

A Case Report on Management of patient with Graves' Disease

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Abstract: -

Introduction: Graves' illness (GD) may show exceptional signs. Graves' sickness is an ongoing disease that influences individuals. A fourteen day history of dyspnea, palpitations, and edema was introduced. She had a goiter, exophthalmos, and a raised jugular venous pressing factor. Pancytopenia, a higher antacid phosphatase level, hyperbilirubinemia (principally direct bilirubin), and hyperthyroidism were found in research facility testing. The patient became euthyroid following three months. Her hemoglobin, basic phosphatase, and right ventricular systolic pressing factor (52.64 mmHg) all improved, as did her leukocyte and platelet tallies and bilirubin levels. This is the primary occurrence of GD with the three strange side effects of pancytopenia, cholestatic liver harm, and PH with right-sided cardiovascular breakdown that has been recorded. Pancytopenia should resolve with euthyroidism with antithyroid medicine treatment, anyway PH and liver harm may require numerous months to determine. **Clinical findings:** physical examination and systemic examination done all investigation done to diagnosed a case of Graves disease **diagnosis assessment:** Blood Investigation: WBC:-<5000 cells/mm³. RBC :- 20,000-40,000 (cells/mcL), IgM and IgG test :- Positive, Platelet count:- 12,000 cells/mm³ **Therapeutic intervention:-** Patient was treated analgesics drug to reduce pain, analgesic, antipyretic drugs gives to reduce complications. **Outcome:-** Patient was taken medications as per doctor order such as paracetamol to reduce their pain And also patient condition was good with the medical treatment. **Nursing perspectives:-** Administered fluid replacement ie. DNS and RL. Monitor vital signs and Check BP per hourly. Maintained intake and output chart and provided adequate rest and sleep to the patient. Administered medications according to doctor's order. Hydrotherapy given because patient had fever. **Conclusion:-** This case of Crohns disease the patient taken all treatment with proper medication . The patient's condition was improved .

KEYWORDS :- Graves' Disease, Hyperthyroidism, Thyrotoxicosis, Pancytopenia.

INTRODUCTION:

Graves' disease (GD) may display uncommon manifestations. Graves' disease is a chronic illness that affects people. A two-week history of dyspnea, palpitations, and edema was presented. She had a goiter, exophthalmos, and an elevated jugular venous pressure. Pancytopenia, a higher alkaline phosphatase level, hyperbilirubinemia (primarily direct bilirubin), and hyperthyroidism were discovered in laboratory

testing. The patient became euthyroid after three months. Her hemoglobin, alkaline phosphatase, and right ventricular systolic pressure (52.64 mmHg) all improved, as did her leukocyte and platelet counts and bilirubin levels. This is the first instance of GD with the three unusual symptoms of pancytopenia, cholestatic liver damage, and PH with right-sided heart failure that has been documented. Pancytopenia should resolve with euthyroidism with antithyroid medication therapy, however PH and liver damage may take many months to resolve. Graves' illness is classified as an autoimmune thyroid condition. Robert J. Graves, MD, was the first to describe it in the 1830s.¹ It is caused by auto-antibodies binding to active thyrotropin receptors, which results in excessive quantities of circulating blood thyroid hormones.² Symptoms of hyperthyroidism are common in people with Graves' disease, including exhaustion, heat sensitivity, weight loss, increased hunger, increased gastrointestinal motility, palpitation, irritability, and restlessness.³ Although uncommon, single-cell lineage haematological abnormalities such as anemia, leucopenia, and thrombocytopenia might be part of the clinical symptoms in Graves' disease patients.⁴ Pancytopenia, on the other hand, is relatively uncommon in Graves' illness. In the literature, only a few people with Graves' illness and pancytopenia have been documented⁵⁻⁸. The hematological parameters reacted favorably to anti-thyroid medication in three individuals with Graves' disease who presented with pancytopenia. The instances highlight the need of starting anti-thyroid medication as soon as possible in individuals with Graves' disease and pancytopenia. The patients' written informed consents to the publishing of their cases were acquired.

Patient information:

28 year old male was admitted in A. V. B. R. H. On dated 20-6-21 with chief complaint of digestive tract, which can lead to abdominal pain, severe diarrhea, fatigue, weight loss and malnutrition and after physical examination and investigation doctor diagnosed a case of Crohns disease.

Patient Specific Information :-

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Medical history:-

On February 20th, 2021, a patient was admitted to the A. V. B. R. hospital. Patient had history of history of frequent alcohol consumption and Crohns disease since 3 years. He digestive tract, which can lead to abdominal pain, severe diarrhea, fatigue, weight loss and malnutrition. five days before admission, and he took acetaminophen at regular doses on his own.

