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Postoperative Thyroxine Prophylaxis: Which Dosage? How Long?

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Dear Editor,

About : "Çalık A, Küçüktülü U, Bilgin Y, Çinel A, Alhan E, Pişkin B. Prevention of recurrences after thyroidectomy in an endemic area with prophylactic levothyroxine use. Tr J Med Sci 29: 273-277, 1999."

I have read an article entitled "Prevention of recurrences after thyroidectomy in an endemic area with prophylactic levothyroxine use" by Adnan Çalık and coworkers with a great interest. I think that Çalık's study has great value, because their center serves an endemic goiter region. Although there have been many reports in the literature on postoperative thyroxine use, only those from endemic areas could be of importance for our practice such as Çalık's or Miccoli's papers in which the authors suggested throxine prophylaxis (1).

Similar to the above studies, we have been carrying out a prospective, randomized, non-placebo controlled study with thyroxine (100 microgram daily) after bilateral subtotal thyroidectomy for non-toxic multinodular goiter. Our earlier results have shown that the mean serum TSH level of the patients with no therapy was significantly higher than that of the others who received thyroxine.

There seems to be two important questions at this point. First, "How low should we keep the TSH level?", in other word : "What is the proper dose for postoperative thyroxine?" Miccoli showed that the patients received thyroxine in a suppressive dose (2.2 to 3.0 mikrogram/kg/day) had nearly undetectable TSH levels, while the mean TSH level of the patients given a substitutive dose (100 microgram/day) thyroxine was 1.7. We have also obtained a similar result in our study. Our thyroxine group patients have had a mean TSH level of 2.6 MIU/ml (within normal range, but not suppressed). Although we have not recorded any recurrences after a short follow-up, Miccoli reported a significantly higher recurrence rate in the substitutive group than that in

suppressive group (%78 vs %21). Çalık reported a similar result in respect to recurrence rate. I would like to ask if they encountered any differences between mean TSH levels of two groups like in our study.

Second question is : "How long should thyroxine therapy be lasted?" I think this question is much more difficult than the first one. In fact, there is no correct answer. In Çalık's paper, it was stated that Hegedus in two of his papers suggested a 3-month course of thyroxine after thyroidectomy. Such a prophylaxis period is rather short. I have also read those papers. As far as I could understand Hegedus gives thyroxine therapy following an interval of three months after thyroidectomy (2). This interval is chosen because it allowed precise ultrasound evaluation of thyroid remnant size which is not possible in the immediate postoperative period. This Danish author reported his 10-year follow-up results which did not support the routine postoperative use of thyroxine (3). However, it is worth mention that Hegedus's patients did not have endemic multinodular goitre.

I realized that Çalık et al's study had a strict follow-up protocol. Therefore, they probably recorded the TSH levels of their patients after stopping thyroxine medication. I wonder if they found a rise in TSH level after discontinuation of thyroxine. This data would extremely be useful for us to determine the duration of thyroxine prophylaxis in our study.

When we consider two valuable studies from Çalık and Miccoli together with our own results it seems to be of benefit to put the patients into a thyroxine prophylaxis after thyroidectomy for endemic goiter. It is also reasonable to use a suppressive amount of thyroxine rather than a substitutive dose.

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