

# Phyllodes Tumour of the Breast Associated with Concomitant Tuberculous and Sarcoid Like Lesions in the Axillary Lymph Nodes: A Case Report

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## ABSTRACT

The concomitant presence of tuberculous and sarcoid like lesions in the lymph nodes, which drain a neoplasm, is very rare. The case which is reported here is that of a 40 years old female patient who presented with a history of a right sided breast mass of 5 years duration. Fine needle aspiration cytology (FNAC) of the breast lump suggested the features of a phyllodes tumour of questionable malignant potential. She underwent a simple mastectomy with axillary lymph node clearance. The histo-

pathological examination of the tumour revealed the features of a borderline phyllodes tumour of the breast. The axillary lymph nodes revealed a florid, sarcoid like, granulomatous reaction and caseating granulomas with acid fast bacillus positivity. There was no clinical, radiological or immunological evidence of systemic sarcoidosis. No metastatic deposits were seen in the lymph nodes. The occurrence of the sarcoid like reaction and tuberculosis concomitantly in the lymph nodes, which drain a breast neoplasm, has been described and discussed.

**Key Words:** Asteroid bodies, Granulomas, Phyllodes tumour, Sarcoidosis, Schaumann bodies, Tuberculosis

## INTRODUCTION

The concomitant presence of tuberculosis and sarcoidosis has been described in old medical literature [1], [2] and a close resemblance between the two can soon be noticed because of the similarities of the clinical and the histological features. Mycobacterium tuberculosis or its degraded products are considered as the aetiological agents of sarcoidosis [3]. The presence of granulomatous lesions in the lymph nodes which drain a malignant or potentially malignant tumour is a rare phenomenon and this granulomatous reaction is associated with a neoplasm that represents a T-cell mediated immunological response to the soluble tumour related antigen which is reactive to the lymph nodes [4], [5]. The tumour associated histological changes have been termed as "sarcoid reactions"; the term "sarcoid like reaction" is more appropriate [6]. The high prevalence of tuberculosis in India and the occurrence of immunosuppression due to the neoplasm is considered to cause a reactivation of the old tuberculous lesions in the draining lymph nodes.

## CASE REPORT

A 40 years old female presented with a gradually increasing mass in the right breast of 5 years duration, which suddenly increased in size in the past two months and it was associated with pain. She also had a past history of tuberculosis in the left cervical lymph node, for which she had taken partial treatment from a local practitioner. There was no hepato-splenomegaly. The X-ray of the chest was normal. FNAC of the breast lump revealed abundant leaf like stromal fragments and myxoid stroma with mild atypia in the stromal cells which was suggestive of phyllodes tumour with questionable malignancy. She underwent a simple mastectomy with axillary lymph node clearance.

On gross examination, the breast specimen measured 20 x 18 x 10 cm. The cut section revealed a large, well circumscribed,

bulging tumour mass measuring 16 x 15 x 8.0 cm. The cut surface of the mass showed a whorled appearance with exaggerated lobulation, focal areas of necrosis and cystic degeneration. The surrounding breast tissue was normal in appearance [Table/Fig-1]. A total number of 21 axillary lymph nodes were received; the largest one measured 3.5 x 2.5 x 1.5 cm. The cut surface showed focal areas of caseous necrosis in some of the lymph nodes [Table/Fig-1 inset].

On microscopic examination, sections from the tumour revealed a biphasic, intraductal, papillomatous lesion with variable cellular stroma, showing atypical changes in the stromal cells and 3-5 mitoses/10 hpf [Table/Fig-2], [Table/Fig-2 inset].

