CEOG Clinical and Experimental Obstetrics & Gynecology

Breast capillary hemangioma at the tail of Spencer: a rare entity

A. Bothou[1], I. Grammatikakis[2], N. Evangelinakis[2], C. Eftichiadis[3], G. Iatrakis[1], S. Zervoudis[1]

[1] Rea Maternity Hospital and Technological Educational Institute (TEI), University of Athens, Athens
[2] 3rd Department of Obstetrics and Gynecology, University of Athens, "Attikon" Hospital, Athens
[3] Department of Pathology, General Hospital of Attica (KAT), Athens (Greece)

Summary

A palpable breast lump is a frequent clinical finding and preoperative evaluation varies depending on its localization and characteristics. Vascular tumors are rarely diagnosed especially regarding the tail of Spencer region. In general, they appear oval-shaped with well-circumscribed margins, but their echostructure varies, and it might be quite difficult for the breast specialist to differentiate it from complex cysts, fibroadenomas or some carcinomas. The authors describe a rare location of breast hemangioma with mammographic characteristics that were suspicious for malignancy. There were no identifiable risk factors, no familial history of breast lumps, and patient did not mention the intake of hormonal therapy. The lump was evaluated by mammography and breast ultrasonography, whereas due to the high vascularity of the nodule, the decision not to perform fine-needle aspiration (FNA) was made and an excisional biopsy was performed. The histological result was "breast capillary hemangioma".

Key words: Breast hemangioma; Rare breast lump; Capillary hemangioma; Benign breast lump; Oval-shaped breast lump; Hemangioma.

Introduction

A palpable breast lump is a frequent clinical finding and preoperative evaluation varies depending on its localization and characteristics. Vascular tumors are rarely diagnosed especially regarding the tail of Spencer region [1]. Benign vascular masses are even rare [2], and in most cases these vascular tumors are malignant. The authors report a case of a capillary hemangioma at the tail of Spencer region evaluated by mammography and ultrasonography. Because the atypic and heterogenic aspect of the lump, fine-needle aspiration (FNA) was avoided and an excision biopsy was performed.

Case Report

Patient, 42-years-old, presented to the Breast Unit of the present hospital complaining of a palpable mass over the left breast which appeared a few months ago. The lump was painless, flexible, not blocked, and its margins appeared to be irregular. There were no signs of inflammation of the mass, it did not retract or ulcerate the above skin, whereas the architecture of the breast was not affected. The patient had never performed a mammography. The family history of the patient was free regarding malignancies, while patient's history included dyslipidemia under statins treatment from the last year. The patient underwent a digital mammography, which confirmed the findings of clinical examination. In particular it described a mass with irregular margins that displaces normal parenchyma that was not in contact with pectoral muscles, without any microcalcifications, and normal architecture of the rest of the breast. A lymph node was also enlarged in the left axilla (Figure 1). Since magnification mammography did not delineate the structure of the mass (serous or solid content) and did not add any important

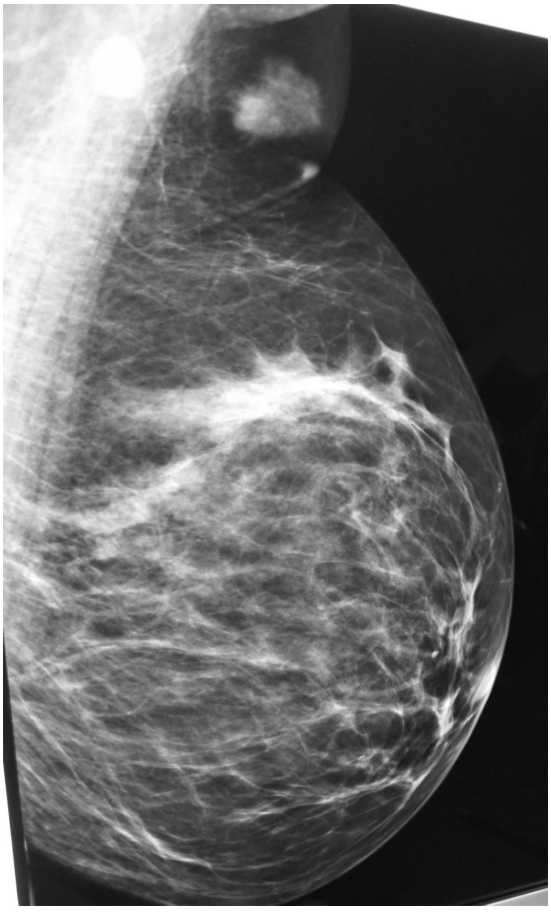

Figure 1. — Mammography of the left breast.

