

# Thyroid switching and D727E polymorphism

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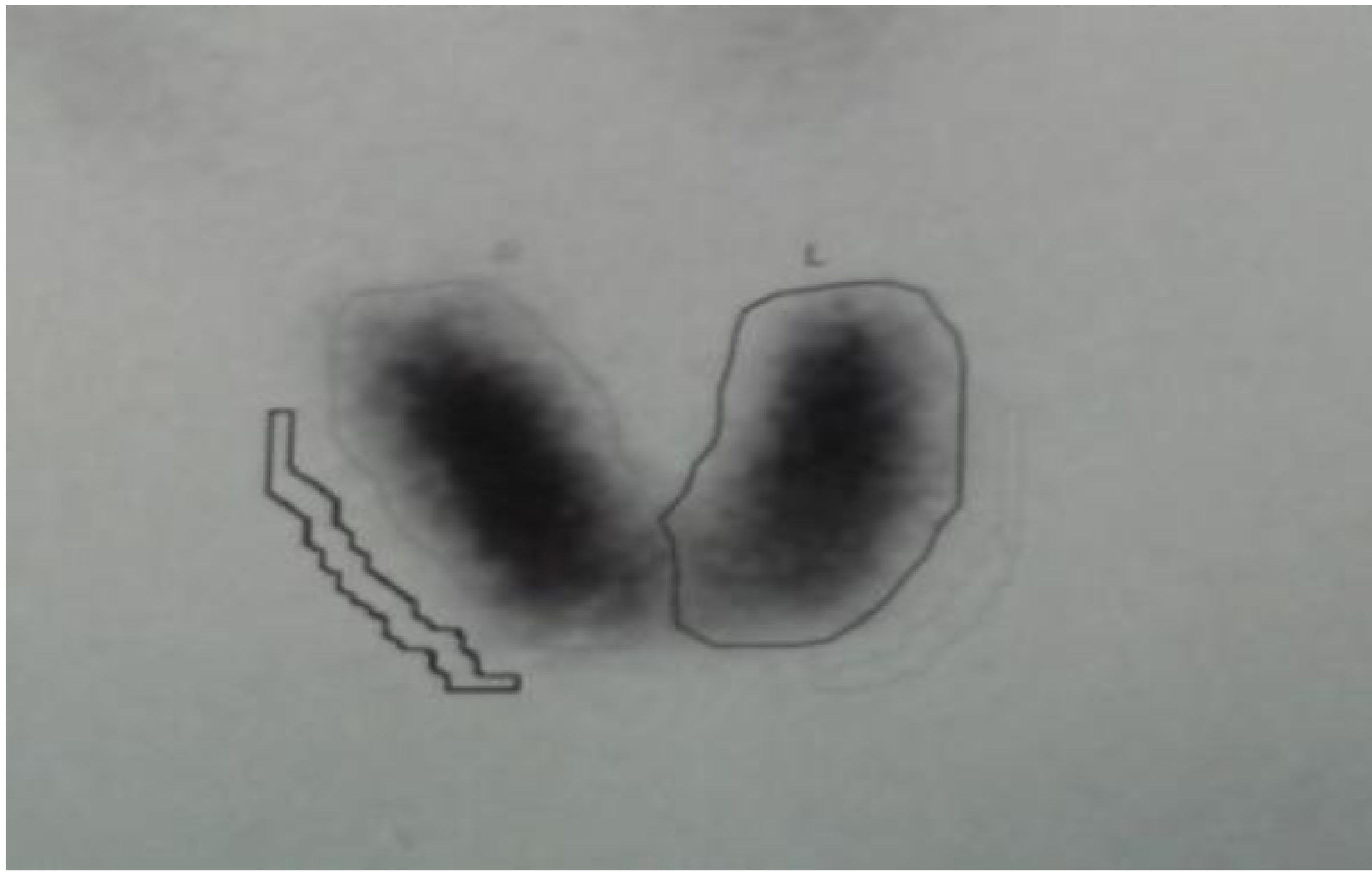
## OBJECTIVE

Graves' disease and Hashimoto's hypothyroidism are common thyroid diseases. However, occurrence of both clinical disorders one after the other in the same patient, is not common.

## CASE REPORTS

In this article, we presented two hypothyroid patients who developed clinical thyrotoxicosis during levothyroxine treatment. Both patients were treated with levothyroxine for a long time. Due to occurrence of clinical hyperthyroidism, levothyroxine treatments of the both patients were terminated. Although unmedicated follow-up for about six weeks period, recovery from thyrotoxicosis wasn't observed. Both of the patients were positive for TSH receptor antibody.

