THE UNEXPECTED THYROID CANCER

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Abstract:
Thyroid cancer has an increase incidence and prevalence. Aim: to evaluate the prevalence of unexpected / incidental thyroid cancer. Methods: retrospective study performed in three surgical centres, specialized in endocrine surgery. Results: 83 cases with thyroid cancer was retrospectively reviewed. Most cases were papillary cancer (54%), followed by follicular cancer (15%) and medullar cancer (4%). The incidence of unexpected thyroid cancer was 30.1%. The initial diagnosis was multinodular goiter in 14 cases and cystic or adenomatous nodule in another 11 cases. The histologic type was papillary carcinoma in 16 cases and follicular cancer in the other 9 cases. The first operation was considered adequate in 10 cases, and in 15 cases a completion thyroidectomy was necessary. The postoperative morbidity of the second operation was 13.3%: unilateral recurrent nerve palsy – 1 case and hypoparathyroidism – 1 case. The recurrence rate was 20% (!), but all cases was succesfully treated by radioactive iodine.

Conclusions: Unexpected thyroid cancer more frequent than previously thought (30.1%). A primary operation should best consist of total unilateral lobectomy for a "benign" nodule or unilateral goiter and total lobectomy associated with subtotal controlateral lobectomy for a cold nodule or multinodular bilateral goiter.

KEY WORDS: THYROID CANCER, OCCULT, DIFFERENTIATED THYROID CANCER, TOTAL THYROIDECTOMY

THYROID CANCER (n=83)

- University Hospital Antwerp (n=55)
- General Hospital Stuivenberg (n=26)
- General Hospital Hoge Beuken (n=2)

Types of Thyroid Cancer

<table>
<thead>
<tr>
<th>Cancer Type</th>
<th>Cases</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Papillary cancer</td>
<td>45</td>
<td>54</td>
</tr>
<tr>
<td>Follicular cancer</td>
<td>13</td>
<td>15</td>
</tr>
<tr>
<td>Medullar cancer</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Anaplastic cancer</td>
<td>7</td>
<td>8</td>
</tr>
<tr>
<td>Thyroid lymphoma</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>Angiosarcoma</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Insular carcinoma</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Metastatic cancer in thyroid</td>
<td>4</td>
<td>4</td>
</tr>
</tbody>
</table>

Varieties of thyroid cancer: terminology
- Suspected cancer - cold nodule (15% malignant)
- any nodule with multiple satellite lymph nodes
- Expected cancer - positive fine needle or core biopsy of any nodule
- equivocal biopsy of nodule with satellite lymph nodes
- Unexpected cancer - multinodular goiter
- cystic or "warm" nodule
- cold nodule with negative or equivocal FNAB

Frequency of unexpected thyroid cancer

- Röher (1990) 11/89 (12.3%)
- This series 25/83 (30.1%)
### CLINICAL DIAGNOSIS in patients with unexpected cancer (n=25)

<table>
<thead>
<tr>
<th>Diagnosis</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multinodular goiter</td>
<td>14</td>
</tr>
<tr>
<td>Cystic or adenomatous nodule</td>
<td>11</td>
</tr>
</tbody>
</table>

### Histologic type of unexpected cancer (n=25)

<table>
<thead>
<tr>
<th>Tumor Type</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Papillary thyroid CA</td>
<td>16</td>
</tr>
<tr>
<td>Follicular thyroid CA</td>
<td>9</td>
</tr>
</tbody>
</table>

### RESULTS OF INVESTIGATIONS performed in patients with unexpected cancer (n=25)

1. **Thyroid function**
   - Euthyroid: 23
   - Hyperthyroid: 1
   - Hypothyroid: 1

2. **Ultrasound**
   - Cystic or adenomatous lesion ± multinodular component: 13
   - Multinodular goiter: 12

3. **Scintigraphy**
   - Cold nodule: 18
   - Multinodular goiter: 7

4. **Fine needle biopsy**
   - Negative results: 15
   - Not performed: 10

5. **CT scan**
   - No suspect lesion: 4
   - Not performed: 21
   - Normal: 11
   - Elevated: 7
   - Not performed: 7

