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Original Article

Local Infiltration Anesthesia in Drainage of Quinsy

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Abstract

Peritonsillar abscess (PTA) or Quinsy is a severe form of infection which is rare but has a significant morbidity and mortality.

Objectives: Present study was aimed to find out significance of local infiltration anesthesia (LIA) in drainage of quinsy.

Materials and Methods: This prospective and comparative study was conducted to find the role of local infiltration anaesthesia (LIA) in fifty (50) patients of quinsy who were randomly divided into two equal groups. Group-A did not receive any local anaesthesia while Group-B received local infiltration anesthesia (LIA) for drainage of quinsy. The pain experienced by patients of both groups before, during and half an hour after the operation was measured on a numerical rating scale (NRS) from zero to 10. All the patients were followed-up for six weeks and other findings like need of hospitalisation, relief of trismus, rate of recovery and treatment cost were also recorded.

Results: The Group-B patients felt less or no pain as compared to Group-A, who felt more pain during and after drainage of quinsy.

Conclusion: Local infiltration anaesthesia has significant benefit in reducing pain during and after drainage of quinsy. It also enhances the rate of recovery, is more cost effective and less distressing for the patients.

Key Words: Quinsy, Peritonsillar abscess (PTA), Local anesthesia, Local infiltration anaesthesia (LIA), Incision &Drainage (I&D), Topical anaesthesia.

Introduction

Before the discovery of antibiotics, quinsy was significant cause of mortality, accounting for an estimated 226 deaths in England during 1875.[1] Even today quinsy is one of the most common potentially serious Ear, Nose and Throat (ENT) emergencies.[2] In quinsy pus is formed in peritonsillar space behind the tonsil and in front of superior constrictor and palatopharyngius muscle. It is a complication of untreated or maltreated tonsillitis, infection due to multidrug resistant organisms, a foreign body or weber's glands infection.[3-5]

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The causative micro-organisms are mixed type; both aerobic & anaerobic, gram positive and gram negative. The common bacteria are anaerobic and gram negative rods.[3,6]

Quinsy is the commonest deep space Head and Neck infection with incidence of 10- 37 per 100,000 as reported by epidemiological studies around the world.[7] It equally affects both sexes and is common between 20-40 years but can also occur in children and in older people.[2] It's incidence is on increase probably due to less tonsillectomies and incomplete antibiotic use by general practitioners and patients.[8] Usually it is unilateral but bilateral cases are also rarely seen which can cause more severe illness and are difficult to differentiate from acute tonsillitis.[9] The common site is in upper part(61%), however it can occur in middle (33%) or lower part (6%) of peritonsiilar space.[1]

The common clinical features are high grade fever, intense throat pain, hot potato voice, trismus, severe odynophagia, dysphagia, ipsilateral otalgia, toxicity, halitosis and drooling of saliva.

Clinical examination of throat is difficult due to trismus but is possible although view is small and poor. Uvula is deviated to the opposite side. Anterior tonsillar pillar is widened and distended. The affected tonsil is congested, enlarged and pushed medially. Confirmation of quinsy is done by needle aspiration, USG or CT scan. Intraoral ultrasonography (USG) is costly but has high diagnostic sensitivity and specificity. It can also avoid unnecessary aspiration or incision as they are painful and can damage to carotid artery. An untreated quinsy can lead to serious life threatening complications like laryngeal oedema, erosion of carotid artery, neck space abscesses, septicaemia and mediastinitis .[10]

Differential diagnosis includes infections (peritonsillar cellulitis, third molar abscess, coexistent infectious mononucleosis), inflammation (Kawasaki disease), vascular (internal carotid artery pseudo-aneurysm), foreign body and local tumours.[11,12] Antibiotic commonly used is an oral (for outdoor patients) or injectable (for hospitalised patients) broad spectrum, covering both gram-negative and gram-positive and beta lactamase producing bacteria like co-amoxiclave, 2nd or 3rd generation cephalosporin or a quinolone. Metronidazole is often added if anaerobic infection is also present or suspected.[13] Single dose of steroids also helps in recovery in addition to analgesics and anti-inflammatory drugs.[14]

