

Identification of high risk patients with Incidental Papillary Microcarcinoma of Thyroid helps in deciding appropriate management.

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Introduction:

The incidence of Papillary microcarcinoma (PMC) or Papillary Microtumour (PMiT) is increasing as a result of better FNA cytology sampling under ultrasound guidance and also with better management. Papillary microcarcinoma can account up to 30 - 46% of all papillary carcinoma of thyroid^{1, 2, 3}. PMC is more common in women³. There is lack of consensus regarding need for surgical treatment due to excellent prognosis, with Disease Specific survival of over 99% at 10 and 15 years^{4,5}. Patients subjected to surgery in a series had multifocal PMC in over 40% and lymph node metastases were seen in over 50% of patients⁶. The patients at higher risk of disease related death could be identified with associated risk factors, which could guide targeted aggressive therapy³.

Methods:

A retrospective review of all cases of PMC diagnosed over 9 years (2006 to 2014). 30 cases were identified from the Histopathology coding. PMC was confirmed either based on the histology report or the size of the largest tumour reported (10mm or less). Clinical notes, laboratory reports and trust's MDT software portal were reviewed for relevant information.

Results:

N=30, F:M= 23:7. Mean age: 49yrs (range: 20 to 74) Papillary carcinomas (9 years) n=113
PMC= 30 of 113 (26.5%).

Lump in the neck (26.7%) and Multinodular goitre (23.3%) were the commonest reasons for evaluation (fig 1).

Previous irradiation to neck (laryngeal ca): n=1 Family history of thyroid cancer: n=1

FNAC: mean ≈1/ patient (Thy3 to Thy5, n=11). Repeat FNA (n=10): change to the higher Thy category n=3. Biopsy (n=5): no change in category.

Initial surgeries: Total thyroidectomy ± lymph node dissection and lobectomy ± Isthmectomy were the commonest.

Incidental PMC: n=21 (after exclusion of those with diagnostic or suspicious cytology/histology). Further treatment of these patients is shown in table 1.

Presence of Risk factors: 9 of 21 patients (size 6-10mm, multifocality, extrathyroidal spread and infiltrative growth pattern). Number of risk factors varied between 1 and 4 (fig 2). Size and multifocality were the commonest (fig3).

Lymph node dissection: n=3 (2 with other risk factors). Evidence of spread: n=1

Patients with risk factors: initial total thyroidectomy n=5; completion thyroidectomy n=4.

Radio-active iodine ablation therapy n=4 (fig 4). One other patient without risk factor received RAI therapy due to associated Oncocytic neoplasm being likely malignant.

TSH suppression therapy: 17 of 21 patients TSH <0.1 was achieved: n=6

Only 4 patients with risk factors achieved this with in the first 12 months.

2 deaths were recorded during this period, both due to associated non-thyroidal malignancies.

