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ORIGINAL ARTICLE

Clinical significance of unilateral tonsillar enlargement

Susanna Tobias Gómez,* Víctor Palomar Asenjo, Montserrat Borràs Perera, Isabel Pérez Hernández, Antonio Ruiz Giner, and Víctor Palomar García

Servicio de Otorrinolaringología, Hospital Universitari Arnau de Vilanova, Lleida, Spain

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Abstract
Introduction: Asymptomatic unilateral tonsillar enlargement is usually treated with systematic tonsillectomy under suspicion of malignancy. Due to the fact that most of the cases are benign pathologies, we set out to study the clinical signs that would help us in the diagnosis in order to avoid unnecessary tonsillectomies.
Material and methods: We reviewed 267 tonsillectomies performed from 1996 to 2006 and 30 of these were indicated because of asymmetry. We evaluated risk factors for malignancy: cervical lymphatic node enlargement, sex, age, tonsillar enlargement noticed by the patient, suspicious appearance, systemic symptoms, history of malignancy, and immunocompromise.
Results: Histopathologic study revealed 80% to be benign and 20% malignant. The risk factors with the strongest association were enlargement of cervical lymphatic nodes and suspicious appearance of the tonsil.
Conclusions: Strict control of a unilateral tonsillar enlargement is possible, but it is mandatory to perform a tonsillectomy when the appearance of the tonsil raises suspicions or there are enlarged lymphatic nodes.

PALABRAS CLAVE
Asimetría amigdalina;
Amigdalectomía;
Hiperplasia folicular linfoide;
Cáncer de amígdala;
Linfoma

Significación clínica de la asimetría amigdalina

Resumen
Introducción: El aumento unilateral asintomático de una amígdala palatina suele tratarse con amigdalectomía sistemática por sospecha de malignidad. Ante la mayor frecuencia de procesos benignos, se estudian datos clínicos que puedan servir como factores de riesgo para evitar amigdalectomías innecesarias.

*Corresponding author.
E-mail address: stobiago@hotmail.com (S. Tobias Gómez).

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Material y métodos: Se revisan 267 amigdalectomías realizadas entre 1996 y 2006, de las cuales 30 se indicaron por asimetría. Se valoran factores de riesgo, como adenopatías, ser varón, mayor de 45 años, detección por el mismo paciente, aspecto sospechoso, clínica sistémica, historia de malignidad e inmunodeficiencia.
Resultados: El resultado anatomopatológico fue de proceso benigno en el 80% de los casos y maligno en el 20%. Los factores de riesgo que muestran mayor relación con malignidad son las adenopatías y el aspecto sospechoso.
Conclusiones: Se puede realizar control estricto ante una asimetría amigdalina, aunque cuando hay factores de riesgo debemos indicar amigdalectomía.

Introduction

The unilateral and asymptomatic increase in size of the palatine tonsil (Figure 1) is usually treated with systematic tonsillectomy, due to the suspicion that it may be a malignancy. Although this palatine tonsil may be harbouring a malignancy, such as a carcinoma or lymphoma, most often it is a benign process, such as the varying depth of the tonsillar fossa (most common cause), asymmetry in the anterior pillars, chronic inflammation, chronic infection (tuberculosis, syphilis, actino-mycoses...), granulomatous diseases (sarcoidosis),[1] or benign tumours (papillomas)[2] (Figure 2).

The most common malignancy found in the palatine tonsil is squamous cell carcinoma, which in most cases is presented as a unilateral increase in size of the amygdala or as an ulceration of the mucosa coating it. Lymphomas represent the second most common malignancy in this area and often appear as a sub-mucosal mass which in its growth leads to an asymmetrical increase in size of the amygdala.[3]

Several studies have suggested the possibility of maintaining a "wait and see" attitude with the aim of avoiding unnecessary surgery and its complications. Similarly, publications have sought to establish a set of criteria in order to limit tonsillectomy to those cases with a high likelihood of a neoplastic process. In this regard, Spinou et al[2] found a relationship with malignancy in cases with ulceration, weight loss, night sweats, cervical lymphadenopathy, age over 45 years and male gender. Furthermore, Cinar[3] defines as risk factors the suspicious appearance of the amygdala, systemic symptoms, cervical lymphadenopathy, history of malignant disease or immunodeficiency.

In our study we have attempted to establish the clinical and exploratory data with the most significant relationship with malignant processes in patients who come to our consultation with tonsillar asymmetry.

Material and methods

This is a retrospective descriptive study, for which we obtained data from 267 consecutive tonsillectomies carried out at the otolaryngology service of our centre. Of all these, 30 were indicated due to tonsillar asymmetry. Among the patients operated on for tonsillar asymmetry, 21 were men and 9 women with an age range of 7-84 years (mean, 31.96).

