

Outcome of Antral Washout in the Initial Stages of Maxillary Sinusitis

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ABSTRACT

Aim: To determine the treatment outcome of antral washout in patients with initial stages of maxillary sinusitis

Study Design: Descriptive case series

Place and Duration of Study: Department of ENT, Pak Red Crescent Medical and Dental College, Kasur from 1st January 2020 to 30th June 2020

Methodology: One hundred male patients presented with subacute maxillary sinusitis were enrolled in this study. Patients detailed demographics including age, BMI, symptoms and preoperative PNS X-ray findings were recorded after taking written consent. At maximum wash out was done 3 to 4 times; till aspirated fluid is clear. Post operatively X-ray paranasal sinuses were done again to see the status of maxillary sinus. Symptom relief was also accessed.

Results: Mean age of patients was 32.45±8.62 years. Mean BMI was 25.36±2.14 kg/m². Purulent rhinorrhea was most dominant symptom (97%), followed by nasal obstruction (85%), headache and facial pain (66%). 85 (85%) patients get full relief of the symptoms while 15 (15%) patients need for more antibiotics according to the report of culture sensitivity along with steroid nasal spray and antihistamine for two weeks to treat nasal allergies.

Conclusion: Antral washout is safe and effective for the treatment of acute and subacute maxillary sinusitis.

Keywords: Maxillary sinusitis, Antral washout, Purulent discharge

INTRODUCTION

Acute rhino sinusitis is a chronic condition that still has diagnosis and treatment problems. It generally responds to cautionary treatment and approximately 80% of patients recover without antibiotic treatment within 2 weeks.¹ In some cases though the symptoms may be extreme or the first-line treatment unsuccessful. Antral irrigation can be taken into account in these patients. It helps to validate and distinguish the diagnosis from other facial pain, offers a confident bacterial test sample and can also alleviate facial pain and straining.²

Antral irrigation has been a common gold-based technique in clinical research studies to diagnose rhino sinusitis for a long time and has also been recommended for treating maxillary sinusitis.^{2,3} However there have been relatively little analysis of its importance as a treatment of rhino sinusitis and old studies.⁴ Recently, optional methods have been implemented to collect microbial samples.^{5,6} In 2011, Desrosiers and their colleagues⁷ have suggested that sampling by maxillary tap or endoscopically guided culture should be performed if culture is appropriate for the unusual evolution or complication of acute rhino sinusitis. Antral irrigation was found to be useful for the confirmation of bacteriologic diagnosis in intensive care units patients in the 2012 European Position Paper on Rhino sinusitis and Nasal Polyposis (EPOS)⁸ but was not protected by acute maxillary rhino sinusitis diagnosis nor treatments for patients who were not hospitalized or non-sedated. Assessments of antral irrigation pain can also affect its use in diagnosis and treatment.⁹

Finnish advice on rhino sinusitis based on good clinical practice also provides a recommendation for antral irrigation care for serious or prolonged cases after the

effective treatment has failed.¹⁰ We conducted present study with aimed to determine the outcomes of antral washout in patients presented with acute or sub acute maxillary sinusitis.

MATERIALS AND METHODS

This retrospective/observational study was conducted at Department of ENT, Pak Red Crescent Medical and Dental College, Kasur from 1st January 2020 to 30th June 2020. A total of 100 male patients presented with acute or subacute maxillary sinusitis were included. Patient's ages were ranging from 20 to 60 years. Patients detailed demographics including age, BMI, symptoms and preoperative PNS X-ray findings were recorded. Patients with complicated maxillary sinusitis, systemic illness, CA, history of previous sinus surgery and multiple sinuses were excluded. All patients had complete blood count and PT/APTT done before procedure. Patient was called in the OPD on specified days and reexamined before procedure. Procedure was explained verbally. After that, 4 percent xylocaine with adrenaline packs were kept in inferior meatus. During this time patient vital sign with conscious level were checked. The lichtwitz trocar and cannula inserted half inch behind the anterior end of inferior turbinate. Here the bone is usually very thin and insertion is very easy. After introduction of cannula aspiration is done and sent for culture and sensitivity. Sinus is washed three to four times with normal saline using 50 ml disposable syringe. Patient stayed in the OPD for one hour and then discharged on antibiotics, analgesics and nasal drops. If aspirate is frankly purulent, patient is called after 2 days to repeat the procedure. At maximum wash out was done 3 to 4 times; till aspirated fluid is clear. Post operatively X-ray

paranasal sinuses were done again to see the status of maxillary sinus. Symptom relief was also accessed by filling the same pro forma that was used for pre operative assessment. All the data was analyzed by SPSS 24.