Most otolaryngologists consider Incision and drainage (I&D) to be the gold standard treatment option for quinsy. Less commonly practiced other options are needle aspiration, hot tonsillectomy and intravenous antibiotics. Wide bore needle aspiration is inferior to incision and drainage because of higher recurrence rate and longer hospital stay but is superior in terms of technically easier to perform, limited instrumentation and less painful.[15] Hot or quinsy tonsillectomy has advantages of shorter hospital stay, easier surgery, few working days loss and more feasible in children who need general anaesthesia for drainage of quinsy.[16,17] In selected children, intravenous sedation by anaesthetist can be used to aspirate or drain the quinsy avoiding the need for admission and surgical drainage in the operating room.[18]

Complications of I&D of quinsy are aspiration of infected materials, excessive bleeding and pseudoaneurysm of the internal carotid artery but these are uncommon. Rarely in quinsy airway can be compromised which should be managed by fiberoptic bronchoscopic intubation.[19]

Methodology

Study design: This was a randomised controlled trial of single blind type as only the participants were blinded. This study was carried out in ENT department of United Hospital Rawalakot for 33 months, from January 2013 to September 2015. Approval from hospital ethical committee was taken prior to start of study. Informed consent was obtained from all patients for the procedure. Special consent was also taken from female patient whose photographs were used in figures of the article. All patients coming for the treatment of quinsy were given systemic analgesia by intramuscular injection of diclofenac 75mg about half an hour before the procedure. Aspiration of all patients was done by 10 or 5 cc syringe in upper part, if negative in middle part and if still negative then in lower part of peritonsillar space (fig-1). Only 50 confirmed cases of Quinsy were included in this study while 10 patients having peritonsillitis were excluded. All 50 patients having quinsy were randomly divided into two equal groups; Group-A and B. Patients in odd numbers were included in Group-A while patients in even numbers were included in Group-B. Patients of either sex and of any age were included in this study.

The patients of Group-A were not given any local anaesthesia as this was taught commonly during undergraduate and postgraduate ENT training. The Group-B patients were given local anaesthesia by infiltrating 1-3 ml of 2% lignocaine with 1ml syringe, at and around the site of incision (Fig-2). After few minutes the abscess was incised from confirmed site, with guarded number-10 surgical blade and evacuated with tilley's forceps (Figs- 3-5). The patients pain severity was recorded on numerical rating scale from zero to 10; before, during and half hour after I&D procedure.

Figure-1: Confirmatory needle aspiration of left PTA.

Figure-2: Injection of 1-3ml of 2%lignocaine at and around the site of incision with 1 ml syringe.

Figure-3: Incision of left quinsy with guarded surgical blade No. 10

Figure-4: Opening and evacuation of abscess with tilley's forceps.

Figure-5: Appearance half hour after I & D of abscess.

The zero means no pain;5 is medium pain and 10 is worst possible pain (Figure-6). All patients were given a full course of appropriate anti-biotic and systemic analgesic. They were followed up for 6 weeks and findings were recorded on a performa.

Statistical analyses were performed using SPSS version-23. Means and standard deviations were calculated. On **WWW.GraphPad.com**, the two tailed p-values were calculated by using unpaired t-test. P-value of 0.05 was considered significant.

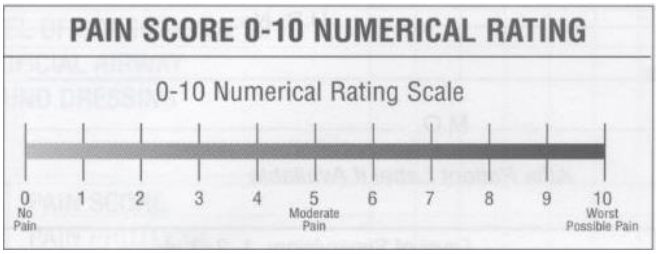

Figure-6 Numeric rating scale for assessment of severity of pain

Results

Mean age was 29.5 years and age range was 14-55 years. Sex ratio was almost equal in both groups. Left side quinsy was found in 54%, right side in 42% and bilateral quinsy in 4% cases. Recurrent quinsy was present in 4 (8%) cases. The mean pain score before I&D was almost equal (6.96 and 6.90) in both groups. The mean pain scores in Group-A patients are significantly more (7.56 and 5.50) during and half an hour after I&D of quinsy as compared to the Group-B (3.46 and 1.80) (Fig-7).

