Thyroidectomy is a commonly performed procedure with increasing attention devoted to improving scar results and placement. Multiple advances in thyroidectomy, which may improve scar aesthetics and cosmesis, have been developed over the past 10 years, including minimally invasive video-assisted thyroidectomy (MIVAT) with smaller mid-cervical incisions and, more recently, robotic-assisted thyroidectomy via axillary incisions or through standard facelift incisions.Outside of the United States, cultures known to have specific concerns with scarring in the mid-cervical neck have found great success with minimally invasive techniques. The effect of a visible thyroidectomy scar on patients in the United States has not been evaluated. As healthcare systems are increasing emphasis on quality of care, and patient satisfaction is becoming evermore important as an outcomes measurement for quality, an understanding of patient satisfaction after thyroidectomy is necessary. The purpose of this study is to determine the long-term impact of mid-cervical thyroidectomy scars on patients' satisfaction with surgery and quality of life.

Materials and Methods

Patient Population

- **Inclusion criteria:**
  - Patients who underwent a total or hemithyroidectomy +/- isthmusectomy > 18 years old (n=965)
- **Exclusion criteria:**
  - Subjects < 1 year postoperative
  - Previous thyroidectomy or neck surgery
  - Additional neck procedures at the time of thyroidectomy
  - Post-operative complications of thyroidectomy requiring re-opening of the incision
  - Hypertrophic scarring or keloid formation
  - Re-excision or revision of thyroidectomy scar.
  - Demographic and operative data were obtained from the electronic medical record

Measure

- **The Patient Scar Assessment Questionnaire (PSAQ)** validated by Durani, et al was used
- Tests 4 validated domains for linear scars: Appearance, Scar Consciousness, Satisfaction with Appearance and Satisfaction with Symptoms
- Scores range from 0 to 100, with higher scores indicating high level of satisfaction

Statistical Analysis

- Data for multiple questionnaire scores and perceived scar length were analyzed using one-way variant analysis.
- Independent samples t-testing was performed on multiple variables among the patient operative and demographic data (p < 0.05).

Results

- **69 patients** were contacted and agreed to complete a validated telephone survey (Table 1)
  - Figure 1 reveals distribution and means of PSAQ scores
  - 97% were satisfied with overall appearance of scar
  - 91% satisfied with all scar outcomes
  - 86.95% reported scar appearance as "good" or "excellent"
  - 18.8% were at least "slightly self-conscious"
  - 94.2% reported they never try to hide scar
  - 90% were not likely at all to undergo revision
- Females were found to have significantly higher TSS (p=0.025), CS (p=0.048), and SAS (p=0.026)

Table 1. Patient population demographics. N = 69

<table>
<thead>
<tr>
<th>Measure</th>
<th>Mean</th>
<th>Standard Deviation</th>
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<tbody>
<tr>
<td>Appearance score</td>
<td>7.5 (SD 2.15)</td>
<td>2.45</td>
</tr>
<tr>
<td>Scar consciousness score</td>
<td>6.5 (SD 1.25)</td>
<td>0.68</td>
</tr>
<tr>
<td>Satisfaction with appearance score</td>
<td>7.8 (SD 1.25)</td>
<td>0.68</td>
</tr>
<tr>
<td>Satisfaction with symptoms score</td>
<td>8.5 (SD 1.25)</td>
<td>0.68</td>
</tr>
</tbody>
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Table 2. *p* values obtained from the PSQA - Total N = 97.

Discussion

Studies suggest that surgeons judge scar aesthetics more critically than patients and therefore place more emphasis on scarless or alternative techniques.

Comparisons of MIVAT to conventional thyroidectomy have shown that a smaller incision provided more favorable cosmetic results, though these studies are limited by sample size, lack of validated scar assessment measures, and long-term follow-up.

Our results, however, show that there is no significant difference in patient satisfaction with appearance among perceived scar length groups, though scar consciousnes may be affected by scar length.

Perceived scar length is likely dependent on other patient factors, such as psychosocial status and prior experiences.

Bohm et al. investigated the long-term cosmetic results after traditional mid-cervical thyroidectomy. Of 90 patients examined, more than 90% of this cohort reported their cosmetic results as excellent or good. Women were slightly more critical about their results (p = 0.06). Our results are consistent with these findings.

The following may have an impact on thyroidectomy scar appearance: marking the patient preoperatively while sitting up, resecting skin edges during closure, avoidance of subplatysmal flap elevation, avoidance of drain placement, and usage of Dermabond. Studies comparing suture techniques and types of suture have been inconclusive.

Conclusions

The majority of patients who underwent conventional thyroidectomy are generally satisfied with their mid-cervical thyroidectomy scars, and that these scars do not have a significant impact on most patients’ lives.

Scar length may play a role in patients’ awareness and self-consciousness of their scar, though it does not affect scar satisfaction. In addition, female patients may have a higher propensity to be dissatisfied and concerned with scar aesthetics.

References