

Spontaneous Infarction of Fibroadenoma of Breast: Review of Literature And Series of Three Cases

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ABSTRACT

Fibroadenomas are the most common neoplasms of the breast usually affecting adolescents and young women. Infarction in benign breast lesions is rare and It was first described by Delarue and Redon in 1949. This may occur in various conditions such as pregnancy, lactation, after fine needle aspiration procedure or trauma but Spontaneous infarction of fibroadenomas in the absence of above mentioned causes is exceptionally rare. Herein, we describe a review of fibroadenomas of the breast with two new cases of spontaneous infarction, unrelated to any known risk factor. We conclude that partial spontaneous infarction is a rare event in breast fibroadenomas and may not be associated with any known risk factor. The presence of necrosis on core biopsy or intra-operative frozen section should be cautiously interpreted and is not itself a sign of malignancy.

CASE REPORT

Fibroadenomas are the most common neoplasms of the breast usually affecting adolescents and young women.^{1,2} Fibroadenoma is a benign tumour arising from the epithelium and stroma of the terminal duct lobular unit. Secondary changes include hyalinization, calcification, ossification, myxoid and apocrine or squamous metaplasia, sclerosing adenosis.¹ Infarction in benign breast lesions is rare and It was first described by Delarue and Redon in 1949.³ In Haagensens' review of fibroadenoma, the incidence of spontaneous infarction was 5 out of 1000 cases (0.5%), and 3 of these 5 patients were pregnant or lactating for the first time.⁴ This may occur in various conditions such as^{1,4,5} pregnancy, lactation, after fine needle aspiration procedure or trauma but Spontaneous infarction of fibroadenomas in the absence of above mentioned causes is exceptionally rare. Herein, we describe a review of fibroadenomas of the breast with two new cases of spontaneous infarction, unrelated to any known risk factor.

CASE PRESENTATION

In the present case series two of the cases were diagnosed with subtotal and one with single total spontaneous infarction was discovered (Fig 1 & Fig 2). Treatment was done by local excision and mastectomy was not done, as there was no histological proof of malignancy.

Key Words: Infarction, Fibroadenoma, Breast.

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DISCUSSION

Fibroadenomas (FAs) are the most usual benign tumour of the female breast constituting approximately one-third of all benign breast lesions. They can occur in women of any age, but the peak incidence is seen in second and third decade of life.¹ Diagnosis of fibroadenoma rarely poses a diagnostic dilemma. Spontaneous infarction within fibroadenoma is rare, and associated with pregnancy, lactation or a recent FNA.⁵⁻⁷ Exceptionally, spontaneous infarction may affect multiple fibroadenomas in the same patient⁸, and also be associated with the use of oral contraceptives.⁹ Rarely, it can be seen in young patients without any associated risk factors.

Delaure and Redon, first described spontaneous infarction in fibroadenoma, in 1949. The presence of infarction and necrosis are usually worrying signs in breast pathology although spontaneous infarction can be seen in variety of benign breast lesions including fibroadenoma, phyllodes tumor, lactating adenoma, and intraductal papilloma^{3,10,11} and sporadic cases occurring in patients who are on anticoagulant drugs. The most frequent clinical manifestation is a painful breast lump.

Spontaneous infarction within fibroadenoma occurs frequently during third trimester of pregnancy and lactation, may be because of relative ischemia in hyperplastic tumour tissue. Few authors have hypothesized the possibility of mechanical factors, that

fibroadenoma being a mobile tumour undergoing torsion and ischemia. Newman et al.¹² also found thrombo-occlusive vascular changes as a possible cause of infarction within fibroadenomas. One of the possible explanations is that infarction represents a spectrum of regressive changes that also may include calcification and hyalinization, both of which are much more commonly seen in fibroadenomas.¹³

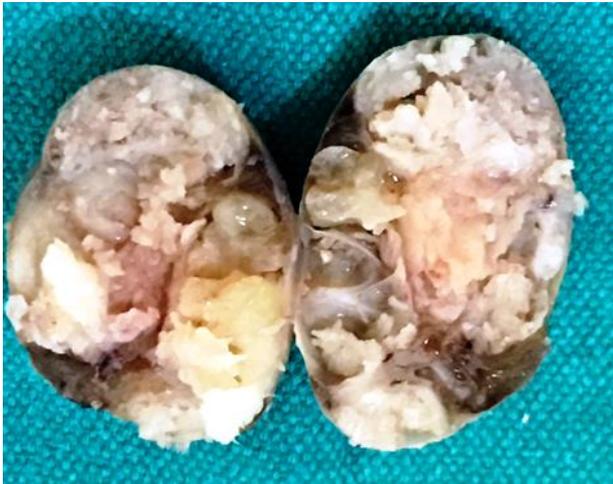


Figure 1: Section of breast fibroadenoma showing areas of necrosis & haemorrhage (Case 1)



Figure 2: Section of breast fibroadenoma showing areas of Necrosis (Case 2)



Figure 3: Section of breast fibroadenoma showing predominant areas of necrosis (Case 3)

