

Primary Plasmacytoma of Thyroid Gland—an Interesting Case Diagnosed By FNAC

Debashish Bhattacharjee, Santosh Kumar Mondal, Goutam Dey, Saumitra Biswas

ABSTRACT

Introduction: Primary plasmacytoma of the thyroid gland is a rare disease. Extramedullary plasmacytoma (EMP) comprises 3-5% of all plasma cell neoplasm. **Case report:** A 57-years-old female presented with a large thyroid swelling involving the left lobe and isthmus, firm in consistency and moved a little with deglutition. CT scan revealed a large solid tumor (9.5 cm in greatest dimension) affecting thyroid gland. CT scan report gave differential diagnoses of plasmacytoma and metastatic carcinoma. FNAC revealed hypercellular smears composed of plasma cells with eccentrically placed nuclei and perinuclear hoff. Hematological work up and other relevant investigations including urine for Bence Jones protein ruled out multiple myeloma or other plasma cell dyscrasias. Subsequent histopathological examination and IHC (immunohistochemistry) confirmed the diagnosis of primary plasmacytoma of thyroid.

Discussion: EMP can present with elevated anti thyroid antibodies and can be associated with lymphocytic thyroiditis; however, in our patient these findings were not present.

Key words: FNAC, Thyroid, Primary extramedullary plasmacytoma, Histopathology, Immunohistochemistry.

INTRODUCTION

Plasma cell neoplasms occur because of monoclonal proliferations of B-lymphoid cells. These neoplasms when restricted to one medullary area are termed as solitary bone plasmacytoma whereas, when restrained to one extramedullary soft tissue site are termed as extramedullary plasmacytoma (EMP).^[1] EMP comprises 3-5% of all plasma cell tumors and commonly involves the head and neck regions.^[2] Involvement of the thyroid gland by EMP is a rare event.^[3] We report a case of solitary plasmacytoma of thyroid gland in a woman diagnosed by FNAC.

CASE REPORT

A 57 years old female presented with a rapidly growing neck mass for three months and mild dysphagia for duration of one month. Patient had no significant past history of illness. On clinical examination, the thyroid gland was painlessly enlarged, more prominent on the left side, nodular and firm in consistency. (Figure 1A) No lymph node enlargement was found. Examination of other systems was within normal limits. Thyroid profile, serum calcium, serum phosphatase were within normal limits. Antiperoxidase and antithyroglobulin antibodies were negative. Ultrasonography of the thyroid detected hypoechoic, heterogenous areas in the left lobe and isthmus suggestive of a space-occupying lesion. FNAC from the thyroid mass revealed hypercellular smear composed of plasma cells with eccentrically placed nuclei

and perinuclear hoff admixed with normal thyroid follicular cells. Most of these plasma cells were arranged discretely (Figure 1B, 1C) Computerized tomography (CT) scan of the thyroid revealed a large solid tumor affecting the whole of left lobe and isthmus, measuring 9.5 cm in greatest dimension. Thoraco abdominal CT scan was normal with no pulmonary lesion, no mediastinal lymph nodes and no hepatosplenomegaly detected. Hematological investigations (peripheral blood smear, bone marrow aspiration and biopsy) did not show increased plasma cells. Serum/urinary M protein or urinary Bence Jones protein was not detected. X-ray skeletal survey was within normal limits. The patient underwent total thyroidectomy. Gross examination of the thyroidectomy specimen showed the left lobe with an isthmus measuring 6×5.6×4.2 cm and the right lobe measuring 2.5×4×3.2 cm. The cut surfaces of the left lobe, isthmus showed a nodular mass, which was yellowish tan in color and fleshy in appearance. The right lobe did not reveal any mass and was reddish brown in color. Histopathological examination revealed dense infiltration of thyroid tissue by plasma cells. The plasma cells were arranged in diffuse sheets. The plasma cells varied from mature to immature cells. Many binucleated and a few multinucleated plasma cells were noted. (Figure 1D, 1E) Based on morphological features, a provisional diagnosis of plasmacytoma was given and immunohistochemistry (IHC) was suggested for confirmatory diagnosis. IHC showed a plasmacytoid neoplasm

Debashish Bhattacharjee, Santosh Kumar Mondal, Goutam Dey, Saumitra Biswas

Department of Pathology, Bankura Sammilani Medical College, Bankura, West Bengal, INDIA.

Correspondence

Dr. Debashish Bhattacharjee

16/1 Motijheel Avenue, flat-4E, Dumdum, Kolkata, INDIA.