On the fourth day of symptoms, after a decrease in fever and headache, he had diffuse abdominal pain, repeated vomiting, hematemesis, epistaxis and diarrhea.

Present case had history Graves disease.

Family History :-

He belongs to nuclear family. In patient's family there is no any hereditary history like DM, Asthma, Hypertension etc.

Psycho-social History :-

He was mentally stable, conscious and oriented to date time and place. He had maintain good relationship with doctors and nurses as well as other patients also.

Clinical Finding :-

Physical examination:-

The patient was awake and aware of the time, date, and location. His physique was average, and he kept himself clean. For three days, I've had a broad body soreness and a high . He was determined to be aware (Glasgow Coma Scale 15), with a pulse of 100 beats per minute and a blood pressure of 100/60 mmHg on physical examination. - 20 breaths per minute No rash or active bleeding was present. Other general and systemic examinations revealed no abnormality. The diagnosis on admission was graves disease.

Important clinical findings:-

Blood Investigation: WBC:-<5000 cells/mm³. RBC :- 20,000-40,000 (cells/mcL), IgM and IgG test :- Positive, Platelet count:- 12,000 cells/mm³

Timeline :-He took treatment in A. V. B. R. H. and he got the proper treatment. Taking proper medication and now he has been good condition .

Therapeutic interventions :-

Present case took the medical management with Crohn's disease , antipyretics given such Tab. Paracetamol 500 mg (BD), Inj. Ceftriaxone 1gm IV (BD), Inj. Pantaprozole 40 Mg iv (OD), Inj. Ondesetron 4MG iv (TDS).

Nursing perspectives :- Administration fluid replacement ie. DNS and RL monitor vital sign per hourly Maintained temperature chart 2 hourly strictly ,maintained intake output chart properly antibiotics given as per doctor order.

Discussion:-

The instances were similar in that all three patients were in their 50s and had no family history of thyroid issues. The patients in Cases 1 and 2 reacted effectively to anti-thyroid medication, however Case 3 required radioiodine therapy to achieve euthyroid status. The findings in the three instances were similar with earlier case reports in the literature; pancytopenia resolved at the same time as euthyroid status was achieved. Pancytopenia has been linked to a wide range of illnesses. Bone marrow problems (marrow failure syndromes, marrow space-occupying lesions, and inadequate marrow production), peripheral blood cell destruction, infections, and medications are among these ailments. However, only a tiny number of case reports have found a link between it and hyperthyroidism.⁵⁻⁸ Although the pathophysiology of pancytopenia in hyperthyroidism is yet unknown, it is thought that this illness is

caused by a decrease in the lifetime of blood cells as a result of immunological mechanisms, as well as accelerated destruction or sequestration of peripheral blood cells. Thyroid hormone excess can cause inefficient haematopoiesis, and the autoimmune process can cause antineutrophil or antiplatelet antibodies^{7,8}. It's unusual for pancytopenia and Graves' illness to coexist, and there's no consensus on the best therapy. Furthermore, due to concerns about drug-induced cytopenia, routine anti-thyroid therapy may be postponed⁹⁻¹⁰. Studies on related aspects of thyroid disorders were reported¹¹⁻¹⁷. In reality, pancytopenia disappeared in the majority of patients when they reached euthyroid status and began anti-thyroid medication.

Conclusion:

Even though a link between Graves' disease and pancytopenia is rare, doctors should consider Graves' disease or hyperthyroidism when encountering a patient with unexplained pancytopenia.

Pancytopenia in Graves' disease patients responds effectively to anti-thyroid medication, with hyperthyroidism reversing in the majority of cases. After a complete haematological examination, anti-thyroid medication should be explored in individuals with Graves' disease and pancytopenia. It was exciting to see the link between hyperthyroidism and pancytopenia in our case studies, which was subsequently resolved once hyperthyroidism was successfully treated. The discovery of this link might pave the way for more study into the processes underlying Graves' illness and hematological abnormalities in the future.

References :

