



## Cysticercosis of Breast Mimicking Fibroadenoma

Satish Dalal, Vundavalli Sattibabu, Vipul Bakshi, Chisel Bhatia

Department of General Surgery, Pt. B. D. Sharma Postgraduate Institute of Medical Sciences (P.G.I.M.S.), Rohtak-124001, Haryana, India.

### Abstract:

Human cysticercosis is a parasitic infestation which is caused by the larvae *cysticercus cellulosae* of pork tape worm, *Taenia solium*. Common sites of occurrence of cysticercosis are the skeletal muscles, subcutaneous tissue, brain, eye in the decreasing order of frequency. Breast is an uncommon site for cysticercosis, with only a few cases being reported in the literature. Here, we describe a case of 55 years old female who presented with a lump in her right breast which was mimicking fibroadenoma.

**Key words:** Breast, Cysticercosis, Fibroadenoma, Parasitic Diseases, *Taenia solium*.

### Introduction

Cysticercosis continues to be a major public health problem in developing countries where open air defecation and a lack of hygiene are rampant. Human cysticercosis, a potentially deadly infestation, is the consequence of the ingestion of the eggs of *Taenia solium* which are present in contaminated food, water, unwashed hands and by means of autoinoculation. The common sites of cysticercosis are skeletal muscles, subcutaneous tissue, breast, brain, and eye in decreasing order of frequency [1]. The breast is an uncommon site for cysticercosis, with only a few cases having been reported in the literature.

Although central nervous system involvement constitutes the primary site of infection, other organs, including breast can be involved. These parasites

are seen as lumps in the breast often clinically mimic fibroadenoma.

### Case Report

A 55 years old female presented with a lump in the right breast, for two months which was insidious in onset. On examination, a lump of 5x5 mm was present in the upper outer quadrant of the breast at 11 O'clock position, which was freely mobile, non-tender and soft to firm in consistency. There was no axillary lymphadenopathy. Ultrasonography showed a well-defined round cystic structure of approximate size 5x5 mm with echogenic nidus seen in upper outer quadrant of right breast which was suggestive of cystic lesion. Mammography showed a well-defined rounded, soft tissue density

**Corresponding Author: Dr. Vundavalli Sattibabu**

Email: vundavallisattibabu@gmail.com

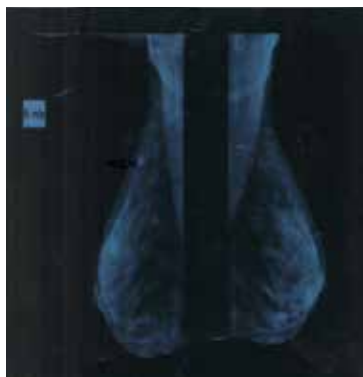
**Received:** February 26, 2016 | **Accepted:** April 8, 2016 | **Published Online:** April 20, 2016

This is an Open Access article distributed under the terms of the Creative Commons Attribution License ([creativecommons.org/licenses/by/3.0](http://creativecommons.org/licenses/by/3.0))

**Conflict of interest:** None declared | **Source of funding:** Nil | **DOI:** <http://dx.doi.org/10.17659/01.2016.0042>

lesion with calcification in upper outer quadrant of right breast [Fig.1].

Patient underwent surgical excision of the above mentioned swelling, which on gross examination was suggestive of fibroadenoma. Grossly, the lump consisted of a grey white, nodular swelling which measured 5x5 mm [Fig.2]. The external surface was smooth and glistening. The cut section showed a cyst with clear serous fluid. Its microscopic sections showed a cyst containing the typical cysticercus larva with deep notches in the body wall [Fig.3]. Cyst was composed of three layers: outer cuticular layer, middle cellular layer and inner fibrillary layer forming racemose pattern.



**Fig.1:** Mammography showing well defined lesion with calcification in right breast (black arrow).



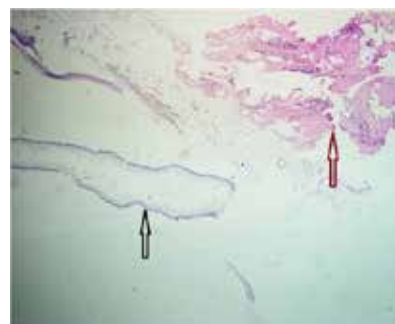
**Fig.2:** Photograph showing excised grey white, nodular swelling.