Ph no: 9433343567

E-mail - debashishrgk@gmail.com

History

- Submission Date: 08-10-2016;
- Review completed: 12-11-2016;
- Accepted Date: 05-01-2017

DOI : 10.5530/ogh.2017.6.2.24

Article Available online

<http://www.oghreports.org>

Copyright

© 2017 Phcog.Net. This is an open-access article distributed under the terms of the Creative Commons Attribution 4.0 International license.

Cite this article: Bhattacharjee D, Mondal SK, Dey G, Biswas S. Primary Plasmacytoma of Thyroid Gland-an Interesting Case Diagnosed By FNAC. OGH Reports. 2017;6(2):83-5.

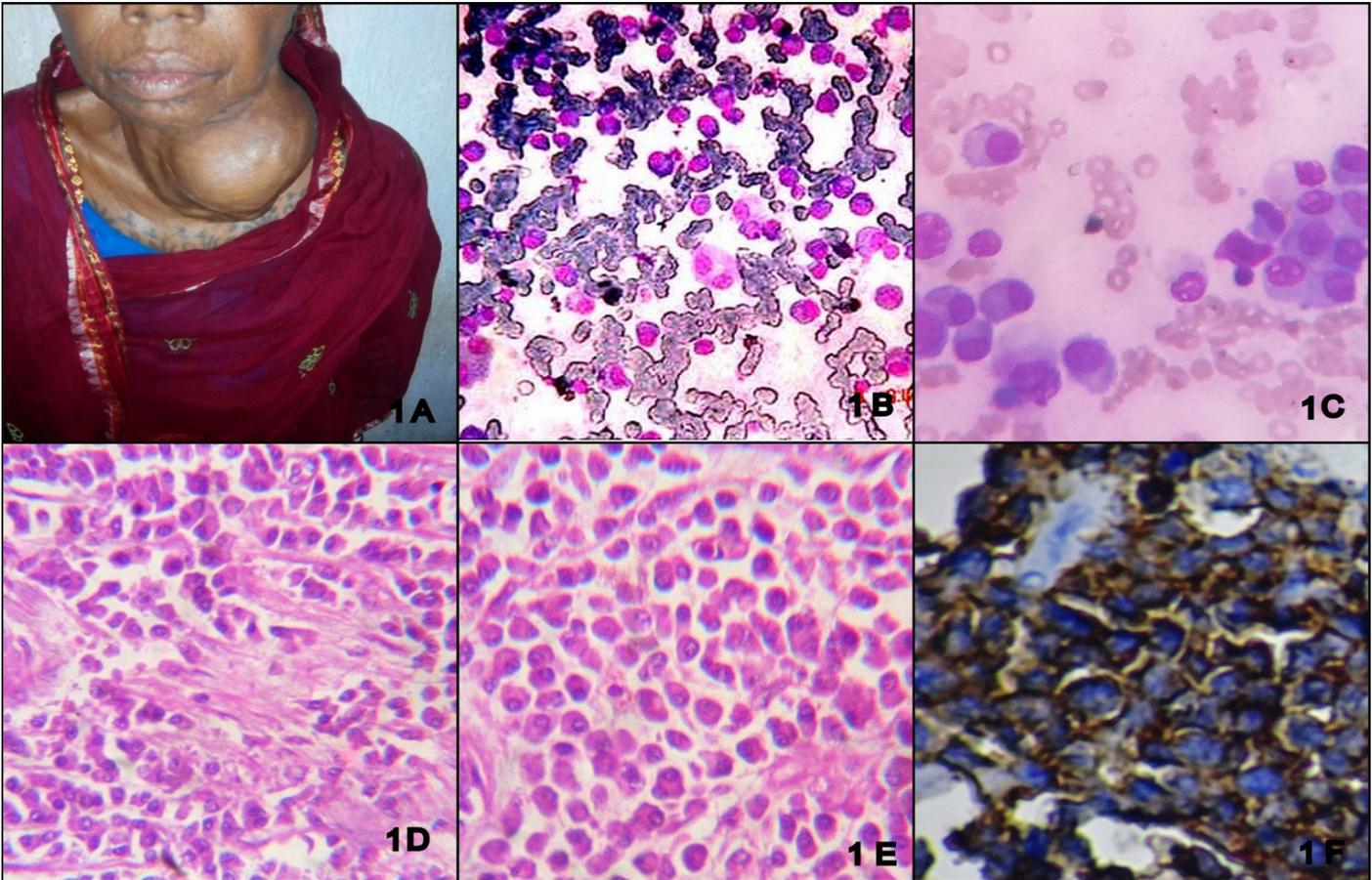


Figure 1A: Nodular growth over thyroid. **Figure 1B:** FNAC from the thyroid mass shows plasma cells including binucleated forms. (MGG, x 100) **Figure 1C:** High power view of the thyroid cytology showing plasma cells arranged discretely and in groups. (MGG, x 400) **Figure 1D** and **Figure 1E:** Low power view of the sections from thyroid growth. (H and E, x 100) **Figure 1F:** Low power view of CD138 immunomarker staining showing diffuse cytoplasmic membrane positivity (x100)