Revised manuscript accepted for publication February 1, 2016

Figure 2. — Magnification mammography of the palpable mass of the left breast.

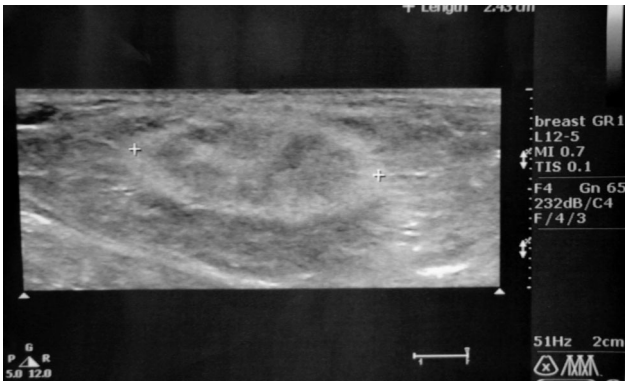

Figure 3. — Ultrasound of the palpable mass of the left breast.

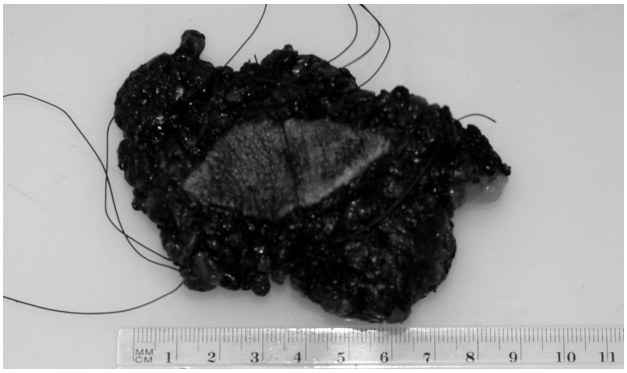

Figure 4. — Macroscopic image of the excised lump.

details (Figure 2), an ultrasound was performed. The ultrasound revealed a 2.4×1.1 cm mass, non-homogenous, hyperechoic with mild rim, significant vascularity with low resistance indices, discernible blood flow inside it, and no acoustic shadowing (Figure 3). Furthermore, despite the irregular margins of the mass, it seemed to be clearly separated from the adjacent parenchyma (well-circumscribed). Due to the high vascularity of the nodule, the decision no to perform FNA was made and an excisional biopsy was performed. Furthermore, despite high probability that the mass was benign, patient was requested to remove the breast nodule with no further investigative procedures.

Grossly an encapsulated globular mass 8×5×4cm was dissected through an elliptical incision over the palpable mass. Nodule was identified over pectoral muscle approximately one cm beneath skin and it was excised with macroscopically free surgical margins (Figure 4). Due to the small size of the excised specimen, no graft was required for the reconstruction, but with glandular flaps. Single sutures were placed in the subcutaneous tissue and subcuticular suture was placed at the skin. Excised nodule was sent to the pathologist. Adequate adherent breast tissue was also removed, though without any apparent macroscopic findings. Hematoxylin and Eosin stain revealed dilated vascular channels congested with erythrocytes lined with endothelial cells (Figure 5). No signs of atypia were identified in all sections studied. Endothelial cells of the blood vessels exhibited eosinophilic cytoplasm, and in some sections there was infiltration of the mass by eosinophils and lymphocytes. Few lumens were thrombosed, hemosiderin was identified, whereas spindle cells were in close proximity and in between there were spaces containing small amount of blood. Thus, the diagnosis of capillary hemangioma was made. No local recurrence is detected two years and seven months after diagnosis and excision.

Discussion

Vascular tumors of the breast are divided in two basic categories: angiosarcomas (that are more common) and hemangiomas [3]. The incidence of hemangiomas of the breast varies between 1.2% (discovered in mastectomies for breast cancer) and 11% (in forensic autopsies) [4, 5]. Hemangiomas are benign tumors that are rarely found in the breast, but sometimes they have been found on microscopy of biopsy material when there are other indications [6, 7]. In the vast majority of hemangiomas, the diagnosis is based on history and clinical examination [8]. However, in case of a breast hemangioma, ultrasonography and biopsy are necessary. Due to their potentially suspicious morphology, there are challenging in diagnosis [9, 10]. Pathologists identify four different types of hemangiomas: perilobular, parenchymal, subcutaneous, and venous. In the present case it was a parenchymal hemangioma composed of dilated blood vessels filled with erythrocytes, and based on their size, it was a capillary hemangioma. Most reported breast hemangiomas are cavernous and many times contain calcifications, which