Figure 1 Patient with very marked asymptomatic tonsillar asymmetry. It was decided to monitor its evolution, with no changes for over 2 years.

Figure 2 A case of carcinoma of the left amygdala in which we observed tonsillar asymmetry, together with ulceration of the upper part.

Table 1 Criteria for suspicion of malignancy found in each case

	Case 1	Case 2	Case 3	Case 4	Case 5	Case 6
Adenopathies	+	+	+	+	—	+
Masculine gender	+	+	+	+	+	+
>45 years	—	—	—	+	+	+
Self-detection	—	—	—	—	—	—
Suspicious appearance	Mass, ulcer	—	—	Mass	Ulcer	Ulcer
Systemic symptoms	Fever, dysphagia	—	—	—	Dysphagia, weight loss	—
History of malignant disease	—	+	—	—	—	—
Immunodeficiency	—	+	—	—	—	—

After the surgery, a pathological study was performed of the specimens obtained in all cases, both in those indicated due to tonsillar asymmetry and in those for any other indication.

With the data obtained from the anamnesis and the general physical and otolaryngological examination, we studied a total of 8 criteria for suspicion of malignancy, in order to observe their relationship with malignancy. The criteria considered are: presence of one or more palpable adenopathies, demographic criteria such as age and gender, if it was the patient who had identified the increased tonsillar size, suspicious appearance of the amygdala (mass, ulceration or changes in pigmentation), systemic symptoms (fever, night sweats, dysphagia, weight loss), and prior history of malignant or immunodeficient disease. In addition to these 8 criteria, we studied the consumption of toxic substances such as tobacco and alcohol, as they are strongly linked to the development of squamous cell carcinoma.

Six cases are compared, all with asymmetrical growth of the palatine amygdala due to a malignant process and 24 controls with asymmetric tonsillar growth without underlying neoplastic disease.

A database was created with the information obtained and the statistical package SPSS 11.5 for Windows was used for its analysis.

Results

Out of a total of 267 tonsillectomies included in the study, we observed that in 30 cases, the indication for this technique was tonsillar asymmetry, which represents 11.2% of the total.

The pathologic examination of the specimens obtained showed 80% of cases in which the asymmetry was not due to a neoplastic process, but to follicular lymphoid hyperplasia in 23 cases (76.7%) and a retention cyst of the palatine tonsil (3.3%). Thus, we found that only 20% of patients operated on with this indication were affected by a neoplasia; we obtained 5 cases (16.7%) of non-Hodgkin lymphoma and 1 case (3.3%) of squamous cell carcinoma.

On analyzing the criteria for suspicion of malignancy that we intended to study in these patients (Table 1), it was noteworthy that all patients with cancer were male. Similarly, 70% of the tonsillectomies were performed in males, a significantly higher percentage (χ^2, P=.028) than in women. In addition, it can be observed that the tonsillar asymmetry must be studied thoroughly, regardless of the age at which it appears, because we can see an equal number of cases in patients over 45 years of age as in those who are younger. Nevertheless, the average age of patients with a neoplastic process is higher in the case group (46.8) than in the control group (28.3), although differences did not reach statistical significance (Mann-Whitney U, P=.055) due to the small number of cases obtained.

From the data obtained in the anamnesis, we note that the previous history of malignancy or immunodeficiency is not a fact to be taken into account, since both criteria were present in only 1 of our patients and appear in a small number of patients (16.6%). Systemic symptoms reported by patients do seem to relate more significantly with the possibility of finding a neoplastic process underlying the tonsillar asymmetry, as we found it in 2 of our 6 patients (33.3%). We did not observe that any of the patients perceived the tonsillar asymmetry by themselves before attending the consultation.

Regarding the criteria derived from the physical examination, we noted that many patients with tonsillar asymmetry and concomitant neoplastic disease also presented palpable cervical lymphadenopathies. We observed this in 5 patients (83.3%). Similarly, the pharyngoscopy showed data which was suspicious of malignancy in 4 (66.7%) of our cases. Palatine tonsil ulceration stands out in 50% of them.

Only 1 patient (16.67%) had a previous history of malignant disease (lymphoma) and, therefore, immunodeficiency.

With regard to exposure to toxic substances, we found more relationship with alcohol intake (33.3%) than with the consumption of tobacco (20%).

The odds ratio of the different factors studied are given in Table 2.

Discussion

Tonsillar asymmetry is a clinical situation which can cover an underlying malignancy; tonsillectomy is the generally proposed treatment. Nevertheless, the majority of patients who have cancer do not have this neoplastic condition, so it can be acceptable to carry out monitoring in cases where there are no risk factors.[2] For this reason, we believe that it is interesting to define which criteria must be considered as risk factors, and thus lead to the indication for tonsillectomy in this group of patients.

