

Letter to Editor

Letter to the editor in response to the article “Does adrenal spraying over thyroidectomy area reduce bleeding?” by Ersoy et al. Int J Clin Exp Med 2014;7(1):274-9

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Received February 1, 2014; Accepted February 16, 2014; Epub April 15, 2014; Published April 30, 2014

We read with interest article titled “Does adrenal spraying over thyroidectomy area reduce bleeding?” by Ersoy et al [1]. This randomized study is very interesting and we would like to write following observations.

1. After thyroidectomy hemorrhage is a life threatening complication if not recognized early. Homeostasis in thyroid surgery is achieved commonly by means of conventional clamp and tie technique, diathermy. In total thyroidectomy all vessels are tied so theoretically there is 0% rate of hemorrhage unless a ligature slips. In our experience meticulous tying with suture is the best tool to prevent bleeding. Studies have shown that various causes of bleeding are arterial, venous, from muscle, soft tissue and indeterminate [2]. This spray will serve benefit only for patients who do not bleed from capillaries. Adrenaline has vasoconstrictor action through alpha- adrenergic receptor activation causing contraction of the muscular wall of the vessels, especially large arteries and small arterioles. Adrenaline will not contract lymphatic vessels or capillaries. Patients develop fluid collection or seroma in thyroid bed after surgery which is drained by drains. This is the reason of abandoning drain in many units practicing thyroid surgery regularly. Patient will have slight bulge in the lower neck because of fluid collection which will be absorbed spontaneously in two weeks time. This serous fluid is essentially lymphatic fluid from damaged lymphatic channels. There can be hemorrhage

from capillaries and both do not have any smooth muscle in their wall. Authors have not discussed the pathophysiology of adrenaline spray action in thyroid bed in initial 24 hours. Hemorrhage has been noticed even after 24 hours post operatively.

2. All the patients have undergone total thyroidectomy. There was no case of post operative hypocalcemia or voice changes in author's series. These are excellent results. After total thyroidectomy 30-45% of patients develop hypocalcemia because of various reasons and it is considered as a sequel of the procedure now a days.

3. Authors have correlated thyroid weight as the only risk factor for high drain output. Studies have shown that hematoma is associated with multiple risk factors like patients with drain, haemostatic agent, Grave's disease, large thyroid, anti platelet, anti coagulant drugs [3].

4. The data in **Table 1** and results section paragraph 1, 2, 3 did not match.

Authors response

Thank you very much for your very useful and attentive comments on our article “Does adrenal spraying over thyroidectomy area reduce bleeding?” (Int J Clin Exp Med 2014;7:274-9).

I would like to respond to your comments as follows:

Post thyroidectomy bleeding

Table 1. Patient characteristics and comparison of drainage amounts between groups

	Adrenaline (+) (n:40)	Adrenaline (-) (n:40)	P value*
Age (years)	48.75	45.38	
Gender	34 F, 6 M	32 F, 8 M	
Weight of thyroid gland (grams)	83.33	64.80	
Drainage/24 hours (ml)	36.65	51.75	0.021

*p (t test), <0.05 is accepted as significant (F: Female, M: Male).

There are a few animal studies about contractive effects of intravenous adrenaline and nor-adrenaline on lymphatics by increasing frequency and force of pumping of lymphatic vessels [4, 5]. In our study, we used adrenaline locally and we think that the significantly decreased drainage amounts in adrenaline (+) group may be the result of this effect.

Of course we have patients who had postoperative hypocalcemia or voice changes after total thyroidectomy. Fortunately, in the cases of this study, we have not experienced any.

In our study, thyroid weight was found to be significantly correlated with the drainage amounts, but we did not mention it as the only risk factor for high drain output. For that matter, we excluded patients with Grave's disease, the ones using antiplatelet or anticoagulant drugs, having very large or very small thyroid glands, etc.

Finally, thank you very much for your great attention. You are extremely right about the conflict between the **Table 1** and 1st, 2nd and 3rd paragraphs of the result section. Corrected table is below.

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References

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