6. **Thyroglobin**
   - Elevated: 7
   - Not performed: 7

### TYPE OF FIRST OPERATION performed in patients with unexpected cancer (n=25)

<table>
<thead>
<tr>
<th>Operation</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Excisional biopsy</td>
<td>6</td>
</tr>
<tr>
<td>Subtotal lobectomy</td>
<td>3</td>
</tr>
<tr>
<td>Total lobectomy + isthmectomy</td>
<td>4</td>
</tr>
<tr>
<td>Total lobectomy + subtotal control lobectomy</td>
<td>5</td>
</tr>
<tr>
<td>Bilateral subtotal lobectomy</td>
<td>6</td>
</tr>
<tr>
<td>Total thyroidectomy</td>
<td>1</td>
</tr>
</tbody>
</table>

### Macroscopic appearance at first operation

- **No cancer suspicion**: 20
- **Suspect appearance**: 5
  - Immediate total excision: 1
  - Frozen section: 4
  - Positive: 2
  - Negative: 2
## Histologic type of unexpected thyroid cancer (n=25)

<table>
<thead>
<tr>
<th>Type</th>
<th>Papillary (n=16)</th>
<th>Follicular (n=9)</th>
</tr>
</thead>
<tbody>
<tr>
<td>T1 (&lt; 1 cm)</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>T2 (1 - 4 cm)</td>
<td>6</td>
<td>5</td>
</tr>
<tr>
<td>T3 (&gt; 4 cm)</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>N0 (no LN)</td>
<td>14</td>
<td>9</td>
</tr>
<tr>
<td>Nia (ipsilater. LN meta’s)</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Nib (bilater. or contralat. LN meta’s)</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

## SURGICAL ATTITUDE IN CASE OF MICROSCOPICALLY DETECTED THYROID CA (n=25)

<table>
<thead>
<tr>
<th>Resection considered inadequate</th>
<th>Resection considered adequate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Local excision</td>
<td>TT</td>
</tr>
<tr>
<td>STL</td>
<td>TL + Isthmus</td>
</tr>
<tr>
<td>STL + STL</td>
<td>TL + STL</td>
</tr>
</tbody>
</table>

| Total                      | 15 | 10 |

## TYPE OF SECOND OPERATION in patients with thyroid cancer proven after first intervention (n=15)

- Total thyroidectomy: 12
  - without Rad. neck diss. 11
  - with Rad. Neck diss. 1
- Total lobectomy + subtotal contralateral lobectomy 3

## MORBIDITY OF SECOND RADICAL OPERATION

- Recurrent nerve lesion (unilateral) 1
- Permanent hypoparathyroidism 1

## ADJUVANT THERAPY

- Radioactive iodine treatment 14/25
- Hormonal treatment 25/25
- External radiotherapy /
FOLLOW-UP AND RECURRENCE RATE (1-10 years) (n=25)

Follow-up: all patients alive
Recurrence rate:
- T2: 2/6 (TT/TL/STL) 0/5
- T3: 0/5 1/3 (STL+STL)
- T4: 1/5 (TL+STL) 1/1 (TL+STL)

Recurrence:
- All patients had initially N0
- All patients were successfully treated with radioactive iodine

CONCLUSION

Unexpected cancer of thyroid
- Multinodular goiter
- Cystic or warm nodule
- Negative, unconvincing or unperformed FNA biopsy

1st operation
- Cancer suspicion
- No cancer suspicion

CONCLUSION

No cancer suspicion
Operating according to actual pathology
- TL+STL
- TL
- STL
- STL+STL

Paraffin section
- No reoperation
- Reoperation according to tumor stage
- T1 & T2
- T3 & T4
- TT or TL+STL

CONCLUSION

Unexpected thyroid cancer more frequent than previously thought (30.1%)

A primary operation should best consist of
- TL for a “benign” nodule or unilateral goiter
- TL + STL for a cold nodule or multinodular bilateral goiter