In the work by Spinou et al,[2] it was noted that the criteria in relation to a higher incidence of underlying malignant

disease were age >45 years, male gender, weight loss, night sweats and tonsillar ulceration or cervical lymphadenopathy in the clinical examination of the patient. No relation was found with the consumption of tobacco or persistent pain.

In another work, Cinar[3] concludes that there are a number of factors that should make us suspect a neoplasm in cases of tonsillar asymmetry, such as the suspicious appearance of the palatine tonsil (by mass, ulceration or areas of abnormal pigmentation), the onset of systemic symptoms (fever, night sweats, dysphagia, or weight loss), signs of possible regional extension by indicative cervical lymphadenopathy, or personal history of the patient, such as immunosuppression or previous malignant diseases. However, in cases where these criteria do not appear, a clinical monitoring of patients could be carried out and therefore it would not be necessary to conduct a systematic tonsillectomy.

In previous studies in adults, such as that conducted by Beaty et al,[4] discussing the risk factors for malignancy, such as tonsillar asymmetry, palpable or visible lesion in the amygdala, cervical mass, unexplained weight loss, systemic symptoms (asthenia, night sweats, fever, and anorexia), and previous history of malignancy, it was found that all risk factors were significantly correlated with malignancy and that a higher number of factors is associated with an increased risk of malignancy. In our study, we have analyzed all the factors which, in the context of tonsillar asymmetry, should make us suspect malignancy, and we found that the most commonly associated factors are lymphadenopathy and suspicious appearance of the amygdala.

In a subsequent study, Oluwasanmi et al[5] found 2 cases of lymphoma among 87 tonsillectomies by asymmetry, without other alterations and without risk factors for cancer, both cases were people over 50 years of age and one was male. Tonsillectomy was recommended whenever an abnormally enlarged amygdala was found, especially in people over 40 and in those with no history of repeated tonsillitis. In contrast, in our study, the underlying malignancy to an asymmetry does not seem to be related to the age of the patient.

However, Oluwasanmi et al[5] compiled the results of Reiter et al, which included 31 individuals with tonsillar asymmetry in a prospective study over 7 years, and excluded patients with obvious mass or ulceration, but not those patients with laterocervical lymphadenopathy, dysphagia, constitutional symptoms, unexplained weight loss, or unilateral symptoms or signs, finding 2 cases (6.5%) of malignancy, and also those of Syms et al, who followed 49 patients for 5 years, excluding patients with changes in the mucosa, laterocervical adenopathy, history of malignancy, or focal mass in the amygdala and finding 2 cases (4.1%) of non-Hodgkin lymphoma.

As for the paediatric population, there are several studies that examine the conduct to be followed with this clinical sign. In their study of tonsillar asymmetry in children, Spinou et al[6] studied 47 children under 16 years of age with an indication of tonsillectomy for tonsillar asymmetry without finding any form of malignancy. Similarly, they observed no difference in size in the tonsils removed in 36%of cases. They argue that an observation time is wise, since it is uncommon for a malignant disease to become established on a single asymmetrical amygdala and that the benefits and risks of intervention should be taken into account.

Table 2 Odds ratio (OR) and 95% confidence intervals (CI) for each risk factor

	Cases	Controls	OR (95%CI)
Adenopathies	5/6	6/24	15 (1.45-155.3)
Male gender	6/6	14/24	1.43 (1.07-1.9)
More than 45 years of age	3/6	4/24	5 (0.73-34.3)
Self-detection	0/6	0/24	—
Suspicious appearance	4/6	1/24	46 (3.3-634.9)
Systemic symptoms	2/6	5/24	1.9 (0.27-13.5)
History of malignancy	1/6	1/24	4.6 (0.24-86.6)
Immunodeficiency	1/6	0/24	1.2 (0.84- 1.72)
Tobacco	2/6	5/24	1.9 (0.27-13.5)
Alcohol	1/6	1/24	4.6 (0.24-86.6)

Dolev et al[7] reviewed 20 000 tonsillectomies and found only 6 cases of lymphoma; only in 2 of these was the tonsillar asymmetry the only sign of presentation. In conclusion, they argue that although tonsillectomy in patients with tonsillar asymmetry is probably not justified due to cost and performance reasons, all children presenting this sign must be closely monitored until a diagnosis of lymphoma is ruled out. They cite other studies which reach similar conclusions, including that of Berkowitz and Mahadevan who reviewed the case histories of 46 children with tonsillar asymmetry without finding any disease and conclude that systematic tonsillectomy in these cases is not justified in the absence of risk factors; or that of Harley, who conducted a prospective study with 258 children with tonsillar asymmetry and compared them with controls, finding no malignancy and reaching the same conclusions.