1. Ellis H. Robert Graves: 1796–1852. *Br J Hosp Med (Lond)* 2006 Jun;67(6):313–313. Epub: 2013/27/9. eng. DOI: <http://dx.doi.org/10.12968/hmed.2006.67.6.21291>.
2. Jacobson EM, Tomer Y. The CD40, CTLA-4, thyroglobulin, TSH receptor, and PTPN22 gene quintet and its contribution to thyroid autoimmunity: back to the future. *J Autoimmun.* 28(2–3):85–98. doi: <http://dx.doi.org/10.1016/j.jaut.2007.02.006>.
3. Nayak B, Burman K. Thyrotoxicosis and thyroid storm. *Endocrinol Metab Clin North Am.* 2006 Dec;35(4):663–86. vii. DOI: <http://dx.doi.org/10.1016/j.ecl.2006.09.008>.
4. Hamsch K, Herrmann F, Fischer H, Langpeter D, Maller P, Sorger D. Changes in the blood picture in hyperthyroidism. *Z Gesamte Inn Med.* 1989;44(10):300–6.
5. Lima CSP, Zantut Wittmann DE, Castro V, Tambascia MA, Lorand-Metze I, Saad STO, et al. Pancytopenia in untreated patients with Graves' disease. *Thyroid.* April. 2006;16(4):403–9. DOI: <http://doi:10.1089/thy.2006.16.403>.
6. Hegazi M, Kumar R, Bitar Z, Ibrahim E. Pancytopenia related to Graves' disease. *Ann Saudi Med.* 2008;28(1):48–9. Epub: 2010/5/6. eng. doi: <http://dx.doi.org/10.4103/0256-4947.51769>.
7. Low B, Kok VC. Hyperthyroidism with Pancytopenia: A Case Report and Literature Review. *Formos J Endocrin Metab.* 2008;1(1):23–8.
8. Soeki T, Tamura Y, Kondo N, Shinohara H, Tanaka H, Bando K, et al. A case of thyrotoxicosis with pancytopenia. *Endocr J.* 2001 Jun;48(3):385–9. Epub: 2006/11/25. eng. DOI: <http://dx.doi.org/10.1507/endocrj.48.385>.

9. Weinzierl EP, Arber Da. The differential diagnosis and bone marrow evaluation of new-onset pancytopenia. *Am J Clin Pathol.* 2013 Jan;139(1):9–29. doi: <http://dx.doi.org/10.1309/ajcp50aeeegrewuz>.
10. Watanabe N, Narimatsu H, Noh JY, Yamaguchi T, Kobayashi K, Kami M, et al. Antithyroid drug-induced hematopoietic damage: a retrospective cohort study of agranulocytosis and pancytopenia involving 50,385 patients with Graves' disease. *J Clin Endocrinol Metab.* 2012 Jan;97(1):E49–53. Epub: 2011/11/02. eng. DOI: <http://dx.doi.org/10.1210/jc.2011-2221>.
11. Singh, V., Phatak, S., Chaudary, K., Patwa, P., 2020g. Comet tail artifact in thyroid nodule on ultrasonography: A marker of benignity. *Journal of Datta Meghe Institute of Medical Sciences University* 15, 515–516. <https://doi.org/10.4103/jdmimsu.jdmimsu-182-20>
12. Taksande, A., 2020a. Sensory nerve conduction study in patient of thyroid dysfunction in central India. *Journal of Datta Meghe Institute of Medical Sciences University* 15, 223–226. https://doi.org/10.4103/jdmimsu.jdmimsu_158_20
13. Wagh, S.P., Bhagat, S.P., Bankar, N., Jain, K., 2020b. Relationship between hypothyroidism and body mass index in women: A cross-sectional study. *International Journal of Current Research and Review* 12, 48–51. <https://doi.org/10.31782/IJCRR.2020.12129>
14. Agrawal, D., Bhake, A.S., Rastogi, N., Laishram, S., Wankhade, A., Agarwal, A., 2019. Role of Bethesda system for reporting thyroid lesion and its correlation with histopathological diagnosis. *Journal of Datta Meghe Institute of Medical Sciences University* 14, 74–81. https://doi.org/10.4103/jdmimsu.jdmimsu_76_18
15. Jose, A.M., Muntode, P.A., Sharma, S., Mathew, S.S., Nair, R.R., Solanki, S., 2019. Profile of thyroid dysfunctions among the female population in a rural community of Wardha District: A hospital-based study. *Journal of Datta Meghe Institute of Medical Sciences University* 14, S87–S91. https://doi.org/10.4103/jdmimsu.jdmimsu_231_19
16. Meshram, K., Rawekar, A., Meshram, A., Meshram, H., Vaggha, A., Ingle, S., 2020c. Nerve conduction study in early diagnosed cases of hypothyroidism in central India. *Indian Journal of Forensic Medicine and Toxicology* 14, 7094–7100. <https://doi.org/10.37506/ijfmt.v14i4.12760>
17. Neema, Acharya, Acharya Sourya, Shukla Samarth, S. A. Inamdar, M. Khatri, and S. N. Mahajan. "Gonadotropin Levels in Hypothyroid Women of Reproductive Age Group." *JOURNAL OF OBSTETRICS AND GYNECOLOGY OF INDIA* 61, no. 5 (October 2011): 550–53. <https://doi.org/10.1007/s13224-011-0079-7>.