positive for CD138 (Figure 1F) and CD38. The tumor cells were negative for CD19 CD20 and CD45 and therefore lymphoplasmacytic lymphoma was ruled out. Thus, a confirmatory diagnosis of primary extramedullary plasmacytoma of thyroid was established. Patient did not receive any adjuvant chemotherapy or radiotherapy. Six months follow-up was uneventful without any recurrence.

DISCUSSION

Plasma cell dyscrasias or monoclonal gammopathies include six major entities namely multiple myeloma, lymphoplasmacytic lymphoma, localized plasmacytoma, heavy chain disease, primary amyloidosis and monoclonal gammopathy of undetermined significance. Beguin *et al.* found only two cases of plasmacytoma in 14000 thyroid surgeries.^[4] EMP of thyroid usually presents as rapidly growing painless, firm, mobile, multinodular or diffuse thyroid mass.^[5,6] EMP occurs in a wide age group of 19 to 82 years with female predominance.^[4,7] Patients usually have normal thyroid profiles however; elevation of anti-thyroid antibodies was documented in some cases.^[8,9] Our patient had normal thyroid profile. Lymphocytic thyroiditis is usually accompanies EMP of thyroid gland^[4] however, some studies have not found any association between lymphocytic thyroiditis and EMP.^[10] In our case; we did not find any histological features of underlying lymphocytic thyroiditis. Common histological mimickers of EMP thyroid include medullary carcinoma of thyroid^[11] and lymphoplasmacytic lymphoma. It is also essential to rule out multiple myeloma in order to establish a diagnosis of EMP. The diagnostic criteria of EMP include histopathological evidence of monoclonal

plasma cell infiltration, < 5% of plasma cells at bone marrow examination, no skeletal lytic lesion, no evidence of hypercalcaemia or kidney failure and low levels of M protein if it exists.^[12] In our case, neither M protein nor Bence Jones protein was present. EMP can be classified into three stages.^[13] Mainstay of the treatment of EMP includes surgical excision or radiotherapy with or without chemotherapy.^[14] The clinical course of EMP is favorable with a 70% disease free survival at ten years.^[15] The rate of progress of EMP to multiple myeloma ranges from 11% to 30% at ten years.^[16]

CONCLUSION

Extra medullary plasmacytoma of thyroid is extremely rare. It generally presents with lymphocytic thyroiditis; however, in some cases plasmacytoma of thyroid can present without it. Thyroid plasmacytoma can mimic medullary carcinoma of thyroid and lymphoplasmacytic thyroiditis. Correlation between cytological, histological and immuno histochemical findings helps in solving diagnostic dilemmas.

ACKNOWLEDGEMENT

Dr. Debjani Basu (PGT pathology Bankura Sammilani Medical College).

CONFLICT OF INTEREST

None

ABBREVIATIONS USED

EMP: Extramedullary plasmacytoma; CT scan: Computerized tomography scan; FNAC: Fine needle aspiration cytology; IHC: immunohistochemistry.

