

The Distribution of Peritonsillar Abscess Patients in Sanglah Hospital Denpasar at 2010 until 2017

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<http://dx.doi.org/10.13005/bpj/1193>

(Received: May 13, 2017; accepted: May 30, 2017)

ABSTRACT

Peritonsillar abscesses (PTAs) are collections of purulent material that usually develop outside the tonsillar capsule near the superior pole. Peritonsillar abscess (PTA) is the most common complication of tonsil infections in adults. To know the distribution of patients with peritonsillar abscess in Sanglah Hospital Denpasar at period 2010-2017. This is an observational retrospective study using medical records of patients with peritonsillar abscess in Sanglah Hospital Denpasar during January 2010 until March 2017. 38 patients with peritonsillar abscess were male 65.78%, mean of age 38.76 years, 78.95% with sore throat, 100% unilateral, most common aerob culture detected *Streptococcus viridans* (63.16%) that 100% sensitive to cefuroxime, cefepime, meropenem and linezolid. The most length of hospital stay was 4 days (65.78%) with average 4.5 days, mostly found without difficulting factors and there is no complication in this study. This study revealed male more frequent than female, with sore throat is the frequent symptoms, mostly unilateral and *Streptococcus viridans* is the most bacteria in microbiological culture and 100% sensitive to cefuroxime, cefepime, meropenem and linezolid. There is no difficulting factors and complication in this study.

Keywords: peritonsillar absces, microbiological culture, Streptococcus.

INTRODUCTION

Peritonsillar abscesses (PTA) are acute infection followed by collections of purulent material in loose connective tissue between faryngeal constrictor muscle with tonsil at fossa tonsil.^{1,2} This infection penetrate tonsillar capsule near superior pole. Peritonsillar abscess (PTA) is the most common complication of acute tonsillitis.^{3,4}

Peritonsillar abscess (PTA) is one of the head and neck infections often in adults. The onset of peritonsillar abscess starting from superficial infections and progressively developing into tonsillar cellulitis. Peritonsillar abscess complications that may occur include expansion into parapharyngeal

infection, mediastinitis, dehydration, pneumonia, intracranial infections such as cavernous sinus thrombosis, meningitis, brain abscess and airway obstruction.³

The clinical symptoms such as sore throat, localized pain, high fever, weakness and nausea. The other symptoms are halitosis, vomiting, ear pain or otalgia and trismus.^{5,6}

There is no data shown patients with peritonsillar abscesses in Sanglah General Hospital at Denpasar. The authors are interested to research on the distribution of patients with peritonsillar abscesses in Sanglah General Hospital at period January 2010 to March 2017. This results are

expected for evidence information of peritonsillar abscess that could be implemented in management of PTA properly and optimally.

METHODS

The study was observational retrospective by using the medical records of patients with peritonsillar abscess who came to ENT Department and the laboratory results from Microbiology Department Sanglah General Hospital. We use consecutive sampling for patients with peritonsillar abscess between January 2010 and March 2017. The incomplete medical records will exclude in this study. Further data were tabulated and presented descriptively in tables and narrative.

RESULTS AND DISCUSSION

A total of 28 patients with peritonsillar abscess at period January 2010 to March 2017 were included in this study with a ratio of 25 males (65.78%) and 13 females (34.22%) (Table. 1).

In United States the incidence is 1/6500 of the population or 30.1/40000 people per year.⁷ Salihoglu *et al.*, reports a total of 26 patients with peritonsillar abscess are 92.4% males with an average age was 22.2 years old.⁴ Ozbek *et al.*, reports from total 62 patients with peritonsillar abscess the ratio is 25 (40.33%) females and 37 (59.67%) males with average age was 27.9 years old.⁹ Naik and Naik reports from total 27 patients with peritonsillar abscess the ratio is 18 (66.67%) males and 9 (33.33%) females in average age was 30.4 years old.¹⁰ In this study, the male in patients with abscesses peritonsil is higher than female same as Salihoglu *et al.*, Ozbek *et al.*, Naik and Naik studies.