The surrounding breast tissue showed a foreign body giant cell granulomatous reaction [Fig.4].

## Discussion

Most of the estimated 50 million cases of cysticercosis originate in poor communities of Latin America, Asia and Africa [2]. Cysticercosis is caused by the larval stage of the human tape worm, *Taenia solium*. It contributes to be a major health problem in the developing countries.

In the normal life cycle of *Taenia solium*, humans are definitive hosts and pigs are intermediate hosts. Humans are usually infected by eating raw or undercooked pork that has been infected with



**Fig.3:** Microphotograph showing normal breast parenchyma (red arrow), and portion of worm (black arrow) (H/E, 40X).



**Fig.4:** Microphotograph showing adult cysticercus worm (H/E, 100X).

larvae. Pigs ingest eggs present in human faeces, and the eggs are then lysed in the gut by gastric juice. Oncospheres hatch, invade the intestinal wall, and reach the bloodstream. The oncospheres then spread to the central nervous system, skeletal muscle, subcutaneous tissue, eyes, breast and heart where they develop into cysticerci [3]. When persons ingest raw or under cooked infected meat, stomach enzymes lyse the outer shell of the parasite, leaving the scolex behind. The scolex has suckers and hooks that aid in attachment to the intestinal wall. Once the parasite has attached itself to the intestinal wall, the scolex proliferates and becomes an adult tapeworm over two months and can survive for years within the human intestines. Adult tapeworms produce eggs that mature, become gravid, detach from tapeworm and migrate to the anus or are passed in the stool. When pigs ingest the eggs from infected soil, the cycle begins again [4]. The cysticerci are commonly found in central nervous system, eye, subcutaneous tissue and striated muscle and rarely in heart, lung and bone. The breast is an unusual site for the cysts to form and only few such cases have been reported in the literature. In Nepal, Amatya and Kimula reported 62 cases of histologically diagnosed cysticercosis, five of which were found in the breast substance [5]. In India, a review study of 8,364 breast aspirates over 15 years demonstrated only 8 cases of cysticercosis [6].

In this particular case, an initial diagnosis of fibroadenoma was made due to its typical features of a painless, firm and freely mobile mass. Thus diagnosis of cysticercosis in unusual sites may be clinically difficult. It may be established by the recovery of whole cysticerci or the histologic demonstration of the cysticerci in surgically removed tissues. Radiologically it can be detected by visualization of calcifying cysticerci on X-ray or mammography [7]. Indirect methods of diagnosis include serological tests like indirect haemagglutination, Complement fixation, indirect immunofluorescence and ELISA [8]. Surgical

excision of the lesion is treatment of choice if it is symptomatic.

## Conclusion

This case report emphasizes the fact that especially in areas of great prevalence of this parasitic disease, cysticercosis should also be considered as a differential diagnosis for lump in the breast.

## References

1. Chi HS, Chi JG. A histopathological study on human cysticercosis. *Kisaengchunghak Chapchi* 1978;16(2):123-133.
2. Maguire JH. Tapeworms and seizures-treatment and prevention. *N Engl J Med.* 2004;350:215-217.
3. King CH. Cestode infections. Goldman L, Ausiello D, eds. *Cecil Textbook of Medicine.* 22<sup>nd</sup> edition. Volume 2. Philadelphia: Elsevier 2004;2460-2461.
4. Ergen FB, Turkbey B, Kerimoglu U, Karaman K, Yorganc K, Saglam A. Solitary cysticercosis in the intermuscular area of thigh: a rare and unusual pseudotumour with characteristic imaging findings. *J Comput Assist Tomogr.* 2005;29:260-263.
5. Amatya BM, Kimula Y. Cysticercosis in Nepal; A histopathologic study on sixty two cases. *Am J Surg Pathol.* 1999;23:1276-1279.
6. Sahai K, Kapila K, Verma K. Parasites in fine needle breast aspirates-assessment of host tissue response. *Postgrad Med J.* 2002;78(917):165-167.
7. Orihel TC, Ash LR. Tissue Helminths. In: *Manual of Clinical Microbiology*, V Edition, American Society for Microbiology, Washington DC, 1991:780.
8. Duerden BI, Reid TMS, Jewbury JM. Helminthic infections of soft tissues. In: Edward Arnold ed. *Microbial and Parasitic Infection.* 1993:301.