Malignancy in asymmetrical but otherwise normal palatine tonsils

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Abstract
An abnormally large tonsil may be a sign of malignancy. We retrospectively analyzed the case files of 87 patients who had asymmetrical sized but otherwise normal tonsils and no risk factors for cancer to determine if asymmetry is associated with a higher incidence of malignancy. We found 2 cases (2.3%) of malignancy among these patients. One patient had high-grade non-Hodgkin’s lymphoma in the larger tonsil, and the other had lymphocyte-rich Hodgkin’s lymphoma. Both patients were older than 50 years, and neither had a history of recurrent tonsillitis. We believe that although the incidence of cancer in our series was small, it is significant. Therefore, we recommend routine excision of abnormally large tonsils. Moreover, when making such a recommendation to a patient, it is essential that the patient have a clear understanding of the risk and benefit of having a tonsil removed solely because of asymmetry.

Introduction
The common indications for tonsillectomy are recurrent tonsillitis, peritonsillar abscess, snoring, and obstructive sleep apnea. In the absence of clinical suspicion of malignancy, routine histopathologic examination of tonsil specimens is not usually undertaken because unsuspected pathologic findings of clinical significance are extremely rare. Patients who do have clinical features suspicious for malignancy—such as an obvious tumor, tonsillar mucosal changes, bleeding, cervical lymphadenopathy, a history of cancer, etc.—require an urgent tonsillectomy for histologic analysis to confirm or rule out the diagnosis.

Asymmetrically sized tonsils—even in patients who have no symptoms or risk factors for malignancy—may also be considered suspicious for malignancy and therefore an indication for tonsillectomy. In this article, we describe our study to determine the incidence of malignancy in patients with asymmetrical tonsils.

Patients and methods
We based our study on all tonsillectomies that had been performed at our hospital from January 1990 through December 2001. We retrospectively obtained from our hospital's pathology database the histology reports regarding all tonsillectomy specimens that had been sent for histopathologic examination during that period. Because tonsils removed at operation in our department are not routinely sent for histology, we also reviewed all available case notes to ascertain the reasons for the histology request.

From the available reports, we noted each patient's age and sex, any history of recurrent sore throat, any mention of tonsil size asymmetry (including which side was abnormal and when the asymmetry was first mentioned), physical examination findings, and the histology results. We also noted the presence or absence of clinical features suspicious for tonsillar malignancy, such as a palpable or visible tumor, mucosal changes (e.g., ulceration, leukoplakia, or erythroplakia), cervical lymphadenopathy, unilateral signs or symptoms, unexplained weight loss, constitutional symptoms (e.g., fatigue, night sweats, or anorexia), and a history of cancer.

Prior to our endpoint analysis, we divided all the histologic cases into three groups:

- Category 1 cases involved healthy patients who had asymmetrical but otherwise normal tonsils and no other features suspicious for malignancy.
- Category 2 cases involved patients with asymmetrical tonsils who did have other features suspicious for malignancy.
- Category 3 cases involved those who had clinically symmetrical tonsils and/or benign-appearing tonsillar surface lesion, such as a mucous retention cyst or papilloma.

Results
During the 12-year study period, 4,256 patients had under-
gone tonsillectomy at our hospital. A total of 230 patients (5.4%) had a tonsillectomy specimen sent for histology. We excluded 29 of these cases from our analysis because records were either unavailable (n = 21) or incomplete (n = 8). Of the remaining 201 cases, 87 (43.3%) fell into category 1, 59 (29.4%) fell into category 2, and 55 (27.4%) fell into category 3. The category 2 and 3 cases were excluded from further analysis.

The 87 patients in category 1 who served as the study population accounted for 2.0% of all tonsillectomies. This group was made up of 38 males and 49 females, aged 3 to 80 years at operation (mean: 34). A total of 19 patients (21.8%) were aged 15 years or younger, 40 patients (46.0%) were aged 16 through 40 years, and 28 patients (32.2%) were 41 years or older.

The larger tonsil was on the right side in 41 patients (47.1%) and on the left in 46 patients (52.9%). The asymmetry had been first documented by a family physician in 33 cases (37.9%), by an otolaryngologist at an outpatient clinic in 31 cases (35.6%), at operation in 21 cases (24.1%), and by a maxillofacial specialist in 2 cases (2.3%).

Sixty patients (69.0%) had a history of recurrent tonsillitis and 21 (24.1%) did not; no mention of such a history was made in the other 6 charts (6.9%).

By far, the most common histologic diagnosis was reactive follicular hyperplasia (table). Malignancy (lymphoma) was found in 2 patients (2.3%).

Patient 1. A 65-year-old man had been referred to our hospital by his family physician in June 1995 with an 8-month history of a left tonsil enlargement. He had no history of recurrent tonsillitis and no other suspicious clinical features. He was seen in the clinic 3 weeks later by one of the authors (D.L.B.), who recommended excision. The patient declined initially, but he agreed to undergo the operation, and surgery was performed 2 weeks later. Histopathologic examination of the tonsil revealed the presence of high-grade non-Hodgkin’s lymphoma of the B cell type.

Two weeks postoperatively, the patient was seen by an oncologist, who classified the malignancy as clinically localized stage IE disease. Findings on routine blood tests, including the complete blood cell count, were normal. Staging computed tomography (CT) of the chest, abdomen, and pelvis, and magnetic resonance imaging (MRI) of the neck detected no evidence of any disease. The patient was therefore treated with combination chemotherapy and local radiotherapy. He remained symptom-free for 2.5 years but was subsequently admitted with unresectable large bowel cancer. He died 6 weeks later. The postmortem diagnosis was a perforated tumor of the sigmoid colon consistent with a lymphoma with associated diffuse peritonitis.