The distribution of patients with PTA is highest in group of age 41-50 year which 15 patients (39.48%). The lowest distribution by group of age is above 60 years which 1 patients (2.63%) (Table 2). The average age in this study was 38.76 years which is higher than Salihoglu *et al.*, Ozbek *et al.*, Naik and Naik studies. Peritonsillar abscess often seems in adults at the age of 20 to 40 years. It is rare in children, except on immunocompromise condition. In Northern Ireland, author reports 1 per 10.000 patients per year, with an average age of 26.4 years

old.⁸ Salihoglu *et al.*, reports the average age was 22.2 years old.⁴ Ozbek *et al.*, reports the average age was 27.9 years old.⁹ Naik and Naik reports the average age was 30.4 years old.¹⁰

Sore throat is the most major complaint in about 30 patients (78.95%) in this study. While the lowest is dysphagia in about 8 patients (21.05%) (Table 3). In anamnesis mostly obtained progressive sore throat despite untreated, localized pain, high fever, weakness and nausea. Odynophagia can be a prominent complaint and the patient may difficult when eat and even swallowing.^{11,12} Frequently hypersalivation as a result can not cope salivary secretions and the saliva often dripping out. Other complaints are halitosis, vomiting until referred pain over to the ear (otalgia). Trismus occurs when the infection extends the pterygoid muscles.¹² Kara and Spinou reports sore throat are common complaints in patients with peritonsillar abscess that is equal to 92%.¹³ Sore throat in our study is the most major complaint peritonsillar abscess similar with Kara and Spinou study.

Most patients with peritonsillar abscess occur unilateral 100% in this study. This results shown a higher quantity than Papacharalampous *et al.*, and Edinger *et al.*, case studies. Physical examination of the tonsil found unilateral swelling, because rarely both tonsils are infected at the same time. If both are infected when the opposite tonsil become swelling after the infected tonsil getting better. When swelling occurs simultaneously, the symptoms of sleep apnea and airway obstruction will be worsed.¹² Papacharalampous *et al.*, reports a case of bilateral peritonsillar abscess in 19 years female.² Naik and Naik¹⁰ and Wang *et al.*, reports there were no differences site of location in peritonsillar abscess.¹⁴ Edinger *et al.*, reports a case of bilateral peritonsillar abscess in 24 years female.¹⁵

Based on microbiological culture, *Streptococcus viridans* is highest about 24 patients (63.16%), while *Enterococcus sp* is the lowest about 1 patient (2.63%). Eighteen point forty three percent shows no growth of in microbiology culture (Table 4). This results is supported by Sakae *et al.*, and Repanos *et al.*, studies which are *Streptococcus viridans* is highest in patients with peritonsillar abscess. Microbiological culture was done to

growing population of aerobic bacteria as much as the mix of flora that involves microorganisms Gram-negative and Gram-positive. Some studies reports *Streptococcus viridans* is the most common cause of peritonsillar abscess, followed by *Streptococcus pyogenes*. *Streptococcus sp* and anaerobic bacteria have been identified as causative agents.^{6,16} Sakae *et al.*, found 32% *Streptococcus viridans* in peritonsillar abscess culture in Brazil.¹⁷ Repanos *et al.*, reports 43.7% *Streptococcus sp* in peritonsillar abscess culture.¹⁸

Streptococcus viridans was obtained the most sensitive to the antibiotic cefuroxime, cefepime, meropenem, and linezolid respectively by 100% in this study. *Streptococcus viridans* mostly resistance to the antibiotic ampicillin established at 62.5% (Table 5). Repanos *et al.*, reports 0.84% *Streptococcus sp* resistance to the antibiotic group penicillin .¹⁸ The resistancy of *Streptococcus viridans* to ampicillin is higher in our study than Repanos *et al.*, studies. Takenaka *et al.*, in their study reports all Gram-positive bacteria sensitive to the antibiotic penicillin group and cephalosporin.¹⁹ Sowerby *et al.*, reports 32% *Streptococcus sp* resistance to clindamycin and 41% resistant to erythromycin.²⁰ However, in

our study the resistancy of *Streptococcus viridans* to clindamycin and erythromycin was low. Some authors suggested second or third generation cephalosporins administration compared with group penicillin .⁶

The distribution of patients with peritonsillar abscess is highest obtain for 4 days about 25 patients (65.78%) in this study. Only 1 patient (2.63%) was treated for 6 days (Table 6). In our study, the length of hospital stay inpatient with peritonsillar abscess is longer than Repanos *et al.*, Wang *et al.*, Kara and Spinou, Naik and Naik studies. The average length of treatment peritonsillar abscess obtained in this study is 4.5 days. Repanos *et al.*, reports an average to treat patient with peritonsillar abscess requires for 2.4 days inpatient.¹⁸ Naik and Naik reports the average for hospital stay is 3.5 days.¹⁰ Kara and Spinou reports the average for hospital stay is 2.2 days.¹³ Wang *et al.*, reports the average for hospital stay is 4.2 days.¹⁴

Table 1: The distribution of patients with peritonsillar abscess based on sex

Sex	n (%)
Male	25 (65.78)
Female	13 (34.22)
Total	28 (100)