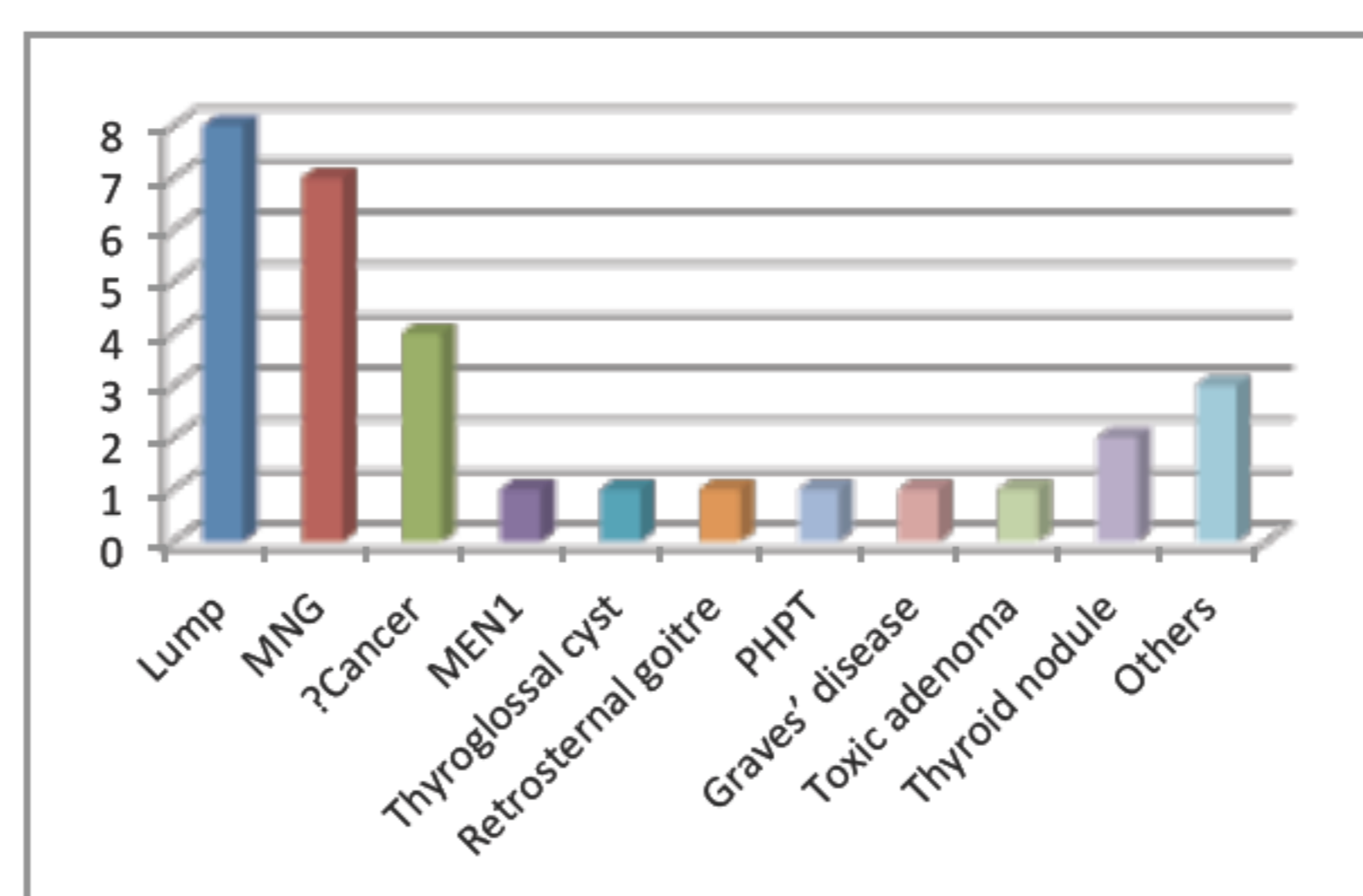


Figure 1: shows the initial clinical diagnosis which led to evaluation

Table 1: Management of 21 patients with Incidental PMC

Incidental PMC	N=
Initial total thyroidectomy	7 (33.3%)
Completion thyroidectomy	5 of 14 (35.7%)
RAI therapy	5

