

CASE REPORT

Adenolipoma of the breast

Fatemeh NILI MD, Parastoo GHANBARI* MD, and Alireza GHANADAN MD

Department of Pathology, Cancer Institute, Imam Khomeini Hospital Complex, Tehran University of Medical Sciences and *Faculty of Medicine, Azad Medical University, Tehran, Iran.

Abstract

Adenolipoma of the breast is an uncommon mammary lesion classified as a hamartomatous lesion, presenting as a soft, mobile and well-defined mass. The typical mammographic findings is of a well-circumscribed lesion containing both fat and soft tissue surrounded by a capsule. Microscopically, adenolipoma exhibits a hamartomatous mixture of ducts and lobules intermingled with adipose and fibroconnective tissue. Enucleation is the standard treatment and recurrences are rare. We report a 29-year-old woman with a mobile, tender and firm mass, 6 x 5 cm, in the upper inner quadrant of the right breast of 1 month duration. Mediolateral mammography images demonstrated a well-defined mass with mixed granular and fat density. Histopathology of the excised mass revealed well-circumscribed lobules of ducts and glandular structures haphazardly embedded in mature fatty tissue. Breast hamartoma should be differentiated from other benign lesions of the breast. Awareness among radiologists and pathologists of this benign lesion would help avoid an incorrect diagnosis and unnecessary intervention.

Key words: hamartoma, adenolipoma, mammography

INTRODUCTION

Adenolipoma of the breast is a rare benign lesion with a variable growth pattern.¹ The exact prevalence of adenolipoma is still unknown but it is detected in 0.16% of mammograms.² Clinically, it is a well-circumscribed lump readily shelled out by surgery.^{1,2} Microscopically, it composed of a variety of mature mammary tissues in which ducts predominate in the centre and lobules occupy the peripheral zone. Although mammographic and histological findings in earlier studies are highly suggestive for the diagnosis of the lesion, this entity is very rare.¹ The disorganized architecture of the lobules and the presence of mature adipose and cartilage tissues as well as smooth muscles are helpful to distinguish this hamartoma from other benign breast lesions that contain fat and from normal breast. Awareness of adenolipoma of the breast, radiologically and histologically, will be helpful to distinguish this lesion from other benign neoplasms. This study is a report of a case and review of the relevant literature.

CASE REPORT

A 29-year-old woman visited a University Hospital clinic in Tehran (Iran) in 2010 due to a movable, tender, firm mass in the upper inner quadrant of the right breast. It was a tender mass that had been slowly growing for one month. On physical examination, the patient appeared well and her vital signs were normal. Palpation of the right breast revealed a firm, painful, well-circumscribed mass measuring 6 x 5 cm. No change in the breast skin or nipple retraction was seen. There was no discharge or inversion of the breast nipple. Axillary lymphadenopathy was not detected. The left breast was normal. Routine laboratory tests showed no abnormalities.

There was no history of other significant medical disease. She had no history of breast screening tests such as mammography or ultrasonography. Family history for the breast or ovarian cancer was negative. She had no history of allergy to medications, usage of tobacco and other significant habitants.

Imaging findings

Ultrasound examination revealed an encapsulated mass with heterogeneous echogenicity measuring 57×23 mm at 11 o'clock, 9 mm away from the overlying skin. Mammography (mediolateral images) demonstrated a well-defined mass with mixed granular and fat density (Fig. 1). No microcalcification was identified.

Pathology

The patient underwent a subcutaneous lumpectomy of the right breast. The tumour grossly appeared as a well-demarcated, firm, completely encapsulated, yellowish-white mass measuring 6×5×4 cm with a smooth external surface. Histopathological examination revealed well-circumscribed lobules of glandular structures intermingled with mature fat tissue in a hamartomatous pattern. The glands were lined by two-layered epithelium with bland nuclei embedded in a fibrous stroma (Figs. 2 & 3). The histopathological findings were in favour of adenolipoma of the breast.

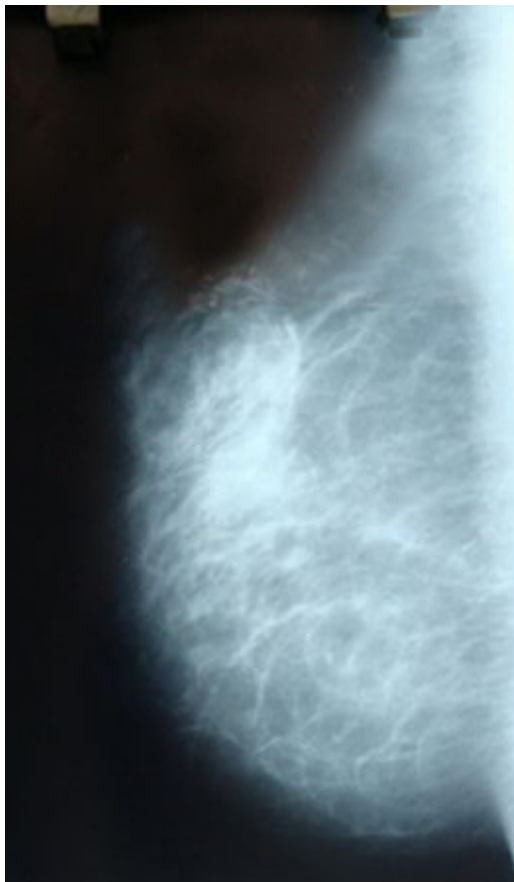


FIG. 1. Mediolateral mammogram shows a well-defined mass with heterogeneous density.