Figure 1. Tc 99m scintigraphy of thyroid of the first patient



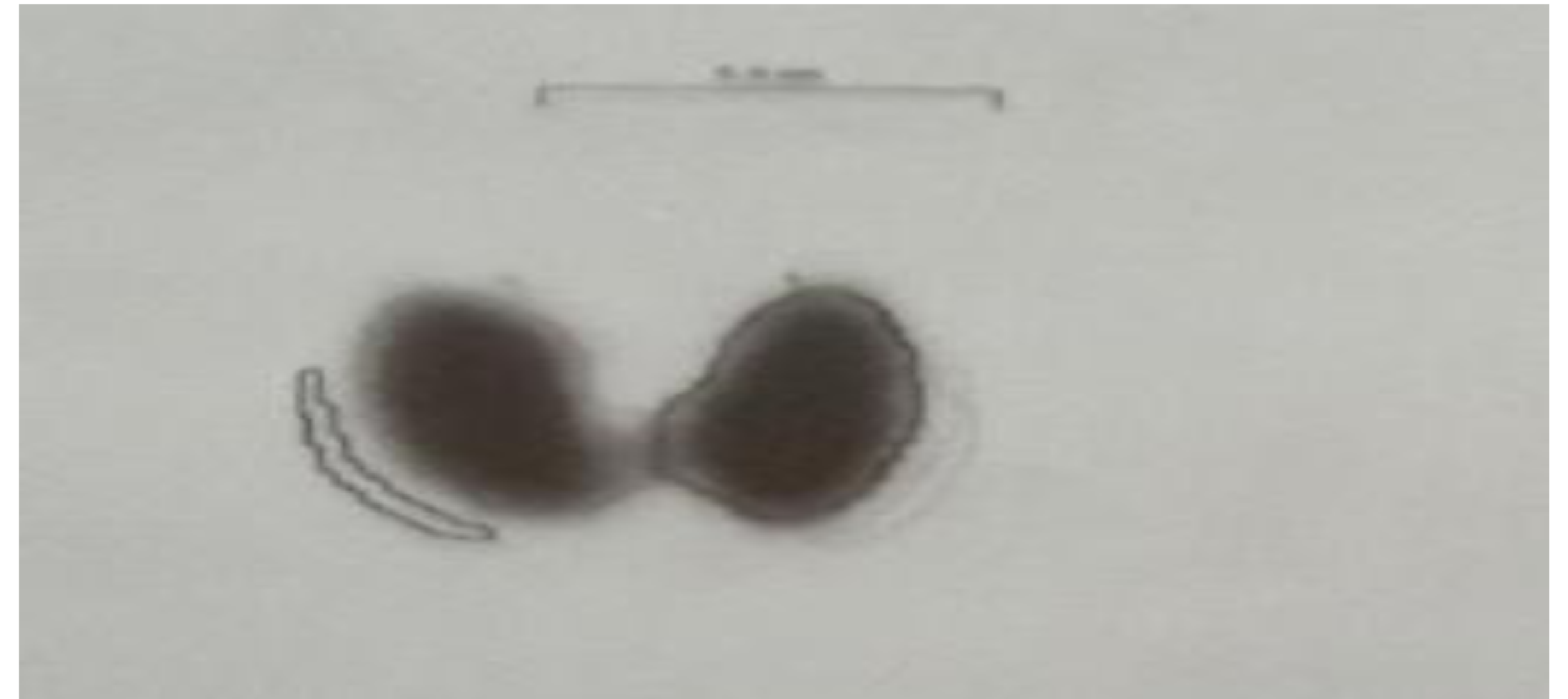
	TSH	FT3	FT4	TRAB	Anti-TPO	Anti-TG	Treatment
10.01.2013	5.50		1.16				50 mcg LT4
15.02.2013	2.96	2.75	1.42	214			50 mcg LT4
27.03.2013	3.53	2.7	1.30	120			50 mcg LT4
03.07.2013	<0.01		2.6	121			LT4 terminated
08.07.2013	0.004		3.81	210			
12.08.2013	0.004	10.11	2.97				
13.08.2013	0.004	10.43	3.21	348.7	36.09	12.33	10 mg metimazol
07.10.2013	0.070	2.55	0.74	45.97	36.15	5	10 mg metimazol
21.10.2013	0.62	2.28	0.57	106.5			10 mg metimazol

Table 1. The laboratory values of the first patient before admission, on admission and after methimazole treatment

## RESULTS

They were diagnosed as Graves' disease on the basis of clinical signs, laboratory findings and imaging techniques, thus antithyroid treatment was initiated. In both cases, TSH receptor gene sequence analysis was performed, and in both of the patients D727E homozygous polymorphism was obtained.

Figure 2. Tc 99m scintigraphy of thyroid of the second patient



	TSH	FT3	FT4	TRAB	Anti-TPO	Anti-TG	Treatment
04.11.2013	<0.01	19.01	6.31				LT4 terminated
13.12.2013	0.004	17.03	6.05				
26.12.2013	0.004	16.86	7.28	118.1	190	12.39	20 mg metimazol
24.01.2013	0.05	3.06	1.16				20 mg metimazol
18.02.2014	0.004	3.34	0.93				20 mg metimazol

Table 2. Laboratory findings of the second patient

## CONCLUSIONS

In hyperthyroid cases with the history of hypothyroidism, switching between hypothyroidism and hyperthyroidism should be kept in mind and due to D727E polymorphism, and the other TSH receptor gene mutations, if it is possible genetic analysis should be performed.

## REFERENCES

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2. Hollowell JG, Staehling NW, Flanders WD, et al. Serum TSH, T4, and thyroid antibodies in the United States population (1988 to 1994): National Health and Nutrition Examination Survey (NHANES III). J Clin Endocrinol Metab 2002;87:489