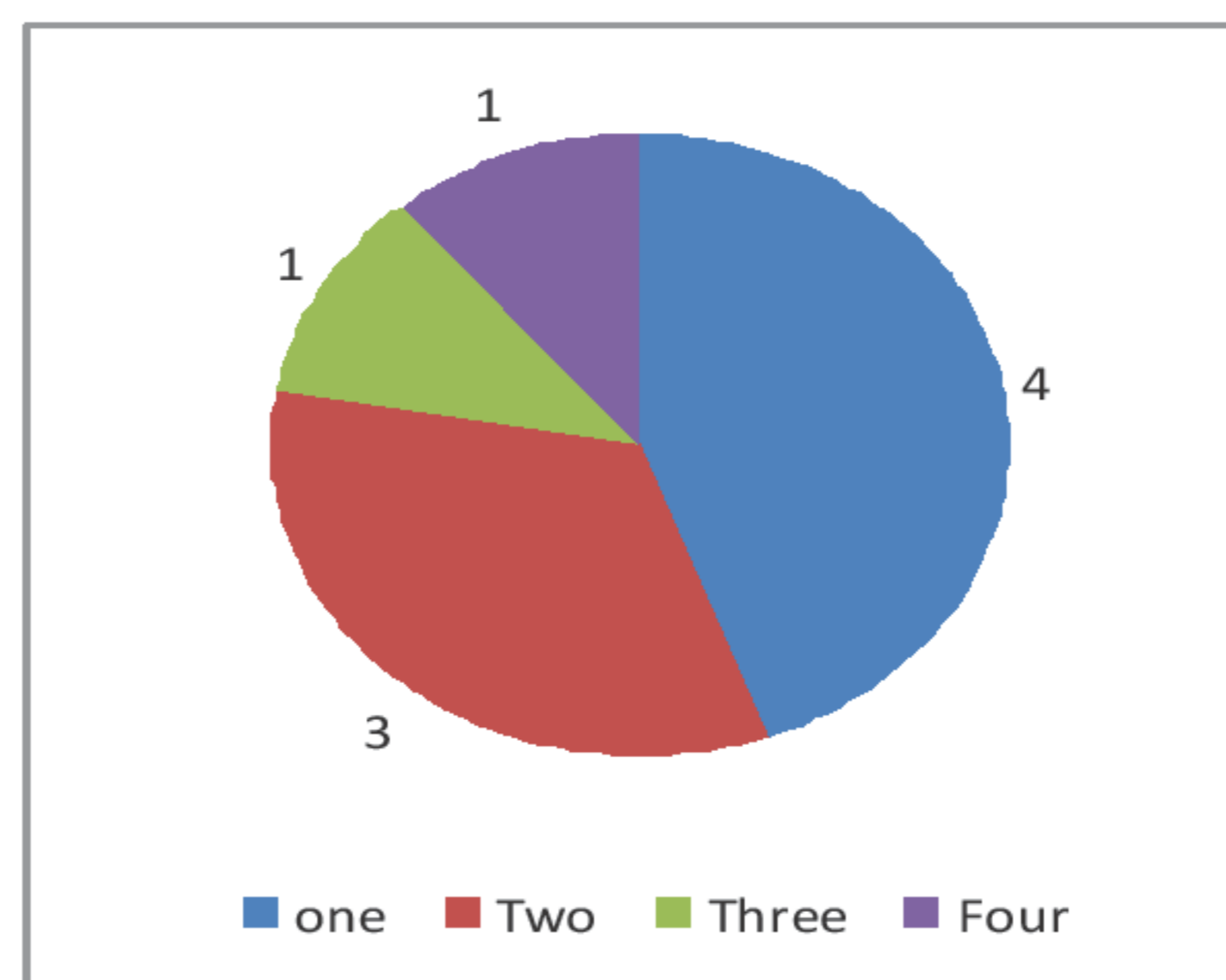


Figure 2: Number of risk factors in the 8 patients

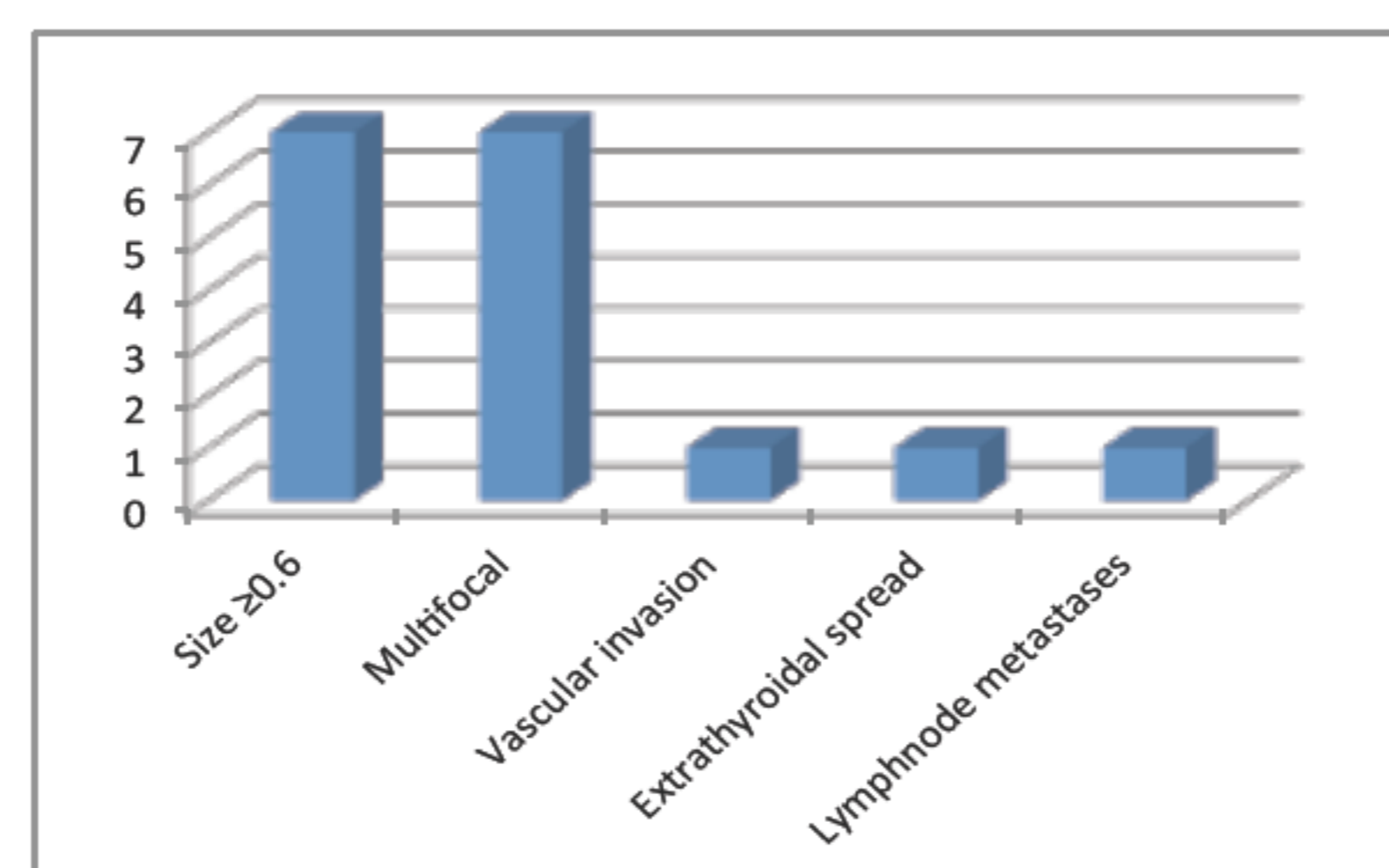


Figure 3: Shows the different risk factors seen in our cohort of patients, including the frequency of each risk factor.

