



Contents lists available at ScienceDirect

## European Journal of Surgical Oncology

journal homepage: [www.ejso.com](http://www.ejso.com)

## Editorial

## Thyroidectomy in the Elderly



Kyle Joseph and colleagues from New South Wells, Australia performed a meta analysis of thyroidectomy for thyroid cancer in elderly patients using 15 studies with appropriate inclusion and exclusion criteria [1]. They chose age 60 as a cut-off point and reported higher incidence of mortality, reduced odds of overall survival, and increased risk of lymph node recurrence and distant metastasis. They also reported increased risk of complications following thyroidectomy compared to younger patients. Having read this article several times, I found it quite interesting, since thyroid surgery above the age of 60 is common in many institutions. However, there are some concerns in the elderly regarding increased Hazard Ratio and the increased risk of complications.

The issue that remains unresolved is: what is the definition of elderly? This study used age 60 as a cut-off, but many other publications in the literature have used a higher age as a cut-off. There are excellent reports of thyroid surgery in patients above the age of 75 [2–5]. The term elderly remains somewhat unclear in the literature. Some may consider 65 as a cut-off, as that is the age of Medicare eligibility and when many individuals think of retirement. What remains unclear is: what are the co-morbidities in individual patients? It is a general belief that the complications are directly related to whether it is a younger patient or older patient. The co-morbidities are much higher and of major concern in elderly patients. Also, the complications in elderly patients are difficult for the patients to handle; one serious complication may lead to many others, such as organ failure. The management of nerve injury and hypoparathyroidism may be very difficult to handle in elderly patients, and they may have swallowing difficulties and aspiration due to vocal cord paralysis. The authors have started with a large series of publications and excluded many because of the inclusion criteria. They came up with only 15 studies out of approximately 1923 studies. This probably leads to a bias. Among these 15 studies, the number of patients included ranges from 22 to 2833 for review and analysis. Interestingly, there are only 3 studies considered for recurrence in terms of Hazard Ratios, 4 studies considered for post-operative complications in terms of odds ratios, and 7 studies for mortality in terms of Hazard Ratios. One needs to keep this in proper perspective when the data is analyzed. Thyroid cancer is generally considered to be a slow growing tumor. However, in elderly patients, it may be much more aggressive. Generally, the overall prognosis is much poorer in elderly patients.

The prognostic factors in thyroid cancer are very well described from several publications around the world. Age consistently remains to be an important prognostic factor, which is why it is included in the prognostic and risk group strategy of thyroid cancer. Age 45 was used as a cut-off in the risk group analysis until January 2018, when the age cut-off was extended to 55. There was no

significant outcome difference between the age of 45 and up to 55. This is the only human cancer where age is included the staging system, and all patients below the age of 55 are stage I or II, with stage II indicating distant metastasis.

The authors have clearly described higher incidence of loco-regional and distant metastasis in elderly patients. They have reported increased mortality rate [Hazard Ratio 1.95], reduced odds of overall survival [Odds Ratio 0.1], and reduced risk of recurrence [Hazard Ratio 4.84]. They have also reported increased risk of complications [Odds Ratio 1.82], compared to patients in the younger cohort after thyroidectomy. Whether this is related to the aggressiveness of thyroid cancer or the stage of presentation at initial evaluation remains unclear. The radicality of the surgery generally does not change between young and older patients. However, the risk of complications may be slightly higher in older patients due to aggressiveness of histology, infiltration into the surrounding structures, and possible higher incidence of extrathyroidal and extranodal extension of the disease [6]. Even though the authors have reported higher incidence of issues in patients above the age of 60, it is common in clinical practice to operate on patients from age 60 to 80. One needs to be cautious in operating on patients above the age of 80, primarily because of co-morbidities and cardiac and pulmonary issues. Patients above this age are referred to as super elderly, and the decisions need to be made based on the extent of disease, biology of thyroid cancer, risk of future progression of disease leading to serious consequences, and the risk of treatment. However, from my review of the literature, it appears that majority of the surgeons would feel very comfortable operating on patients above the age of 60. Whenever we see a patient above the age of 80, we always re-visit the discussion about the complications of surgery, risk of recurrence, and the ability of the patient to handle surgical complications, with or without treatment, versus continued monitoring. Obviously, these patients will require appropriate pre-operative evaluation with a dedicated review of cardiac issues and other medical problems. There are always some cardiac risks that patients and the treating physicians need to balance, which may be difficult to predict. Many of these patients may have had cardiac stents requiring anti-coagulation and aspirin supplements. Even though there is a consensus that most patients could be operated while they are taking aspirin, many thyroid surgeons would feel somewhat uncomfortable to operate on a patient while he or she is on aspirin. The issue is not related to higher risk of bleeding but difficulty in controlling the bleeding once it occurs. The pressure effect to control the bleeding is not applicable in thyroid surgery, and one may need to bring the patient back to the operating room for controlling the expanding hematoma. Elderly patients need to be monitored carefully

24–48 hours after surgery and may not be considered optimal individuals for outpatient thyroidectomy. The decisions regarding extent of thyroidectomy, neck dissection, etc. should be made based on the extent of the disease rather than the patients age.

In view of this, the risk of recurrence should not have any effect due to age, except that elderly people may have more aggressive thyroid cancer and may present in advanced stage of thyroid cancer, aggressive histology, and the biology of thyroid cancer. The decisions about lobectomy versus total thyroidectomy should be made very critically based on initial extent of the disease, risk of complications related to nerve injury or hypoparathyroidism, and the role of radioactive iodine. The radioactive iodine generally does not work very well in elderly patients due to overall aggressive histology. Many of these patients may have severe kyphosis, which may lead to poor exposure of the thyroid gland. The surgery may be quite difficult, both for exploration of the thyroid gland and neck dissection, if indicated.

Even though we do not have a firm consensus as to what defines elderly, the authors used age 60 as cut-off and analyzed the literature suggesting higher risk of recurrence and complications. This needs to be kept in mind every time we see an elderly patient with thyroid cancer or any elderly patient undergoing surgical intervention. We need to adhere to the old principles of surgery: let the treatment not be worse than the disease, and “*primum non nocere*”, first do no harm.

### Conflicts of interest

None.

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Available online 17 August 2018