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# Peritonsillar abscess: Risk of disease in the remaining tonsil after unilateral *tonsillectomy à chaud*

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**Abstract**
The occurrence of disease in the remaining tonsil after unilateral tonsillectomy *à chaud* in the treatment of peritonsillar abscess, was studied in 536 patients. No patient had a history of previous severe tonsillitis at the time of the unilateral tonsillectomy, 6.1 per cent of the patients were readmitted for surgery of the remaining tonsil during the follow-up period. Ninety-seven per cent of these patients were younger than 30 years of age. Previous investigations have shown increasing frequency by age of pharyngitis after bilateral tonsillectomy. We suggest bilateral tonsillectomy in all cases of patients younger than 30 years old who suffer from peritonsillar abscess irrespective of previous tonsillar disease. Patients older than 30 should be treated with unilateral ablation, unless there is a clear indication for bilateral tonsillectomy.

## Introduction

Previously the most common treatment of a peritonsillar abscess (PA) was incision and dilatation, followed by tonsillectomy three to six weeks later (Cachin, 1979). Several authors have recommended bilateral tonsillectomy *à chaud* because it results in complete evacuation of pus and relief of trismus and pain within 24 hours, causing a reduction of the period of hospitalization (Bonding, 1973; Templer *et al.* 1977).

By comparing follow-up investigations of patients who have received unilateral or bilateral tonsillectomy because of a peritonsillar abscess, a significantly higher frequency of pharyngitis was found in the latter group (Bonding, 1976; Christensen and Schønsted-Madsen, 1983). Patients admitted to the ENT Department, Odense University Hospital because of a peritonsillar abscess since 1977 have been treated with unilateral tonsillectomy, unless there was a clear indication for bilateral surgery. Three or more attacks of tonsillitis annually, severe chronic tonsillitis and bilateral peritonsillar abscess were regarded as clear indications for bilateral tonsillectomy. We observed that younger patients seemed to have a higher risk of developing disease in the remaining tonsil requiring surgery.

The purpose of this publication is to present a retrospective investigation on 536 patients, who received unilateral tonsillectomy *à chaud* during a ten year period because of PA and to determine when to recommend unilateral as against bilateral tonsillectomy to patients suffering from peritonsillar abscess.

## Materials and methods

Case records of 755 patients admitted to the ENT Department Odense University Hospital for surgery because of peritonsillar abscess during the period from 1 January 1978 to 31 December 1987 were reviewed. Two hundred and eighteen of these patients received bilateral tonsillectomy because of a clear indication for this procedure was found. One patient died shortly after surgery from another disease. The remaining 536 patients all received unilateral tonsillectomy *à chaud*. The sex distribution was 247 females and 289 males. Median age was 23.5 years with a minimum of 2.4 years and a maximum of 82.9 years. Figure 1 shows the age and sex distribution. The diagnoses were in all cases confirmed by identification of pus in the peritonsillar space at the time of surgery.

Patients who developed disease in the remaining tonsil requiring surgery were readmitted to the department. Peritonsillar abscess, recurrent tonsillitis, chronic tonsillitis and a severe hypertrophic tonsil were considered indications for removal of the remaining tonsil. The closing date of the investigation was 1 January 1989. Hence all 536 patients were at risk of developing contralateral tonsillar disease during a period from one to 11 years. Thirty-three patients developed disease in the remaining tonsil requiring surgery and the span of time between first and second tonsillectomy was calculated for each patient. The patients were omitted from the project after removal of the remaining tonsil. We have disregarded the possibility that patients have moved to another geographic region and received treatment in other departments.

Pus from the abscess cavity of 521 patients was cultured (Table I). Five hundred and seventeen patients received pre- or post-operative antibiotic treatment, mainly penicillin. Patients who were allergic to penicillin received erythromycin. Nineteen patients received no antibiotic treatment. The patients who received unilateral tonsillectomy were grouped by age. The groups