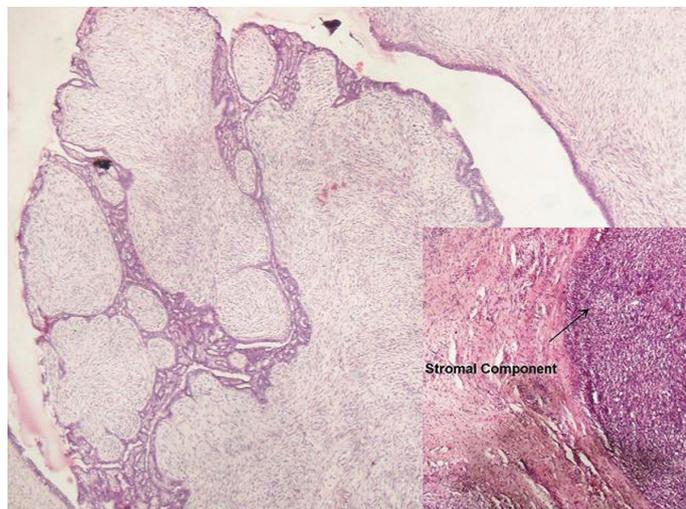
The resected margins of the breast were free of the tumour. A diagnosis of borderline phyllodes tumour of the breast was made.



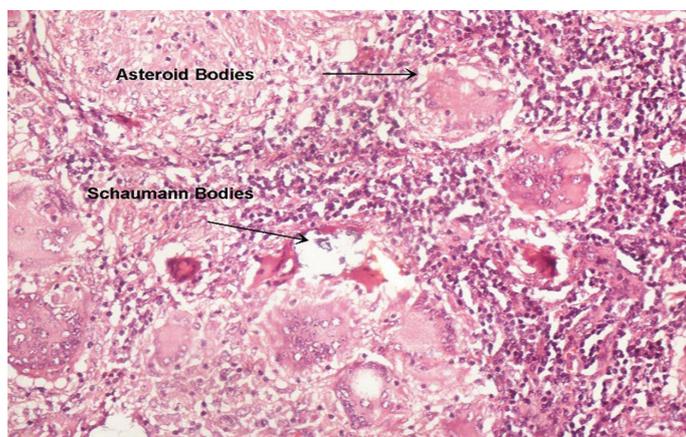
**[Table/Fig-1]:** Breast specimen with tumor mass. Inset, lymph node showing caseation

Sections from the lymph nodes revealed a florid granulomatous reaction consisting of non-caseating and caseating granulomas. These were composed of epithelioid cells, lymphocytes, plasma cells and numerous multinucleated and Langhan's giant cells containing many laminated basophilic structures which were reminiscent of Schaumann bodies and a few stellate-like inclusions which were suggestive of asteroid bodies [Table/Fig-3].

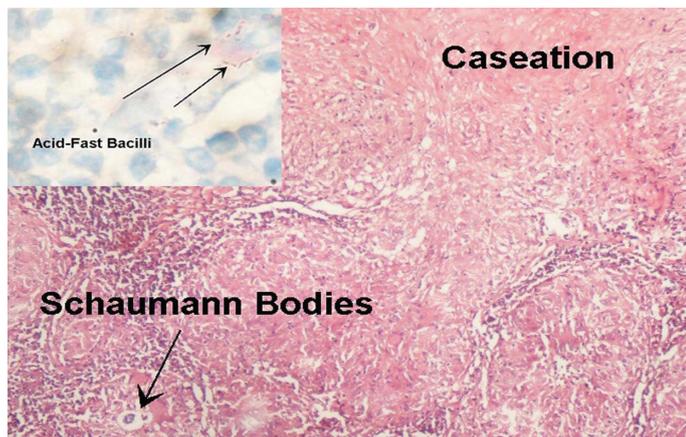
Focal areas of caseation necrosis were also seen [Table/Fig-4]. Acid fast staining revealed the presence of acid fast bacilli [Table/Fig-4 inset].



**[Table/Fig-2]:** Leaf like appearance of the phyllodes tumor. (H&E, X40), Inset, Showing stromal component with atypia. (H&E, X100)



**[Table/Fig-3]:** Lymph node showing granulomas with Schaumann and asteroid bodies in giant cells. (H&E, X200)



**[Table/Fig-4]:** Caseation necrosis in lymph node. (H&E, X100) Inset showing, Acid fast bacilli (Z-N stain X1000)

None of the lymph nodes showed the presence of metastatic deposits. The above histological features suggested a sarcoid like reaction with the concomitant presence of a tuberculous granuloma in the axillary lymph nodes. The patient was given anti-tubercular treatment, following which she showed signs of recovery.