Table 3: The distribution of patients with peritonsillar abscess based on major complaint

Chief complaint	n (%)
Sore throat	30 (78.95)
Dysphagia	8 (21.05)
Total	38 (100)

Table 2: The distribution of patients with peritonsillar abscess based on age

Age (years)	n (%)
11-20	3 (7.89)
21-30	6 (15.79)
31-40	10 (26.32)
41-50	15 (39.48)
51-60	3 (7.89)
>60	1 (2.63)
Total	38 (100)

Table 4: The distribution of patients with peritonsillar abscess based on microbiology culture

Microbiology culture	n (%)
<i>Streptococcus viridans</i>	24 (63.16)
<i>Streptococcus pyogenes</i>	3 (7.89)
<i>Klebsiella Pneumonia</i>	3 (7.89)
<i>Enterococcus sp</i>	1 (2.63)
No growth	7 (18.43)
Total	38 (100)

Twenty eight patients (73.69%) in this study without difficulting factors. Trismus shown in 9 patients (23.68%). This results shown lower than Salihoglu *et al.*, studies. Only one patient (2.63%) found with diabetes mellitus (**Table 7**), which is higher in Wang *et al.*, studies. Several difficulting factors that affect peritonsillar abscess including trismus and systemic diseases, especially diabetes mellitus.²¹ Wang *et al.*, reports 3.5% of patients with peritonsillar abscess found with diabetes mellitus.¹⁴

Salihoglu *et al.*, reports 88.46% of patients with peritonsillar abscess accompanied by trismus.⁴

A total 38 patients in this study found without any complications. In our study, we found without any complications same as in Ozbek *et al.*, studies. Immediate complications can occur in the form of dehydration due to less food intake. Spontaneous rupture of the abscess with blood or pus aspiration pneumonitis or abscess can cause infection to the

Table 5: The resistancy pattern for *Streptococcus viridans* in peritonsillar abscess

Type of antibiotic	Name of antibiotic	n=24 (%)		
		S	I	R
Ampicillin	Ampicillin	9(37.5)	0(0)	15(62.5)
	Amoxicillin/ clavulanic acid	14(58.3)	1(4.2)	9(37.5)
Cephalosporin	Cephalothin	23(95.8)	0(0)	1(4.2)
	Cefuroxime	24(100)	0(0)	0(0)
	Cefotaxime	23(95.8)	0(0)	1(4.2)
	Cefepime	24(100)	0(0)	0(0)
Carbapenem	Imipenem	23(95.8)	1(4.2)	0(0)
	Meropenem	24(100)	0(0)	0(0)
Glycopeptide	Vancomycin	23(95.8)	0(0)	1(4.2)
Macrolide	Erythromycin	12(50)	3(12.5)	9(37.5)
Tetracycline	Tetracycline	12(50)	2(8.3)	10(41.7)
Lincosamide	Clindamycin	12(50)	4(16.7)	8(33.3)
Oxazolidinones	Linezolid	24(100)	0(0)	0(0)
Aminoglycoside	Amikacin	14(58.3)	2(8.3)	8(33.3)
	Gentamicin	14(58.3)	1(4.2)	9(37.5)
Fluoroquinolone	Ciprofloxacin	15(62.5)	0(0)	9(37.5)
	Levofloxacin	20(83.3)	0(0)	4(16.7)

Table 6: The distribution of patients with peritonsillar abscess based on lengt of hospital stay

Length of stay (days)	n (%)
3	2 (5,26)
4	25 (65.78)
5	10 (26.33)
6	1 (2.63)
Total	38 (100)

Table 7: The distribution of patients with peritonsillar abscess based on difficulting factors

Difficulting factor	n (%)
Trismus	9 (23.68)
Diabetes mellitus	1 (2.63)
None	28 (73.69)
Total	38 (100)

pulmonary area.^{1,8,22} Expansion to parapharynx, may result in an abscess parapharynx, spreading into the mediastinum may result in mediastinitis.²² Ozbek *et al.*, in their studies did not obtain any complications of peritonsillar abscess such as abscess in the deep neck spaces or mediastinitis.²³

CONCLUSION

A total 38 patients with peritonsillar abscess who came into Sanglah General Hospital between

January 2010 and March 2017 were predominant male. The mean of age was 38.76 years old. Sore throat is the most symptoms when came into the hospital. Mostly cases occur are unilateral. The most common microbiological culture was *Streptococcus viridans*. The most length of hospital stay was 4 days with average 4.5 days. In this study, mostly found without difficulting factors and there is no any complication occurs.

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