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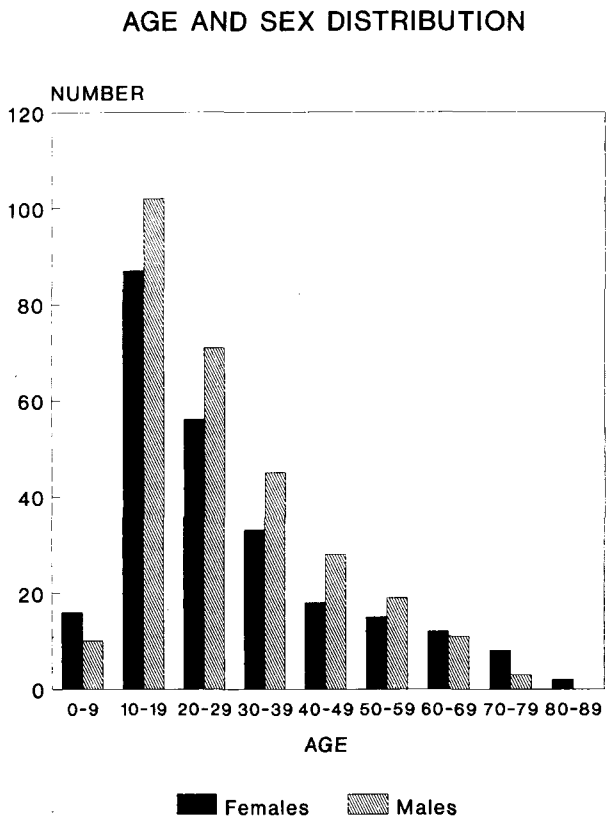


FIG. 1

Age and sex distribution of the patients having unilateral tonsillectomy *à chaud*.

were compared and any differences observed were analysed using the Chi square test.

The group of patients younger than 30 years was compared to patients older than 30 years using a Kaplan-Meier plot. The event in question being the second tonsillectomy. This plot also indicates the interval of time between the two tonsillectomies. The observed differences were compared using Mantel-Haenszel test.

## Results

Thirty-three of the 536 patients (6.1 per cent) who received unilateral tonsillectomy were readmitted because of disease in the remaining tonsil requiring surgery (Table II). Twenty-four patients suffered from peritonsillar abscess, recurrent tonsillitis occurred in six patients and there were two patients with severe hypertrophic tonsils causing respiratory obstruction. Three hundred and forty-two of the patients were younger than 30 years old; 32 of these patients (9.7 per cent) were readmitted because of disease in the remaining tonsil requiring surgery. One hundred and ninety-four patients were older than 30 years, and only 0.5 per cent (1/194) of those were readmitted because of disease in the remaining tonsil requiring surgery. Figure 2 illustrates cumulative frequency calculations of disease in the remaining tonsil requiring surgery in the two groups of patients more or less than 30 years of age. The observed difference between the groups is statistically significant: $p<0.0001$. Figure 2 also indicates the time for second tonsillectomy and it can be seen that the frequency is highest during the first years after the primary tonsillectomy.

TABLE I

BACTERIAL FINDINGS

| | |
|---|---|
| Ordinary respiratory flora | 166 |
| Streptococci | 191 |
| Pneumococci | 7 |
| Coli | 2 |
| Micrococci | 12 |
| Staphylococci | 7 |
| Haemophilus influenzae | 103 |
| No growth | 36 |

## Discussion

To the author's knowledge no previous larger series has been published concerning the occurrence of disease in the remaining tonsil requiring surgery after unilateral tonsillectomy *à chaud*. Several authors have been dealing with the advantages and disadvantages of unilateral tonsillectomy *à chaud* as against bilateral treatment. Virtanen (1949) and Grahne (1958) performed unilateral tonsillectomy on children and the elderly with no previous history of tonsillitis, in order to limit surgical intervention. Falk and Maurer (1963) suggested that preservation of the second tonsil protects the pharyngeal mucosa. Bonding (1976) has shown that the risk of developing post-operative pharyngitis after bilateral tonsillectomy *à chaud* because of peritonsillar abscess increases with age. He therefore recommends a reserved attitude to bilateral tonsillectomy in elderly patients without previous throat trouble. Christensen and Schønsted-Madsen (1983) compared 47 patients who had received unilateral tonsillectomy *à chaud* because of peritonsillar abscess, with a corresponding group that had been treated by bilateral tonsillectomy (Bonding, 1976). A considerably lower frequency of periodic and chronic pharyngitis were found in the group that received unilateral treatment. Our results show that approximately 10 per cent of the patients younger than 30 years, who have received unilateral tonsillectomy *à chaud* because of peritonsillar abscess, developed disease in the remaining tonsil requiring surgery. Only 0.5 per cent of the patients older than 30 years developed disease in the remaining tonsil requiring surgery. We have chosen to present our results in a direct and cumulative way (Table II, Fig. 2). The latter method illustrates the proportions and chronology of the occurrence of disease in the remaining tonsil requiring surgery in the groups concerned. Our follow-up is restricted to patients readmitted to the department because of disease in the