Prim et al[8] studied the incidence of lymphoproliferative processes of Waldeyer's ring in paediatric patients. In their work, they systematically indicated tonsillectomy in immunocompetent children presenting recent and progressive unilateral growth of the palatine tonsil and in any kind of adenoamygdaline growth in immunocompromised children. Although the occurrence of lymphoproliferative processes had a very low incidence, they advised excision for biopsy of the tonsils in cases of unilateral growth, regardless of the immune condition of the patient.

In the study by Beaty et al,[4] a statistically significant relationship was found for the risk factors of exposure to toxic substances such as alcohol and tobacco.

There are few references on the role of tonsillar biopsy in the literature. In a work by Shah et al,[9] it is stated that fine needle aspirative biopsy (FNAB) is a safe and effective technique in the diagnosis of lymphoma and squamous cell carcinoma. They find a sensitivity of 93% and a specificity of 86% in intraoral FNAB as compared to conventional biopsy. They report that the conventional technique is best for superficial squamous cell carcinoma lesions, while FNAB is better for sub-mucosal lesions, where conventional techniques are difficult to perform or are limited by chronic superficial inflammation. They performed 6 FNAB and found only 2 cases of squamous cell

carcinoma; 1 of the 2 cases had only a partial affectation of the amygdala, which could have led to a misdiagnosis. Due to the consequences entailed by a false negative, they recommend carrying out a tonsillectomy for biopsy. They studied visible injuries, but do not mention carrying out FNAB in apparently healthy tissue, as would be the case of an isolated tonsillar asymmetry.

In our study, the criteria for suspicion of malignancy that appear with most frequency are male gender, concomitant adenopathies and suspicious appearance of the palatine tonsil in conducting the clinical examination. The fact that in no case had the patients themselves been the ones to observe the asymmetric growth of the amygdala should be highlighted.

Upon studying the data obtained in the sub-group of patients (asymmetric growth of the palatine tonsil by a neoplastic process) and in the sub-group of control subjects (asymmetric growth without underlying malignant disease), we note that the risk factor most associated with neoplastic disease is a suspicious appearance of the palatine tonsil (odds ratio [OR] =46), followed by a palpable adenopathy on clinical examination (OR=15). We note that the most commonly observed criterion for suspicion (male gender) loses strength of association when both groups are compared, since there is also a predominance of males in the control group. With regard to exposure to toxic substances, there is a significant relationship with alcohol abuse (OR=4.6) and, although minor, with tobacco consumption (OR=1.9) due to its relationship with the appearance of squamous cell carcinoma.

Conclusions

— The asymmetry in the size of the palatine tonsils should alert us to the possibility that an underlying malignancy may exist.
— This asymmetry should not systematically imply an indication of tonsillectomy.
— Strict monitoring should be carried out on tonsillar asymmetry cases without suspicion of malignancy.
— Special attention should be paid and tonsillectomy should be indicated if there are risk factors, particularly in those with suspicious appearance in the clinical examination and concomitant cervical lymphadenopathy.

References

1. Compadretti GC, Nannini R, Tasca I. Isolated tonsillar sarcoidosis manifested as asymmetric palatine tonsils. Am J Otolaryngol. 2003;24:187-90.
2. Spinou C, Kubba H, Konstantinidis I, Johnston A. Role of tonsillectomy in histology for adults with unilateral tonsillar enlargement. Br J Oral Maxillofac Surg. 2005;43:144-7.
3. Cinar F. Significance of asymptomatic tonsil asymmetry. Otolaryngol Head Neck Surg. 2004;131:101-3.
4. Beaty M, Funk G, Karnell LH, Graham S, McCulloch T, Hoffman H, et al. Risk factors for malignancy in adult tonsils. Head and Neck. 1998;20:399-403.
5. Oluwasanmi A, Word A, Balwin D, Sipaul F. Malignancy in asymmetrical but otherwise normal palatine tonsils. Ear, Nose and Throat Journal. 2006;85:661-3.
6. Spinou E, Kubba H, Konstantinidis I, Johnston A. Tonsillectomy for biopsy in children with unilateral tonsillar enlargement. Int J Pediatr Otorhinolaryngol. 2002;63:15-7.
7. Dolev Y, Daniel S. The presence of unilateral tonsillar enlargement in patients diagnosed with palatine tonsil lymphoma: experience at a tertiary care pediatric hospital. Int J Pediatr Oto-rhinolaryngol. 2008;72:9-12.
8. Prim MP, Diego JL, Hardisson D, Patron M, Jara P, Garcia MC, et al. Lymphoproliferative disorders of Waldeyer's ring. An Esp Pediatr. 2002;57:317-20.
9. Shah SB, Singer MI, Liberman E, Ljung BM. Transmucosal fi neneedle aspiration diagnosis of intraoral and intrapharyngeal lesions. Laryngoscope. 1999;109:1232-7.