author/ Year of publication	Age (years)/sex	Clinical Presentation	Clinical diagnosis
Kumar / 1996	Elderly /female	Breast lump	Ca breast
Domoto / 1998	58 / female	Breast mass	NR
Domoto / 1998	44/male	Subareolar nodule	Ca breast
Honma / 2002	77 / male	Subareolar nodule	NR
Kim / 2005	41 / female	Breast lump	Uncertain
Illie / 2006	NR / female	Breast lump	Ca breast
Illie / 2006	NR/ male	Breast lump	Ca breast
Dhingra / 2007	60/ female	Breast lump	Benign cyst
Kazakov / 2007	55 / female	Breast lump	NR
Ohi / 2007	55 / female	Breast lump	NR
Girish / 2007	49 / female	Recurrent breast lump	Duct papilloma
Present case	40 / female	Breast lump	Ca breast

Ca-carcinoma, NR- not reported, NR: Not reported

spaces are of variable size and contain a faintly eosinophilic homogenous material [8]. They are probably of degenerative nature. Lobulated mass shows tubular lumina lined by cuboidal or columnar cells. Solid portion of the tumor has two types of cells-round, polyhedral or fusiform with round nucleus and eosinophilic cells containing clear cytoplasm. There are transitional cells in between. Clear cells contain glycogen [1, 5]. Enzyme histochemical staining of NH reveals presence of phosphorylase and respiratory enzymes like succinic dehydrogenase and diphosphopyridine nucleotide diaphorase. Immunohistochemical reactivity for keratin, EMA, CEA, S-100 protein and vimentin is characteristic [5]. In the present case, carcinoma of the breast was suspected clinically and FNAC could not give any clue regarding diagnosis of nodular hidradenoma. It is concluded that awareness and histopathological confirmation of diagnosis is very essential to treat such a curable and rare benign disease.

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