

# PLASMAPHERESIS IN RAPID PREPARATION OF A PATIENT WITH TOXIC MULTINODULAR GOITER FOR SURGERY



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## INTRODUCTION

Thyroidectomy is the definitive treatment for toxic multinodular goiter (TXMNG). Surgery should be performed when the patient is euthyroid which decreases perioperative cardiac risks. Plasmapheresis is a procedure that removes the thyroid hormones from the circulation. It is an alternative method in case of resistance or contraindications to anti thyroid drugs. Role of plasmapheresis in the treatment of TXMNG is not fully determined in the literature. We report here a case with TXMNG who was prepared for surgery by plasmapheresis due to side effects of antithyroid drugs.

## CASE REPORT

A 54-year-old female diagnosed as TXMNG was admitted to Sisli Etfal Training and Research Hospital, Endocrinology Clinics because of a complicated hyperthyroidism. While on propylthiouracil (PTU) therapy, she exhibited erythematous, tender nodules and plaques at bilateral lower extremities. PTU was stopped. Propylthiouracil related ANCA(+) panniculitis was diagnosed based on biopsy and laboratory findings. On the 7th day of systemic steroid therapy, signs and symptoms of hyperthyroidism recurred (TSH:0,005 uIU/mL, fT4:7,77 ng/dl, fT3:9,49pg/ml). Ultrasonographic examination revealed a diffusely enlarged thyroid gland with multiple nodules, right lobe extending retrosternally. Thyroid scintigraphy with 99m technetium showed a hypoactive nodule in the left lobe and a hypoactive nodule with a hyperactive component in the right lobe.

Rest of the thyroid other than nodules showed high activity uptake. Methimazole 40 mg per day was started along with  $\beta$ -blocker. As euthyroidism couldn't be achieved on the 3rd week, plasmapheresis was decided for rapid preparation to surgery. The patient had 7 sessions of plasmapheresis performed with filtration method (Infomed, CS-220, Switzerland). The replacement fluid was 10 fresh frozen plasma for each session (totally 2000 cc). Although thyroid hormone levels could only moderately decreased, the patient was asymptomatic. The patient underwent surgery with  $\beta$ -blocker and dexamethasone treatment to avoid the thyroid storm in the perioperative period. Total thyroidectomy was performed successfully and adenomatous nodular hyperplasia was diagnosed pathologically.

**Table-1:** Values of circulating thyroid hormones observed before and after the plasmapheresis.

	fT3 (range:1,57-5,3pg/ml)	fT4 (range: 0,8-1,9ng/dl)	TSH (range: 0,4-4 uIU/mL)
At admission	17	>7	<0,01
Afterconventional therapy	15,4	>7	<0,01
After 1st plasmapheresis	7,72	5,67	0,01
After 2nd plasmapheresis	8,85	>7	0,01
After 3rd plasmapheresis	8,62	6,7	0,02
After 5th plasmapheresis	6,87	5,34	0,02
After 7th plasmapheresis	6,95	5,46	0,02

## CONCLUSION

Plasmapheresis can be considered a safe and effective alternative procedure to prepare patients with TXMNG for surgery when drug treatment fails or is contraindicated.