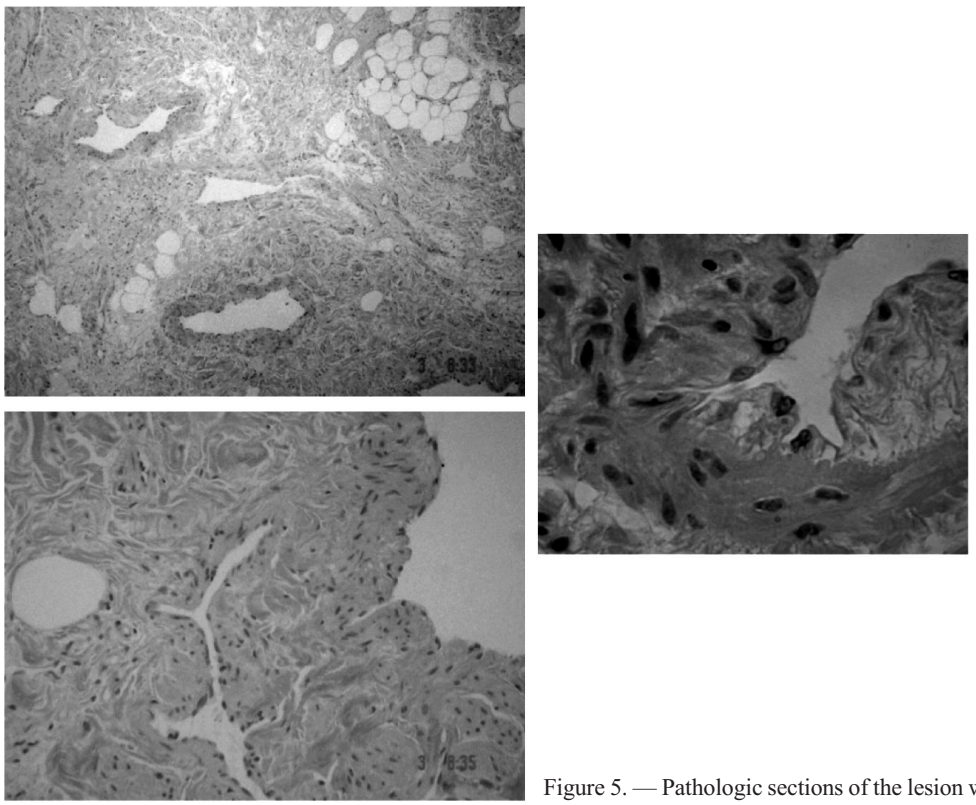

Figure 5. — Pathologic sections of the lesion with Hematoxylin and Eosin stain.

usually represent phleboliths. Usually, capillary hemangiomas of the breast remain clinically occult [11]. In the vast majority they appear oval-shaped with well-circumscribed margins, but their echostructure varies, and it may be quite difficult for the radiologist to differentiate them from complex cysts and fibroadenomas [12-14], or medullary or tubular carcinomas. Many of them are characterized by phleboliths, which appear in mammography as microcalcifications, making interpretation of findings more difficult [12].

Thorough examination of case reports published, reveals that in almost all cases the diagnosis of hemangioma is set after surgical treatment, whereas preoperative diagnosis is extremely rare [15]. Of particular interest is the fact that most hemangiomas appear in mammography as lobular lesions and in ultrasound as hypoechoic masses that in both cases have well-circumscribed edges [16]. Dynamic contrast-enhanced magnetic resonance imaging (DCE-MRI) is a diagnostic tool with high positive and negative predictive values that could be proven very helpful in the preoperative diagnosis of hemangiomas [17]. Although first results appear promising, the high cost and low availability of this exam limit its use.

Considering all types of breast hemangiomas, cavernous is the most common one, with only a few reports in medical literature for the remaining types. The issue of whether these masses should be excised or followed up remains quite controversial. The most important element is to distinguish which of these entities could possibly be angiosarcoma, in order to perform a more aggressive treatment [2, 18]. Of particular interest is the fact that FNA or biopsies and partial excision exhibit increased risk of hemorrhage or hematomas. In the present case, the authors describe a rare location of breast hemangioma with mammographic characteristics that were suspicious for malignancy. There were no identifiable risk factors and patient did not mention the intake of hormonal therapy (which is associated with sudden increase of the dimensions of such lumps).