## DISCUSSION

The case that is reported here is that of a sarcoid like lesion which was coexistent with tuberculous granulomas in the lymph nodes; though these are rare, the occurrence of both these lesions has been described in the old medical literature [1], [2]. Moreover, the concomitant presence of these lesions in the lymph nodes which drain the breast neoplasm (phyllodes tumour in our case) is unique and very rare.

Caseating and non-caseating epithelioid cell granulomas have been described in contiguous lymph nodes in association with benign and malignant lesions [7]. A granulomatous reaction in sarcoidosis, is believed to be a response to some degradable and unidentified antigens. Numerous infective and non infective aetiological agents have been implicated. Among the infective agents, *Propionibacterium acnes* and *Mycobacterium tuberculosis* have been incriminated as the possible aetiological agents [8]. However, molecular studies like the polymerase chain reaction (PCR) for studying the nucleic acids of *Mycobacterium tuberculosis* (MTB) from a population with a low prevalence of tuberculosis have clearly shown a close association between sarcoidosis and tuberculosis in a significant number of patients [9]. However, the possible role of tuberculosis in the causation of sarcoid like lesions in areas which are endemic for tuberculosis remains to be explored. Distinguishing the sarcoid like reactions from sarcoidosis is based on the location and the distribution of the granulomas, as well as on the correlation of the microscopic findings with the clinical, radiological and the laboratory features [6]. In our case, there was no evidence of the involvement of the lungs and the mediastinum. Also, the serum angiotensin converting enzyme (SACE) levels were within normal limits, thus excluding the possibility of systemic sarcoidosis. Therefore, the findings in our case were more akin to sarcoid like reactions.

Tubercular and sarcoid granulomas share common histological similarities and their co-existence in the same lesion raises the suspicion of a mycobacterial cause of sarcoidosis. Some reports on the isolation of acid fast organisms from sarcoid granulomas also support this possibility [10], [11]. This presumption appears to be factual for our reported case, since the lesion in the lymph node was positive for acid fast bacilli. One may opine that *Mycobacterium* or some of its components may be capable of inducing an immune response and the subsequent pathological changes producing a sarcoid like lesion, thus suggesting the possible aetiological link between the two diseases [12]. This was also further supported by the presence of Schumann bodies in such lesions, since these were thought to be formed as a result of the products of disintegrated tubercle bacilli which were deposited around the elastic and connective tissue fibrils [13], [14]. The granulomatous reaction in this case was so extensive so as to mimic a metastatic deposit, but the same was conspicuous by its absence. Another interesting pathological feature in this case was that the granulomas were not quite uniform; some resembled typical sarcoid granulomas showing a marked proliferation of epithelioid cells and others showing caseous necrosis which was reminiscent of tuberculosis. Such sarcoid like reactions are interpreted as T cell mediated immune responses to an antigen which might be triggered by a

tumour in the breast, thus pointing to a special kind of host versus tumour response [15].

Since there were no metastatic deposits in the lymph node, the response can be due to a soluble tumour related antigen which reached the lymph nodes, thus indicating the possibility of an activated host-immunological response. The occurrence of tuberculosis in the lymph nodes which drained the breast neoplasm is unusual and a matter of concern for the clinicians. This coincidence may be due to a high prevalence of tuberculosis in India or the tuberculosis is known to get reactivated in the settings of immunosuppression due to malignant/ potentially malignant neoplasms [7].

## CONCLUSION

We have presented a rare and unique case of concomitant tuberculous and sarcoid like lesions in the lymph nodes, in a patient with an ipsilateral phyllodes tumour of the breast. At the same time, we have emphasized the diagnostic dilemmas that may occur where these pathological entities co-exist together. As it is not possible to distinguish sarcoid like reactions from sarcoidosis histologically, a thorough investigation of the patient is mandatory to rule out systemic sarcoidosis.

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### DECLARATION ON COMPETING INTERESTS:

No competing Interests.

Date of Submission: **Feb 22, 2011**  
Date of Peer Review: **Mar 22, 2011**  
Date of Acceptance: **Mar 24, 2011**  
Date of Publishing: **Jun 13, 2011**