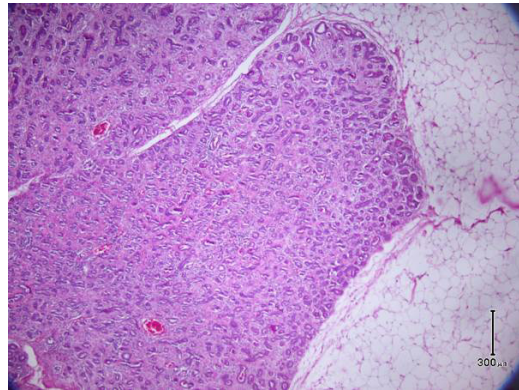


FIG. 2. Well-circumscribed glandular lobules with disorganized arrangement intermingled with mature fat tissue devoid of normal breast lobules.

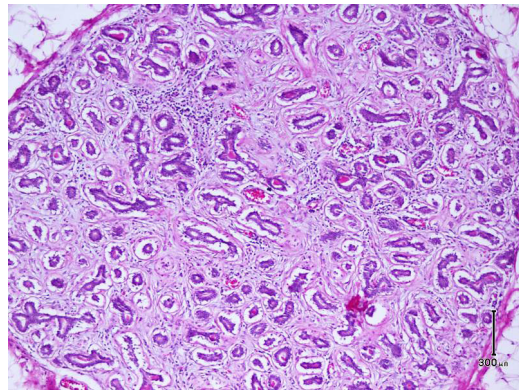


FIG. 3. Compact dense small glands composed of a single layer of epithelium surrounded by myoepithelial component and scantily intervening stroma.

After the operation, patient was discharged with no complications and recommended for follow-up. She had no recurrence of disease at 18 months after surgery.

DISCUSSION

Suggested first in 1945 by Spalding, adenolipoma of the breast is an uncommon lesion variously called fibroadenolipoma, hamartoma or post lactational tumours.³ This hamartoma consists of a disorganized collection of mammary tissues including duct and lobules, fat and fibrous tissue as well as smooth muscles admixed in varying proportions. Adenohibernoma, myoid hamartoma and chondrolipoma represent other rare variants of hamartoma. Adenolipoma is usually a soft, mobile and well-defined mass and can be misdiagnosed as other benign tumours.^{1,2}

Jones *et al* reported their microscopical study of 17 cases of breast hamartomas and reported four different patterns: (1) circumscribed fibrocystic changes with fat, smooth muscle or collagen, (2) fibroadenoma with fat or cartilage, (3) fibroadenoma with lobules and (4) adenolipoma.⁴

The typical mammographic finding of adenolipoma is a well-circumscribed lesion containing both fat and soft tissue surrounded by a capsule.^{5,6} Although mammography and core biopsy are the most important diagnostic tests, excisional biopsy is usually needed to make a definite diagnosis. Microscopically, adenolipoma is composed of a variable mixture of ducts and lobules interspersed with adipose and fibroconnective tissues. The lobules seem disproportionately more numerous than the ducts and do not seem to cluster around the ducts. Given the impression of "breast within breast", the glandular structures are disorganized and haphazardly arranged within lobules in varying sizes.² The fatty tissue constitutes 5-90% of the lesion.⁷ Fibrocystic changes, sclerosing adenosis, and pseudoangiomatous stromal hyperplasia may occur.^{7,8} Ductal hyperplasia was encountered in 27% and adenosis in 70% of a large study.⁶ Smooth muscle may also be seen and cases with marked smooth muscle differentiation are classified as myoid hamartomas.⁹

The histopathological differential diagnosis of adenolipoma includes fibroadenoma and phyllodes tumor. Lobular structure is not a common feature in fibroadenoma and the disorganized arrangement of lobular structures is helpful to distinguish adenolipoma from fibroadenoma. Adenolipoma shows less architectural organization compared to fibroadenoma, which also tends to have a less cellular stroma. Similarly, the stroma in adenolipoma is less cellular than those of phyllodes tumour and cleft-like epithelium-lined spaces are not seen.² Given that adenolipoma histologically resembles normal breast tissue or breast tissue with non-specific benign changes, it is very easy to make a diagnosis of fibroadenoma with knowledge of the clinical and/or mammographical findings.^{2,5}

Comparing to the literature, this case is devoid of smooth muscle and cartilage tissue that seen in myoid hamartoma and chondrolipoma, respectively. Adenohibernoma, a rare variant of breast hamartoma, contains multivacuolated fat cells instead of mature adipose tissue.