TABLE II

NUMBER OF PATIENTS DEVELOPING DISEASE IN REMAINING TONSIL REQUIRING SURGERY

| Age (years) | Number | Total |
|---|---|---|
| 0–9 | 2 | 26 |
| 10–19 | 24 | 189 |
| 20–29 | 6 | 127 |
| 30–39 | 0 | 78 |
| 40–49 | 0 | 46 |
| 50–59 | 1 | 34 |
| 60–69 | 0 | 23 |
| 70–79 | 0 | 11 |
| 80–89 | 0 | 2 |
| | 33 | 536 |

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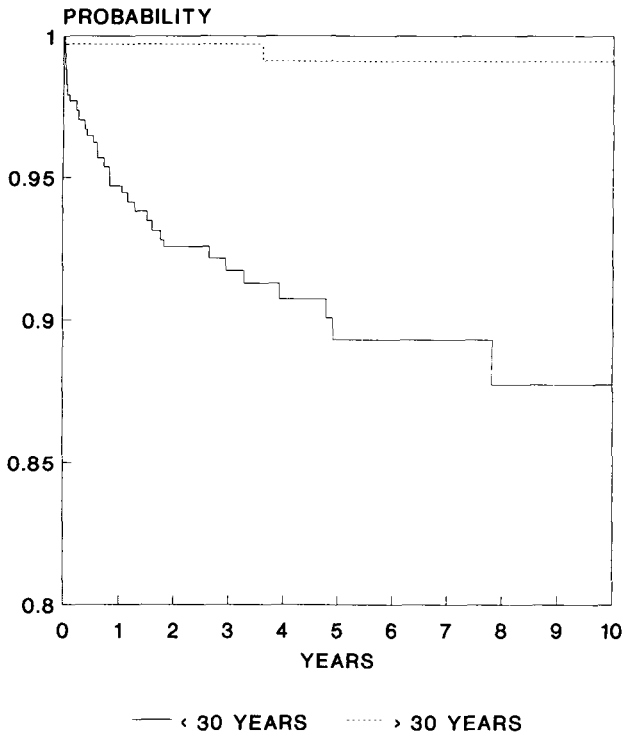


FIG. 2

The curves are Kaplan-Meier plots of second tonsillectomy as a function of time. Upper curve illustrates patients older than 30 years and lower curve patients younger than 30 years.

remaining tonsil requiring surgery. It should be emphasized that practically all tonsillectomies in Denmark are done in hospital, and patients suffering from disease in the remaining tonsil requiring surgery are therefore readmitted to the departments of otorhinolaryngology. Change of address to another geographic region outside the admitting area of the department could theoretically influence our results. This phenomenon presumably influences the younger groups the most as they tend to move around more than older patients. Furthermore not all patients developing disease in the remaining tonsil requiring surgery will be readmitted for hospital treatment. We therefore consider our observations to be representative or possibly underestimated. As shown in Table II, the largest frequency of disease in the remaining tonsil requiring surgery after unilateral tonsillectomy *à chaud* is found in the group 10–19 years (12.7 per cent). The patients in the group 20–29 years and in the group younger than 10 years old have a considerably lower frequency of disease in the remaining tonsil requiring surgery (4.7 per cent respectively 7.7 per cent). It seems obvious to recommend bilateral tonsillectomy in patients 10–19 years old. Whether to perform unilateral or bilateral tonsillectomy in the remaining patients younger than 30 years old is still an open question. The authors prefer bilateral tonsillectomy *à chaud* in all patients younger than 30 years, as it requires a minimum of supplementary surgery considering the number of patients who will avoid disease in the remaining tonsil requiring surgery. Older patients are in great risk of developing pharyngitis after bilateral tonsillectomy (Bonding, 1976; Christensen and Schønsted-Madsen, 1983) and according to our results these patients extremely rarely develop disease in the remaining tonsil requiring surgery after unilateral surgery. We therefore recommend unilateral tonsillectomy in patients older than 30 years suffering from peritonsillar abscess, unless there is a clear indication for bilateral treatment.

**Key words: Peritonisllar abscess; Tonsillectomy**

## Conclusion

We conclude that patients older than 30 years suffering from peritonsillar abscess should be restricted to unilateral tonsillectomy *à chaud* unless there is a clear indication for bilateral treatment, because this procedure will minimize the occurrence of pharyngitis. We suggest bilateral tonsillectomy *à chaud* in all patients younger than 30 years, as it requires a minimum of supplementary surgery considering the number of patients who will avoid disease in the remaining tonsil requiring surgery.

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