Table-1 Patients pain scores

Mean pain score	Group-A	Group-B	Std Deviation	P-Value
Pretreatment	6.96	6.90	2.23	0.09269
During I&D	7.56	3.46	2.75	<0.0001
After half hour	5.50	1.80	2.61	<0.0001

Statistical analyses showed no significant difference in pretreatment experience of pain in both groups (p-value of 0.9269); but this difference is statistically significant (p-value less than 0.0001) during and half hour after I&D (table-1). Other findings like extent of pus evacuation, need of hospitalization, need of IV fluids and antibiotics, rate of recovery, relief of trismus

and treatment cost were also more favorable for Group-B as compared to Group-A (table-2).Four patients (8%); three from Group-A and one from Group-B required hospitalization for 1-3 days. No side effects of LIA were found in this study.

Table-1 Patients pain scores

Findings	**Group-A**	**Group-B**
Evacuation of pus	Almost complete	Mostly incomplete
Need of hospitalization	Rare(3cases)	Very rare(1case)
Need of detention for few hours to give IV fluids and IV anti-biotic	Sometimes (4 cases)	Rare (1case)
Relief of trismus	More	Less
Rate of recovery	Slow	Fast
Cost	More	Less

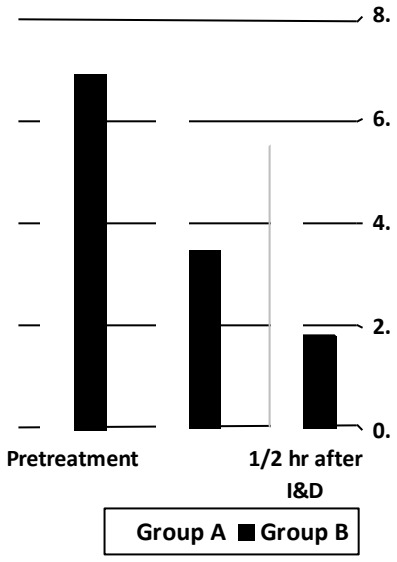

Figure-7 Patients Mean Pain Scores

Discussion

In this study the mean age of presentation was 29.5 years, sex ratio and involvement of both left and right sides were almost equal. These results are similar to a study by Kara N et al (UK) in 2010.[13] However this is contrary to other studies which showed predominance of males and left side involvement.[2,14]

The 8% recurrent quinsy rate in this study can be compared to a study by Iqbal S M et al (2009) where it was found to be 12.3% and by Khan M I, et al(2011) where it was 13.35%.[2,20]

Quinsy is one of the common ENT emergencies. If not treated adequately and promptly, it may give rise to severe complications like airway obstruction and death. Despite of frequent encountering in clinical practice, there is a lack of consensus on its definitive treatment.[21] Present study is aimed to formulate guide lines for incision and drainage of peritonsillar abscess. Quinsy is one of the common infections of head and neck region and comprises about 30% of soft tissue head and neck abscesses. Peritonsillar abscess commonly progresses from tonsillitis to cellulitis and ultimately abscess formation.[22]

In a prospective study by Khayr W and Taepke J in 2005, it was shown that Incision and Drainage as compared to needle aspiration and intravenous antibiotics, is more effective in rapidly relieving symptoms particularly trismus. Their total success rate with I&D was 100%, with aspiration 76% and with IV antibiotics was only 5%. While most of patients having quinsy necessitate ENT specialist referral, general physicians skilled in treating PTA with non-surgical methods, have to wisely choose which patients are good candidates for this type of management. General physicians can diagnose and treat quinsy if they are trained enough; otherwise they should refer these patients to nearby ENT surgeon timely, after giving primary treatment. Otolaryngologist must also decide which method of treatment will be the safest, most cost effective, least painful and most efficacious in providing early relief of symptoms, early recovery and preventing recurrence.[23]