The commonest investigation followed for breast lumps is FNAC.^{14,15} The predominant cytopathological features of infarction in a fibroadenoma are plenty of singly scattered round to oval cells, which do not possess any atypical features, many ghost-like epithelial cells in a necrotic background. In malignancy, a confirmed diagnosis should be given only when necrosis and also viable cells with prominent nuclear atypia, nuclear irregularities, prominent nucleoli and mitosis are seen. In case of inflammatory lesion is tuberculous granulomatous mastitis in our country but its differentiation is possible by the presence of epithelioid cell granulomas, multinucleated giant cells, lymphocytes and ZN stain of AFB positivity help in successful diagnosis.[Other commonest differential being duct ectasia, but clinical presentation of subareolar cord like mass helps in the correct diagnosis.¹⁴⁻¹⁸ Histopathology shows abundant areas of ischemic necrosis, haemorrhagic areas with partial or no retain of the architecture of the fibroadenoma. There should be no inflammatory cells or atypical cells. Treatment by local excision is adequate for this lesion and under no circumstances should mastectomy be performed without histological proof of malignancy.^{2-4,6-8,11,12} In spite of these hypotheses the etiology for infarction remains to be a mystery. In the present study too, all the three cases had no inciting insults, which may result in infarction hence diagnosed as spontaneous infarction.

CONCLUSION

We conclude that partial spontaneous infarction is a rare event in breast fibroadenomas and may not be associated with any known risk factor. The presence of necrosis on core biopsy or intra-operative frozen section should be cautiously interpreted and is not itself a sign of malignancy.

REFERENCES

1. Rosen PP. Rosen's breast pathology. 3. Lippincott Williams & Wilkins; 2009.
2. Liu H, Yeh ML, Lin KJ, Huang CK, Hung CM, Chen YS. Bloody nipple discharge in an adolescent girl: unusual presentation of juvenile fibroadenoma. *Pediatr Neonatol*.
3. Majmudar B, Rosales-Quintana S. Infarction of breast fibroadenomas during pregnancy. *JAMA*. 1975;231:963-964. doi: 10.1001/jama.1975.03240210043017. [PubMed] [Cross Ref]
4. Haagensen CD. Diseases of the Breast. Saunders; 1986.
5. Lucey JJ. Spontaneous infarction of the breast. *J Clin Pathol*. 1975;28:937-943. doi: 10.1136/jcp.28.12.937.
6. Fadaei-Araghi M, Geranpayeh L, Irani S, Matloob R, Kuraki S. Breast tuberculosis: Report of eight cases. *Arch Iran Med*. 2008; 11:463-5.
7. Vargas MP, Merino MJ. Infarcted myxoid fibroadenoma following fine-needle aspiration. *Arch Pathol Lab Med*. 1996;120:1069-1071
8. Ichihara S, Matsuyama T, Kubo K, Tamura Z, Aoyama H. Infarction of breast fibroadenoma in a postmenopausal woman. *Pathol Int*. 1994;44:398-400.
9. Akdur NC, Gozel S, Donmez M, Ustun H. Spontaneous infarction of multiple fibroadenoma in a postlactational woman: case report. *Turkiye Klinikleri Journal of Medical Sciences*. 2012;32:1429-1432. doi: 10.5336/medsci.2010-22098.
10. Tavassoli FA. Pathology of The Breast. McGraw - Hill; 1999.

11. Verslegers I et al. Massive infarction of a recurrent phyllodes tumor of the breast: MRI-findings. *JBR-BTR* 2004; 87:21-22.
12. Okada K, Suzuki Y, Saito Y, Umemura S, Tokuda Y. Two cases of ductal adenoma of the breast. *Breast Cancer*. 2006; 13:354-359. doi: 10.2325/jbcs.13.354.
13. Newman J, Kahn LB. Infarction of fibro-adenoma of the breast. *Br J Surg*. 1973; 60:738-740. doi: 10.1002/bjs.1800600921.
14. Greenberg R, Skornick Y, Kaplan O. Management of breast fibroadenomas. *J Gen Intern Med*. 1998; 13:640-645. doi: 10.1046/j.1525-1497.1998.cr188.x. [PMC free article] [PubMed] [Cross Ref]
15. Wadhwa N, Joshi R, Mangal N, Khan NP, Joshi M. Cytopathologic diagnosis of spontaneous infarction of fibroadenoma of the breast. *Turkish Journal of pathology* 2014; 30(3):237-40.
16. Walke V, Ramraje S, Jadhao V, Gupta S. Spontaneous infarction in fibroadenoma, a diagnostic challenge on cytology: Report of two cases. *J Health Spec* 2014; 2:86-8.
17. Javadzadeh B, Finley J, Williams HJ. Fine needle aspiration cytology of mammary duct ectasia: Report of a case with novel cytologic and immunocytochemical findings. *Acta Cytol*. 2001; 45:1027-31.
18. Kamra HT, Gadgil PA, Chaware SA, Kolhe AB, Sakinlawar PW. Cytological correlation of early changes in spontaneously infarcted fibroadenoma-a rare case report. *ecancer* 2012; 6:257.
19. Fadaei-Araghi M, Geranpayeh L, Irani S, Matloob R, Kuraki S. Breast tuberculosis: Report of eight cases. *Arch Iran Med*. 2008; 11:463-5.

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