Conclusion

To summarize, vascular tumors should always be included in differential diagnosis of breast masses, especially when blood flow is identified inside them. In the present case, no phleboliths were identified, that in many occasions help with the diagnosis. In case that biopsy is performed, there is an increased risk of hemorrhage and should therefore a complete excision of the mass should be preferred in order to exclude the possibility of malignancy.

References

[1] Hoda S.A., Cranor M.L., Rosen P.P.: "Hemangiomas of the breast with atypical histological features: further analysis of histological subtypes confirming their benign character". *Am J Surg. Pathol.*, 1992, *16*, 553.

[2] Mariscal A., Casas J.D., Balliu E., Castella E.: "Breast hemangioma mimicking carcinoma". *Breast*, 2002, *11*, 357.

[3] Kim S.M., Kim H.H., Shin H.J., Gong G., Ahn S.H.: "Cavernous haemangioma of the breast". *Br. J. Radiol.*, 2006, *79*, e177-80.

[4] Rosen P.P., Ridolfi R.L.: "The perilobular hemangioma. A benign microscopic vascular lesion of the breast". *Am. J. Clin. Pathol.*, 1977, *68*, 21.

[5] Lesueur G.C., Brown R.W., Bhathal P.S.: "Incidence of perilobular hemangioma in the female breast". *Arch. Pathol. Lab. Med.*, 1983, *107*, 308.

[6] Dener C., Sengul N., Tez S., Caydere M.: "Haemangiomas of the breast". *Eur. J. Surg.*, 2000, *166*, 977.

[7] Kawatra V., Lakshmikantha A., Dhingra K.K., Gupta P., Khurana N.: "A rare coexistence of concurrent breast hemangioma with fibroadenoma: a case report". *Cases J.*, 2009, *15*, 7005.

[8] Metry D. "Evaluation and diagnosis of infantile hemangiomas". *UpToDate*, 2015.

[9] Brodie C., Provenzano E.: "Vascular proliferations of the breast". *Histopathology*, 2008, *52*, 30-44.

[10] Aurello P., Cicchini C., Mingazzini P.: "Hemangioma of the breast: an unusual lesion without univocal diagnostic findings". J. Exp. Clin. Cancer Res., 2001, 20, 611.

[11] Schäfer F.K., Biernath-Wuepping J., Eckmann-Scholz C., Order B.M., Mathiak M., Hilpert F., et al.: "Rare benign entities of the breast-myoid hamartoma and capillary hemangioma". *Geburtshilfe Frauenheilkd.*, 2012, *72*, 412.

[12] Siewert B., Jacobs T., Baum J.K.: "Sonographic evaluation of subcutaneous hemangioma of the breast". *AJR Am. J. Roentgenol.*, 2002, *178*, 1025.

[13] Mesurolle B., Sygal V., Lalonde L., Lisbona A., Dufresne M.P., Gagnon J.H., Kao E.: "Sonographic and mammographic appearances of breast hemangioma". *AJR Am J Roentgenol.*, 2008, *191*, W17.

[14] Adwani A., Bees N., Arnaout A., Lanaspre E.: "Hemangioma of the breast: clinical, mammographic, and ultrasound features". *Breast J.*, 2006, *12*, 271.

[15] Tilve A., Mallo R., Pérez A., Santiago P.: "Breast hemangiomas: correlation between imaging and pathologic findings". *J. Clin. Ultrasound.*, 2012, *40*, 512.

[16] Funamizu N., Tabei I., Sekine C., Fuke A., Yabe M., Takeyama H., Okamoto T.: "Breast hemangioma with difficulty in preoperative diagnosis: a case report". *World J. Surg. Oncol*., 2014, *12*, 313.

[17] Yang L.H., Ma S., Li Q.C., Xu H.T., Wang X., Wang E.H.: "A suspicious breast lesion detected by dynamic contrast-enhanced MRI and pathologically confirmed as capillary hemangioma: a case report and literature review". *Korean J. Radiol.*, 2013, *14*, 869.

[18] Kinoshita S., Kyoda S., Tsuboi K., Son K., Usuba T., Nakasato Y., *et al.*: "Huge cavernous hemangioma arising in a male breast". *Breast Cancer*, 2005, *12*, 231.

Corresponding Author:
S. ZERVOUDIS, M.D.
Rea Hospital
383-Suggrou Avenue
Palaio Faliro 17564 (Greece)
e-mail: szervoud@otenet.gr