Traditionally no local anesthesia is given for drainage of quinsy in most of the centers of the world and in Pakistan. This practice usually causes severe or profound pain and is often unpleasant both for patient and for the treating doctor. Pain is a wonderful feeling and may be a blessing of God as it helps in diagnosing many diseases and compels patients to seek treatment. When mild it may be regarded as sweet pain and is often ignored. If pain is moderate to severe, it impairs normal activities and if it becomes profound, patient may develop psychological problems or can become unconscious. Different methods have been adopted to alleviate this pain but consensus is yet to be established

In this study local infiltration anesthesia for drainage of quinsy has reduced the pain significantly. The low mean pain scores in Group-B of 3.46 and 1.8 during and half an hour after I&D procedure as compared to 7.54 and 5.50 in Group-A; are statistically significant (p-value less than 0.0001). These results are comparable to various other studies.[25,26] In a study by Bhargava K B et al (1978), 40 patients having quinsy were equally divided into two groups. Group-1 received topical anaesthesia by gargles of local anaesthetic agents and group-II patients were given local infiltration anaesthesia in addition to tropical anaesthesia. The results showed that there was a significant reduction of pain in 70 percent patients in group -II as compared to 30 percent in group-I. [25] In another study by Tendon S et al in 2004, thirty patients were divided into two equal groups. Group-I received only topical anesthesia while group-II received both topical and local infiltration anesthesia of 2 percent lignocaine with 1/80000 adrenaline by a dental syringe into mucosa over the abscess. The mean pain scores in both groups were recorded on a numeric rating scale from zero to 10. The results showed high pain scores (8.06 and 4.04) in Group-I and low pain scores (1.49 and 1.75) in Group-II. As the whole experience for patients of group-II was less painful and less distressing, therefore they recommended that LIA should be the method of choice for drainage of quinsy.[26]

Although in some ENT centers, for drainage of quinsy, topical anesthesia with spray of 5 or 10% lignocaine or gargles of 4 % lignocaine is given but in fact hardly there is any analgesia.[25] There may be mild reduction in pain after topical anesthesia, but this reduction is far inferior as compared to local infiltration anesthesia.[25,26] Moreover there is high risk of aspiration of infected contents during and after incision and drainage of quinsy. Therefore as topical anesthesia benefit has become doubtful, it is better that it should be avoided and replaced by more efficient and safe local infiltration anesthesia.

Conclusion

Local infiltration anesthesia (LIA) is significantly beneficial in reducing pain during and after drainage of quinsy as compared to alternatives like no local or topical anesthesia by gargles. Moreover it enables complete evacuation of abscess leading to faster recovery rate and is more cost effective. Therefore LIA can be adopted as a method of choice for drainage of quinsy.

