SP147

A Randomized, Prospective Trial Comparing Outcomes of Medical versus Surgical Management of Peritonsillar Abscesses

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Abstract

Objectives: To determine whether surgical drainage of peritonsillar abscesses provides superior outcomes compared to medical management.

Methods: Twenty-one patients with a clinically diagnosed peritonsillar abscess were randomized to medical or surgical treatment. Medical management consisted of initial treatment with intravenous Ceftriaxone, Clindamycin, Decadron, and fluids. Patients were discharged with oral Clindamycin and pain medicine and returned the following day for re-evaluation and a second dose of Ceftriaxone. The surgical treatment group received the same medical care but also underwent needle aspiration. The major outcome measurements were pain (0-10 scale), days until return to work, and time before oral intake. Patients were evaluated at 1, 24, 48, and 72 hours, then at 7 and 42 days.

Results: Statistical analysis showed no significant advantage to surgical treatment other than less pain in the surgical treatment group at 24 hours (mean pain score of 3.04 versus 1.85, p=0.0486). However, it should be noted that the pre-treatment pain scores showed a strong trend toward less pain in the surgical group, just short of significance (8.08 versus 6.63, p=0.0512). Both groups showed a significant trend for pain reduction along time, but there was no difference between groups. There was no significant difference in days before able to drink or days before returning to work.

Conclusion: Medical and surgical management of peritonsillar abscesses produced similar results with no apparent advantage to the risk and discomfort associated with surgical drainage. Further study with a larger prospective trial is necessary to validate the results.

Introduction

Peritonsillar abscesses (PTAs) are the most common deep infection of the head and neck. They have an incidence of 30 per 100,000 with about 45,000 new cases annually. The annual cost of treating PTAs has been estimated at over $150 million[1]. In addition to the cost of treatment, other potential morbidity includes lost time from work or school, pain, airway obstruction, and extension to deep neck spaces or the mediastinum. Despite the frequency of PTAs and their potential costly sequelae, there is still considerable variation and debate in their management. Treatment methods include medical therapy, aspiration, incision and drainage, and even quinsy tonsillectomy. Outcomes between the various surgical techniques are roughly equivalent[2]. Outpatient versus inpatient management is also variable.

Recent studies have shown the beneficial role of steroid therapy and have even suggested that this traditionally surgically managed problem may be treated as effectively with medical therapy alone. A randomized, controlled study showed that after needle aspiration and inpatient admission for intravenous antibiotics, those receiving steroids instead of placebo showed significant improvement in a number of clinical outcome measures including improvement in trismus, resolution of fever, oral intake, and length of hospital stay[3]. A group working with the Indian Health Service in Arizona designed a trial of purely medical therapy (no aspiration or incision) using high dose steroids, antibiotics, hydration, and anti-inflammatories. They found this regimen successful in 96% of patients; of the 98 in the study group, 2 patients underwent eventual aspiration and 2 were treated with incision and drainage[4].

With this background, we designed a study to evaluate whether surgical drainage of PTAs provides improved clinical outcomes over medical management alone.

Material and Methods

After facility IRB approval, 21 patients (age 15-53) were enrolled based on the clinical diagnosis of a PTA. Patients were randomized to medical (13) or surgical (8) treatment groups. At the initial evaluation, all study patients were treated with Clindamycin 600 mg IV, Ceftriaxone 1-2gms IV, Dexamethasone 10 mg IV, intravenous fluids, and pain control. The surgical group underwent needle aspiration in addition to the above. All patients were discharged home on oral Clindamycin 300 mg qid and pain medication. All patients returned the following day for a second dose of intravenous Ceftriaxone; some were also further treated with an additional dose of Dexamethasone and further intravenous fluids pending the clinical response. Patients were evaluated by interview questionnaire prior to treatment and one hour later, and then at 1, 2, 3, 7, and 42 days. The major outcome variables were pain, time before oral intake, and time before return to work.