Patient 2. A 52-year-old woman had been referred to us by her family physician in May 2001. She had a long-standing history of globus pharyngeus and a midline cyst, which had been diagnosed as a thyroglossal cyst 9 years earlier. The thyroglossal cyst had remained unchanged. The patient was seen by one of the authors (S.J.W.), who noticed a left tonsil hypertrophy in addition to the thyroglossal cyst. Neither the patient nor her family physician had been aware of the unilateral hypertrophy. The patient had no history of recurrent tonsillitis and no other suspicious clinical features. She declined preoperative MRI of the neck, citing claustrophobia. The tonsil was removed 6 weeks later. Histopathologic examination revealed that the patient had lymphocyte-rich Hodgkin’s lymphoma. Her globus symptoms persisted after the operation.

The patient was followed up by an oncologist, who found no other clinical evidence of disease and therefore staged it as IE. As a result of delays on the part of the patient, staging CT of the chest, abdomen, and pelvis was not carried out until 3 months later. By that time, CT detected evidence of disease in the right axillary and paratracheal area, and the disease was restaged as IIA. Ultrasonography of the neck confirmed the long-standing thyroglossal cyst and the absence of other neck nodes. The patient was treated with chemotherapy and involved-field radiotherapy to the right axilla and tonsil. Follow-up CT of the chest, abdomen, and pelvis demonstrated no evidence of lymphoma. She remained disease-free at the 3-year follow-up.

Discussion

In view of the fact that tonsillectomy is such a common surgical procedure, subjecting all tonsil specimens to histopathologic examination would place a significant drain on medical resources. Reporting from a center where every tissue removed at surgery was sent for histologic examination, Daneshbod et al found that tonsillectomy

<table>
<thead>
<tr>
<th>Histology</th>
<th>n (%)</th>
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<tbody>
<tr>
<td>Reactive follicular hyperplasia</td>
<td>57 (65.5)</td>
</tr>
<tr>
<td>Increased fibrosis</td>
<td>6 (6.9)</td>
</tr>
<tr>
<td>Normal or unremarkable</td>
<td>6 (6.9)</td>
</tr>
<tr>
<td>Acute inflammation</td>
<td>5 (5.7)</td>
</tr>
<tr>
<td>Chronic inflammation</td>
<td>5 (5.7)</td>
</tr>
<tr>
<td>Cyst or cystically dilated crypt space</td>
<td>4 (4.6)</td>
</tr>
<tr>
<td>Tiny papilloma</td>
<td>2 (2.3)</td>
</tr>
<tr>
<td>Lymphoma</td>
<td>2 (2.3)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>87 (100)</td>
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specimens accounted for at least 15% of all specimens. In our study, only 5.4% of our tonsillectomy specimens were sent for histology.

Two studies have demonstrated that only rarely is an occult malignancy discovered in a tonsillectomy specimen when it was not suspected prehistorically: Daneshbod et al4 reported only 1 such malignancy in 15,120 specimens, and Alvi and Vartanian5 found 1 case in 288. Four other studies found no malignancies on histopathologic evaluation in patients who had no risk factors, including size asymmetry.1,4-6 It is our belief that a thorough clinical assessment is sufficient to identify patients at risk for these malignancies.

In our study, the incidence of malignancy in patients with asymmetrical but otherwise normal tonsils was 2.3% (2/87). This rate rises to 7.1% (2/28) when patients 40 years and younger (n = 59) are excluded and to 7.4% (2/27) when patients with a history of recurrent tonsillitis (n = 60) are excluded.

To the best of our knowledge, our study is the largest series of tonsil asymmetry that involved all age groups. It also covered the longest period of time, and its exclusion criteria were the most rigorous. Reiter et al studied a series of 31 adults with tonsil asymmetry over a period of 7 years (excluding patients who had a focal mass or ulceration and those who had undergone a lymphoma workup); they found 2 malignancies (6.5%).5 However, they did not exclude patients with cervical lymphadenopathy, dysphagia, constitutional symptoms, unexplained weight loss, or unilateral signs and symptoms. In a similar effort, Syms et al studied 49 patients over a period of 5 years (excluding patients with mucosal changes, cervical lymphadenopathy, a known malignancy, or a focal mass), and they also found 2 malignancies (4.1%).5 All 4 patients with malignancy in these two series had non-Hodgkin's lymphoma.

Primary lymphoma of the tonsils is nearly always non-Hodgkin's lymphoma.8-11 However, patient 2 had classic lymphocyte-rich Hodgkin's lymphoma; histology identified Reed-Sternberg cells expressing CD30 and CD20. Immunophenotyping confirmed that the lymphoid nodules were B cell in nature and that they were bcl-2 and IgD-positive. Perioperatively, the patient had no other clinical evidence of disease. However, pretreatment staging CT 3 months later delayed by the patient) revealed radiologic evidence of disease in the axillary and paratracheal areas.

The fact that both malignancy-positive patients in our study were older than 50 years when they presented is consistent with previous findings that primary lymphoma of Waldeyer's ring is a disease mainly of the older age group.8-10 The absence of a history of recurrent tonsillitis in both patients may be significant; in fact, it might represent a risk factor.

Although the incidence of malignancy in our study was small (2.3%), we believe it is significant. We therefore recommend early excision of an abnormally large tonsil, especially in patients older than 40 years and in those who have no history of recurrent tonsillitis. Such excisions would add only a few cases to the workload of an ENT surgeon and pathologist. Patients should seriously consider a recommendation for excision, and they should base their decision on a thorough understanding of both the risk of undergoing surgery and the risk of foregoing surgery.

References