REFERENCES

- Schor AP, Moraes MP, Bisson FW, Bisson MA, Luiz OM, Bacchi CE. Primary plasmacytoma of the cervix in a 21-year-old female patient. *Int J Gynecol Pathol.* 2010;29(3):290-3. <https://doi.org/10.1097/PGP.0b013e3181c070b4> PMID:20407332.
- Ujiiie H, Okada D, Nakajima Y, Yoshino N, Akiyama H. A case of primary solitary pulmonary plasmacytoma. *Ann Thorac Cardiovasc Surg.* 2012;18(3):239-42. <https://doi.org/10.5761/atcs.cr.11.01749> PMID:22790997.
- Avila A, Villalpando A, Montoya G, Luna MA. Clinical features and differential diagnoses of solitary extramedullary plasmacytoma of the thyroid: a case report. *Ann Diagn Pathol.* 2009;13(2):119-23. <https://doi.org/10.1016/j.anndiagpath.2007.07.003> PMID:19302961.
- Beguín Y, Boniver J, Bury J, Defraigne JO, Detroz B, Fillet G, *et al.* Plasmacytoma of the thyroid: A cases report and study with use of immunoperoxidase technique and review of literature. *Surgery.* 1987;101(4):496-500. PMID:3551167.
- Mekkawy AA. "Plasmacytoma of the thyroid gland: case report and review of the literature." *JKAU-Medical Sciences.* 2010;17(2):83-92. <https://doi.org/10.4197/Med.17-2.7>
- Aozasa K, Inoue A, Yoshimura H, Miyauchi A, Matsuzuka F, Kuma K. Plasmacytoma of the thyroid gland. *Cancer.* 1986;58:105-110. [https://doi.org/10.1002/1097-0142\(19860701\)58:1<105::AID-CNCR2820580119>3.0.CO;2-K](https://doi.org/10.1002/1097-0142(19860701)58:1<105::AID-CNCR2820580119>3.0.CO;2-K).
- Aihara H, Tsutsumi Y, Ishikawa H. Extramedullary plasmacytoma of the thyroid, associated with follicular colonization and stromal deposition of polytypic immunoglobulins and major histocompatibility antigens possible categorization in MALT lymphoma. *Acta Pathol Jpn.* 1992;42(9):672-83. PMID:1476063.
- Shimaoka K, Gailani S, Tsukada Y, Barcos M. Plasma cell neoplasm involving the thyroid. *Cancer.* 1978;41(3):1140-46. [https://doi.org/10.1002/1097-0142\(197803\)41:3<1140::AID-CNCR2820410351>3.0.CO;2-X](https://doi.org/10.1002/1097-0142(197803)41:3<1140::AID-CNCR2820410351>3.0.CO;2-X).
- Kapadia SB, Desai U, Cheng VS. Extramedullary plasmacytoma of the head and neck. *Medicine (Baltimore).* 1982;61(5):317-29. <https://doi.org/10.1097/00005792-198209000-00004>.
- Bridal M, Ouattassi N, Harmouch T, Amarti A, Alami MN. Solitary extramedullary plasmacytoma of the thyroid gland. *Case Rep Otolaryngol.* 2012;282784. doi: 10.1155/2012/282784. Epub 2012 Oct 9. <https://doi.org/10.1155/2012/282784>.
- Bourtsos EP, Bedrossian CW, De Frias DV, Nayar R. Thyroid plasmacytoma mimicking medullary carcinoma: A potential pitfall in aspiration cytology. *Diag Cytopathol.* 2000;23(5):354-8. [https://doi.org/10.1002/1097-0339\(200011\)23:5<354::AID-DC15>3.0.CO;2-7](https://doi.org/10.1002/1097-0339(200011)23:5<354::AID-DC15>3.0.CO;2-7).
- Galièni P, Cavo M, Pulsoni A, Avvisati G, Bigazzi C, Neri S, *et al.* Clinical outcome of extramedullary plasmacytoma. *Haematologica.* 2000;85(1):47-51. PMID:10629591.
- Soesan M, Paccagnella A, Chiarion-Sileni V, Salvagno L, Fornasiero A, Sotti G, *et al.* Extramedullary plasmacytoma: clinical behaviour and response to treatment. *Ann Oncol.* 1992;3(1):51-57. PMID:1606070.
- Alexiou C, Kau RJ, Dietzfelbinger H, Kremer M, Spiess JC, Schratzenstaller B, *et al.* Extramedullary plasmacytoma: Tumor occurrence and therapeutic concepts. *Cancer.* 1999;85(11):2305-14. [https://doi.org/10.1002/\(SICI\)1097-0142\(19990601\)85:11<2305::AID-CNCR2>3.3.CO;2-V](https://doi.org/10.1002/(SICI)1097-0142(19990601)85:11<2305::AID-CNCR2>3.3.CO;2-V) [https://doi.org/10.1002/\(SICI\)1097-0142\(19990601\)85:11<2305::AID-CNCR2>3.0.CO;2-3](https://doi.org/10.1002/(SICI)1097-0142(19990601)85:11<2305::AID-CNCR2>3.0.CO;2-3).
- Dimopoulos MA, Kiamouris C, Mouloupoulos LA. Solitary plasmacytoma of bone and extramedullary plasmacytoma. *Hematol Oncol Clin North Am.* 1999;13(6):1249-57. [https://doi.org/10.1016/S0889-8588\(05\)70124-6](https://doi.org/10.1016/S0889-8588(05)70124-6).
- Alieni P, Cavo M, Pulsoni A, Avvisati G, Neri CB. Clinical outcome of extramedullary plasmacytoma. *Haematologica.* 2000;85(1):47-51.

Cite this article: Bhattacharjee D, Mondal SK, Dey G, Biswas S. Primary Plasmacytoma of Thyroid Gland-an Interesting Case Diagnosed By FNAC. *OGH Reports.* 2017;6(2):83-5.