Table 1 – Mean Pain Scores

Time	Group	N	Mean	St. Dev.	t-test p-value	Exact Wilcoxan p-value
Pretreatment	Medical	13	8.08	1.57	0.0512	0.0603
	Surgical	8	6.63	1.53		
1 Hour	Medical	13	5.85	2.05	0.1337	0.1998
	Surgical	8	4.25	2.6		
24 Hours	Medical	13	3.04	1.85	**0.0461**	**0.0486**
	Surgical	8	1.44	1.29		
48 Hours	Medical	12	1.54	1.47	0.5884	0.67
	Surgical	8	1.19	1.31		
72 Hours	Medical	12	1.21	1.36	0.4912	0.3892
	Surgical	7	0.79	1.07		
7 Days	Medical	11	0.36	0.92	0.9878	0.9371
	Surgical	7	0.36	0.75		
42 Days	Medical	10	0	0	1	1
	Surgical	5	0	0		

Figure 1 – Pain Scores over Time

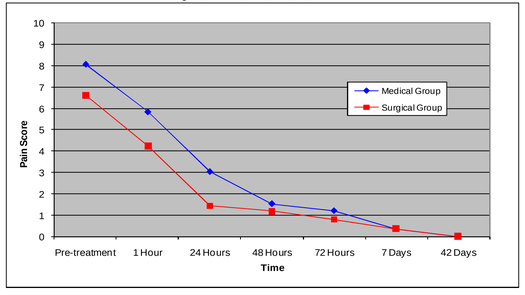

Table 2 – Time Until Able to Drink

Group	N	Mean (days)	St. Dev.	t-test p-value	Exact Wilcoxon p-value
Medical	13	2.23	1.01	0.2065	0.1316
Surgical	8	1.63	1.06		

Table 3 – Time Until Return to Work

Group	N	Mean (days)	St. Dev.	t-test p-value	Exact Wilcoxon p-value
Medical	10	3.10	1.66	0.4782	0.5167
Surgical	7	2.57	1.13		

Results

The results for the subjective pain scale are shown in table 1. To compare the 2 groups at each time point, the pain scale was analyzed using both a two sample t-test and the Exact Wilcoxon. The latter analysis disregards whether the sampled data meets normal distribution criteria since the sample size is small. The only statistically significant difference between the 2 groups is less pain in the surgical group at 24 hours (p=0.0461 for t-test and p=0.0486 for Exact Wilcoxon test). However, the pre-treatment pain scores showed a nearly significantly lower pain score in the surgical group (p=0.0512 for t-test and p=0.0603 for Exact Wilcoxon test), raising some question as to the validity of the difference at 24 hours. A time trend analysis was carried out using a Generalized Estimating Equations model. There is a significant time trend for reduction in the pain scale (p=0.0207), but no difference for pain scale between the 2 groups (p=0.4801). The pain scores over time can be seen in Figure 1.

The two sample t-test and Exact Wilcoxon test were also used to compare the two groups regarding time before oral intake and time before returning to work. The data can be seen in tables 2 and 3. On average, the surgical group reported resumption of oral intake .6 days earlier, though this was not significant (p=0.2065 for t-test and p=0.1316 for Exact Wilcoxon test). The surgical group also returned to work .53 days sooner, though again this lacked significance (p=0.4782 for t-test and p=0.5167 for Exact Wilcoxon test).

Conclusion

Our data suggest that there may be no difference in outcomes between medical and surgical management of PTAs. Both groups showed similar resolution of pain as well as ability to resume oral intake and return to work. The study results are limited by the small sample size that lacks the power to validate the results. However, even in light of the statistical evaluation, it should be noted that all medically managed patients in the study fully recovered without the need for surgical needle aspiration or incision and drainage. While relatively straightforward procedures, these do carry risks and discomfort for the patient. In addition, these patients were all successfully managed on an outpatient basis, saving the considerable expense of hospital admission. Together with the data from the Indian Health Study[4], this suggests there may be a role for the non-surgical treatment of PTAs. Prior work has shown the significant contribution of steroid therapy, and we suspect the use of corticosteroids and hydration likely play an important role in medical management. Certainly, surgical intervention is required in advanced or decompensating patients and clinical judgment is necessary. However, our data suggest that medical therapy alone may be equally effective as surgical intervention in the appropriate setting. Further study with a larger prospective trial is necessary to validate the results.

References

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