RESULTS

Mean age of patients was 32.45±8.62 years and majority of patients 45% were ages 30 to 40 years. Mean BMI was 25.36±2.14 kg/m². Purulent rhinorrhea was most dominant symptom (97%), followed by nasal obstruction (85%), headache and facial pain (66%), fever in 61%, cough in 39%, 39% had sneezing, ear blockage in 34%, hyposmia in 7% and epistaxis in 4% patients respectively (Table 1)

Preoperative PNS X-ray showed that mucosal thickening was most commonly observed abnormal sinus appearance in 79% patients followed by opaque antrum in 18% and 3% patients had fluid level (Table 2). Three weekly irrigations were done on 25 patients and 50 patients were twice irrigated. 75% patients get acceptable relief from their symptoms in the first two sittings. Remaining 25% patients were given another course and out of which 10% got full relief of symptoms while 15% had no improvement. According to the outcomes, 85 (85%) patients get full relief of the symptoms while 15 (15%) patients need for more antibiotics according to the report of culture sensitivity along with steroid nasal spray and antihistamine for two weeks to treat nasal allergies (Table 3).

Table 1: Demographic information of the patients

Variable	No.	%
Mean age (years)	32.45±8.62	
BMI (kg/m ²)	25.36±2.14 kg/m ²	
Symptoms		
Purulent rhinorrhea	97	97.0
Nasal obstruction	86	86.0
Headache/facial pain	67	67.0
Fever	61	61.0
Cough	39	39.0
Sneezing	39	39.0
Ear blockage	34	34.0
Hyposmia	7	7.0
Epistaxis	4	4.0

Table 2: Findings of Pre operative PNS X-ray

PNS X-ray	No.	%
Mucosal thickening	79	79.0
Opaque antrum	18	18.0
Fluid level	3	3.0

Table 3: Outcomes of procedure

Outcomes	No.	%
Successful	85	85.0
Failure	15	15.0

DISCUSSION

Sinusitis commonly caused by viruses, bacteria or fungi is inflammation of the sinuses. It may be chronic or acute. Sinuses do not usually contain bacteria. Currently secreted mucus can be washed away and air can circulate. Often sinus opening is blocked by inflammation or excessive mucus, bacteria, and the immune factors released in the Fusobacterium, Prevotella, Porphyromonas, and Peptostreptococcal and Fungus, Aspergillus, Penicillium,

Cladosporium, Alternaria and candida, can become more quickly developing and irritating.¹¹ Endoscopic sinus surgery is considered as gold standard for maxillary sinusitis; however antral washout procedure with postoperative antibiotics had been used clinically for the treatment of acute or subacute maxillary sinusitis with satisfactory results. We conducted this study to determine the outcomes in term of complete relief in patients with maxillary sinusitis treated with antral washout. This study showed that mean age of patients was 32.45±8.62 years and majority of patients 45% were ages 30 to 40 years. Mean BMI was 25.36±2.14 kg/m². These results were comparable to some previous studies in which average age of patients was 32 years.^{12,13}

In the present study, we found that purulent rhinorrhea was most dominant symptom (97%), followed by nasal obstruction (85%), headache and facial pain (66%), fever in 61%, cough in 39%, 39% had sneezing, ear blockage in 34%, hyposmia in 7% and epistaxis in 4% patients respectively. A study conducted by Babuk et al¹⁴ post nasal discharge in 44.30%, nasal obstruction 81.50%, sneezing 38.70%, headache 43.20%, rhinorrhea 33.70% and anosmia 83.10%.

In present study PNS X-ray showed that mucosal thickening was most commonly observed abnormal sinus appearance in 79% patients followed by opaque antrum in 18% and 3% patients had fluid level. A study conducted by Benerji et al¹⁵ reported that majority of patients had mucosal thickness as per CT findings followed by sinus opasification.

In this study three weekly irrigations were done on 25 patients and 50 patients were twice irrigated. 75% patients get acceptable relief from their symptoms in the first two sittings. Remaining 25% patients were given another course and out of which 10% got full relief of symptoms while 15% had no improvement. According to the outcomes, 85 (85%) patients get full relief of the symptoms while 15 (15%) patients need for more antibiotics according to the report of culture sensitivity along with steroid nasal spray and antihistamine for two weeks to treat nasal allergies. A study conducted by Anupam et al¹⁶ regarding management of chronic sinusitis by antral washout and middle meatus antrostomy and in their study they reported that about 87.23% patients had full relief of symptoms after 3 to 4 courses of antibiotics.

Khan et al¹⁷ conducted study regarding outcomes of antral washout with and without metronidazole irrigation in patients with chronic maxillary sinusitis and they reported that 94% patients showed full improvement in metronidazole groups while 80% showed full improvement of symptoms who treated without metronidazole.

For antral washout and irrigation with metronidazole solution, patients with symptomatic persistence even after 10-14 days should be considered. Likewise, chronic rhino sinusitis coexists in the vast majority of cases with nasals polyposis and asthmus, which are favorable for different medical treatments along with endoscopic sinus surgery.¹⁸

CONCLUSION

Antral washout is one of the cost effective and easily manageable daycare procedures. It provides relief by flushing out debris, infected and inspissated mucus that

perpetuate infection and attempt to clear any obstruction of the maxillary ostium. It also restores normal ciliary function. It can be performed at any tehsil or district headquarters hospital where the facilities of CT scan and advanced surgical procedures are not available. In our study, 85% patients get acceptable relief from their symptoms.

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