References

1. Spires J R, Owens J J, Woodson G E, Miller R H. Treatment of peritonsillar abscess: A prospective study of Aspiration vs Incision and Drainage. Arch Otolaryngol Head Neck Surg 1987; 113:984-86
2. Khan M I, Khan A & Muhammad. Peritonsillar abscess: clinical presentation and efficacy of incision and drainage under local anesthesia. J Ayub Med Coll Abbota bad.2011; 23 (4):34-36.
3. Marom Tal, Cinamon Udi, Itskoviz David, Roth Yehudah. Changing trends of peritonsillar abscess. American Journal of Otolaryngology-Head and Neck Medicine and Surgery 2010;31:162-67
4. Thomas G. Costantino, Wayne A. Satz, Wade Dehnkamp and Harry Goett. Randomized Trial Comparing Intraoral ultrasound to Landmark based Needle aspiration in Patients with suspected Peritonsillar Abscess. Academic Emergency Medicine 2012; 19(No-6):626-631. www.aemj.org
5. Tuli I.P and Verma B.S. Unusual Foreign Body presenting as Quinsy.SMU Medical Journal.2014;1(No-2):342-347.
6. Megalamani GS, Suria G, Manickan U, Balasubramanian D and Jothimahalingam S. Changing trends bacteriology of peritonsillar abscess.J Laryngol Otol 2008; 122(9):928-30.
7. Sowerby LJ, Hussain Z, Hussain M. The epidemiology, antibiotic resistance and pot-drainage course of peritonsillar abscess in London, Onterio. J Otolaryngol Head Neck Surg 2013; 42: dio: 10.1186/1916-0216-42-5.
8. Powel, J. and Wilson, J.A. An evidence-based review of peritonsillar abscess. Clin Otolaryngol 2012; 37:136-145.
9. Watanabe T, Suzuki M. Bilateral peritonsillar abscess: our experience and clinical features. Ann Otol Rhinol Laryngol 2010;10:662-6
10. Kinzer S, Maier W, Ridder GJ. Peritonsillar absscess:a life threatening disease- diagnostic and therapeutic aspects. Laryngorhinootologie. 2007;86:371-5
11. Marcelle Macnamara .Acute and chronic pharyngeal infections. In Michael Glesson, Editors. Scott Brown's Otolaryngology. 7th edition.Edward Arnold (pub), 2008; Vol: 2;1996-1998.
12. Thomas J.A, Ware T.M and Councilman F.L. Internal carotid artery pseudoaneurysm masquerading as a peritonsillar abscess. J. Emerg Med.2002;22:257-61
13. Kara N Spinu C. Appropriate antibiotic for peri tonsillar abscess- a 9 month cohort. Otorhino laryngologia Head Neck Surg 2010;40:20-4
14. Shaikh RK, Treatment of peritonsillar abscess and role of steroids J Liaqat Uni Med Sci2008;1:31-3
15. Muhammad Ismail Khan, Kamran Iqbal, Muhammad. Peritonsillar abscess: Comparison of outcome of incision and drainage versus needle aspiration. Gomal Journal of Medical Sciences 2012; 10(2): 205-8.
16. Muhammad Javed, Fazal-I-Wahid, Nader Khan, Qaisar Khan, Naseemul Haq, Isteraj Khan Shahabi. Interval tonsillectomies: Comparision of per and post operative complications in patients undergoing early and delayed

after peritonsillar abscess. Professional Med J 2014;21(5):1043-47
17. Fagan J.J and James M.F.M. A prospective study of anesthesia for quinsy tonsillectomy. Anaesthesia 1995;50:783-85
18. Luhmann JD, Kennedy RM, McAllister JD, Jaffe DM. Sedation for peritonsillar abscess drainage in the paediatric emergency department. Paediatric emergency care 2002;18(1): 1-3
19. Ono K, Hirayama C, Ishi K, Okamoto and Hidaka H. Emergency airway management of patients with peritonsillar abscess. J Anesth 2004; 18(1):55-58.
20. Iqbal S.M, Hussain A, Mughal S, Khan I.Z and Khan I.A. Peritonsillar cellulitis and Quinsy: clinical presentation and management. Armed Forces Med J 2009; 57 :213-18.
21. Chi T-H, Yuan C-H, Tsao Y-H. Comparison of Needle Aspiration with Incision and Drainage for the Treatment of Peritonsillar Abscess. WIMJ Open;1 (1): 11-13.
22. Kulkarni V, Patel T. Management of Peritonsillar Abscess: comparative prospective study of Needle Aspiration and Incision and Drainage in central Indian population. Asian J of Biomedical and Pharmaceutical Sciences 2013; 3(18): 61-63.
23. Khayr W and Taepke J. Management of peri tonsillar abscess: Needle aspiration versus incision and drainage versus tonsillectomy. Am J. Therapeutics 2005;12:344-350
24. Yaghchi A, Cruise C, Kapoor A, Singh k and Harcourt J. Outpatient management of patients with a peritonsillar abscess. Clin Otolaryngol 2008; 33: 52-55.
25. Bhargava K.B, Shah T.M and Gadre K.C. Infiltration anesthesia for incision and drainage of Peritonsillar Abscess. Indian Journal of Otolaryngology.1978;30(No-3):144
26. Tandon S, Roe J & Lancaster J. A randomized trial of local anesthetic in treatment of quinsy. Clinic Otolaryngol. 2004; 29:535-537.

Contribution of authors:

Muhammad Farooq has Conceived the idea , planed and carried out the study and prepared manuscript