Hamartomas are benign, but recurrences

have been noted in about 8% of patients.¹⁰ In 1976, Brebner *et al* reported four cases of adenolipoma among 5000 patients who underwent mammography.⁵ These cases were only visualized in xeromammography and were not clear in mammogram films. Arrigoni *et al* reported ten cases of adenolipoma in patients who underwent surgery for their benign neoplasms of the breast during 30 years.¹¹ Secondary tumours can occur in adenolipoma and coexistent fibroadenoma has been found in 12% of patients.⁶ Harigopal *et al* reported two unusual examples of fibroadenoma arising in adenolipoma.¹² Kronsbein *et al* and Mendiola *et al* reported the possibility of malignant transformation in their studies.^{13,14} Although neoplastic changes in mammary adenolipoma are exceedingly rare, it occurs more in patients older than 50 year of age. Pervatkar *et al* reported invasive ductal carcinoma arising in a mammary hamartoma of a 25-year-old woman, showing that malignancy should be ruled out in mammary hamartoma even in young patients.¹⁵ Adenolipoma is easily mistaken for other benign lesions and the diagnosis of the lesion is merely dependent on radiological and histopathological examination.^{1,2} Enucleation is the standard treatment of the patients with adenolipoma.^{1,2,7,16}

We report this case to draw more awareness to this lesion, to avoid incorrect diagnosis and unnecessary intervention.

REFERENCES

1. Yasuda S, Kubota M, Noto T, *et al*. Two cases of adenolipoma of the breast. *Tokai J Exp Clin Med*. 1992; 17(3-4): 139-44.
2. Tavassoli FA, Devilee P. *Pathology and Genetics: Tumours of the Breast and Female Genital Organs*. Lyon: IRCA press; 2003. p. 103.
3. Spalding JE. Adenolipoma and lipoma of the breast. *Guy's Hosp Rep*. 1945; 94: 80-2
4. Jones MW, Norris HJ, Wargotz ES. Hamartomas of the breast. *Surg Gynecol Obstet*. 1991; 173(1): 54-6.
5. Brebner DM, Cosmann B, Shapiro J. Lipotoma of the breast diagnosed by film and xeromammography. *S Afr Med J*. 1976; 50(18): 685-8.
6. Wahner-Roedler DL, Sebo TJ, Gisvold JJ. Hamartomas of the breast: clinical, radiologic, and pathologic manifestations. *Breast J*. 2001; 7(2): 101-5.
7. Tse GM, Law BK, Ma TK, *et al*. Hamartoma of the breast: a clinicopathological review. *J Clin Pathol*. 2002; 55(12): 951-4.
8. Fisher CJ, Hanby AM, Robinson L, Millis RR. Mammary hamartoma—a review of 35 cases. *Histopathology*. 1992; 20(2): 99-106.
9. Cho JS, Ryu HS, Ro HW, *et al*. Myoid Hamartoma of the breast with synchronous contralateral breast

- cancer: Report of a case. *J breast cancer*. 2010; 13(1): 11-6.
10. Daya D, Trus T, D' Souza TJ, Minuk T, Yemen B. Hamartoma of the breast, an underrecognized breast lesion. A clinicopathologic and radiographic study of 25 cases. *Am J Clin Pathol*. 1995; 103(6): 685-9.
 11. Arrigoni MG, Dockerty MB, Judd ES. The identification and treatment of mammary hamartoma. *Surg Gynecol Obstet*. 1971; 133(4): 577-82.
 12. Harigopal M, Mudrovich SA, Hoda SA, Rosen PP. Secondary tumors in mammary adenolipomas: a report of 2 unusual cases. *Arch Pathol Lab Med*. 2003; 127(3): e151-4.
 13. Krosbein H, Bassler R. [Metaplasias and malignant transformations in hamartomas of the breast]. *Verh Dtsch Ges Pathol*. 1985; 69: 310-5.
 14. Mendiola H, Henrik-Nielsen R, Dyreborg U, Blichert-Torf M, Al-Hariri JA. Lobular carcinoma in situ occurring in adenolipoma of the breast. Report of a case. *Acta Radiol Diagn (Stockh)*. 1982; 23(5): 503-5.
 15. Pervatkar SK, Rao R, Dinesh US, Parameswaraiiah S. Large mammary hamartoma with focal invasive ductal carcinoma. *Indian J Pathol Microbiol*. 2009; 52(2): 249-51.
 16. Sonmez FC, Guzin Z, Yildiz P, Tosuner Z. Hamartoma of the breast in two patients: A case report. *Oncol Lett*. 2013; 6(2): 442-4.