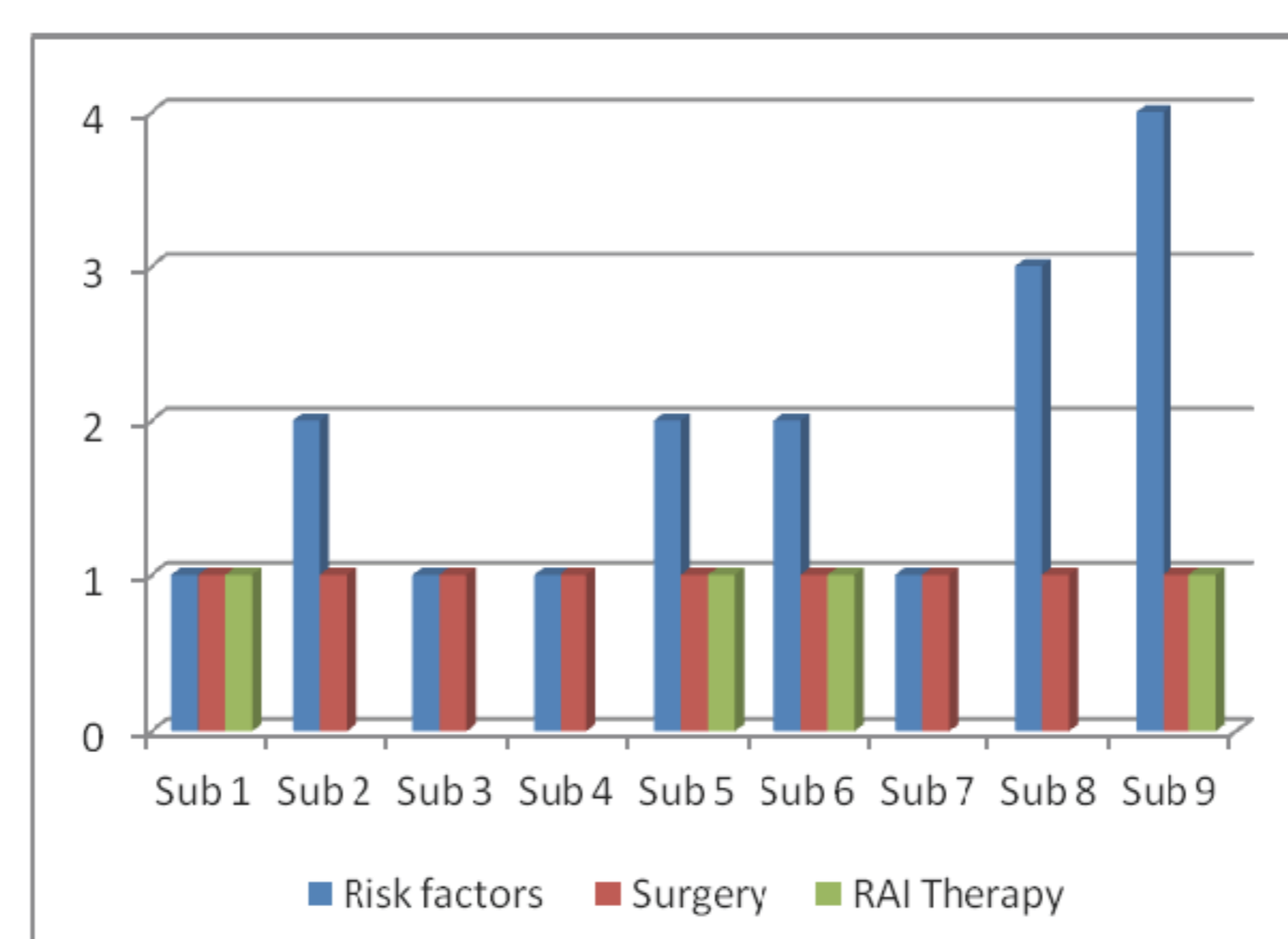


Figure 4: Showing the subjects with risk factors and the treatment modalities. Blue bars representing the number of risk factors in each subject. Red bars representing surgical treatment, either initial total thyroidectomy or completion thyroidectomy. Green bars representing RAI therapy post surgery.

Discussion:

Patients with PMC have excellent overall and disease specific survival (DSS), to the extent of 99.9% at 10 & 15 years⁵. This has shown to be not different with extent of thyroidectomy or even between those receiving RAI and those who did not. The presence of two or more risk factors has been shown to be strongly associated with cancer-related mortality⁴. In a large cohort from USA, age greater than 45 years, male sex, African American or minority race, node metastases, extrathyroidal invasion and distant metastases were considered to be significant risk factors for overall survival⁴. Hence it would be imperative to identify associated risk factors to decide on the extent of surgery and RAI therapy.

In our cohort, though risk factors were considered to decide on further treatment including completion thyroidectomy and/or RAI therapy, this was not consistent. Not all patients with 2 or more risk factors (fig 3) had total thyroidectomy and RAI therapy. Some patients with lower number of risk factors or no risk factors had total thyroidectomy. Our incidence of Incidental PMC and DSS matched with the published results on larger cohort. All of our patients were discussed in our regional Thyroid cancer MDT.

Conclusion:

1. There is need to separate Incidental PMC associated with non-malignant lesions from other malignant lesions.
2. Risk factors shown to have an effect on disease specific survival should be considered in all patients in order to decide on extent of the surgery and the RAI therapy later.
3. All patients with Incidental PMC should be discussed in Thyroid cancer MDT, which is crucial in managing these patients appropriately.
4. A clear documentation and communication of decision regarding TSH suppression therapy and the target TSH level from MDT should be a standard.
5. Standardizing histological reporting to include the vascular invasion, and capsular and extrathyroidal spread is important to aid these decisions.

References:

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