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Is Antral Wash Out Really Indicated In Acute Bacterial Rhino sinusitis?

Introduction:

Acute bacterial rhinosinusitis (ABRS) is one of the most prevalent infections of the upper respiratory system. Antral wash out still remains the first choice amongst many otolaryngologists in treating a case of ABRS. With the advent of modern antibiotics and better systemic anti-allergens and decongestants, the indications for antral washouts in treating such cases have been shrunken.

Objective:

We sought to establish its role following a rational conservative treatment with antibiotics and other supportive medicines.

Materials & Methods:

Of the 52 cases of ABRS, that were treated conservatively for varied duration, only 3 cases underwent antral wash out while 7 cases required functional endoscopic sinus surgery to cure the disease.

Result:

The outcome of the conservative treatment was statistically significant ($P < .05$).

Conclusion:

The study reiterates that indications for antral wash outs are limited for ABRS and it should be restricted for limited indications.

Key Words: Sinusitis, antral wash out, conservative treatment

INTRODUCTION:

Acute rhino sinusitis (ARS) is probably the commonest disease that is being treated by an otolaryngologist every day. Rhinosinusitis has accounted for 12 to 17 million annual visits to physicians and for 12% of antibiotics prescribed to adults in the US, making it one of the 10 most common conditions to be treated in ambulatory practice. ARS describes a sudden onset of two or more symptoms of nasal discharge, nasal blockage or congestion, facial pain or pressure and reduction or loss of smell which are less than twelve weeks of duration. If the symptoms are of lesser duration (ten days), it is often considered to be of viral etiology. However; symptoms may persist beyond 10 days when secondary bacterial infection prevails. Antibiotics are reserved for moderate or severe cases or when there is development of complications of acute rhino-sinusitis. Acute bacterial rhino-sinusitis is mainly caused by gram positive bacteria namely *Streptococcus pneumoniae*, *Haemophilus influenzae* and *Moraxella catarrhalis*. *H. influenzae* has been reported to produce toxins that interfere with ciliary functions and damage mucosal cells.³ Considering the above group of pathogens of ABRS, the use of amoxicillin/clavulanate is generally recommended for the initial treatments. If the penicillin groups of antibiotics are to be avoided the other alternatives are cephalosporin groups like cefpodoxime proxetil, cefuroxime axetil and ceferidine.^{4,5} The fluoroquinolones are also being favored as a second line antimicrobials.⁶ Surgical interventions are justified when a medical treatment fails or adulate development of an acute complications.¹ This study is focused on the efficacy of conservative treatment in the well selected cases of ABRS and thereby to minimize early surgical intervention like antral wash out.

MATERIALS AND METHODS:

This is a prospective study carried out in 52 patients suffering

from ABRS. This study was carried out for four years from August 2005 to July 2009. It included equal number of sexes ranging from 13 to 60 years. The diagnosis of sinusitis was based on at least two symptoms of acute sinusitis and supported by a x-ray of paranasal sinuses either taken on the first or in second visit in continuation of the medical treatment. Patients who were symptomatic for 10 days to 3 weeks were taken up for the study so as to exclude acute viral and chronic rhinosinusitis respectively. None of the patient had a history suggestive of sinusitis for the last one year. Patients with clinical feature of ABRS but with additional clinical features like gross DNS, polyps, concha bullosa and neoplasia were excluded from the study. The cases which did not follow the treatment were also excluded from the study. Of the 52 cases only 5 cases had received cefpodoxime proxetil, because of intolerance or allergic history to the penicillin, while rest of the patients were treated with moxycillin/clavulanate for 10 days to 3 weeks depending upon their receding symptoms and with a x-ray PNS. A check x-ray of PNS was done in all the cases at the end of treatment. Absence of the previous symptoms with a negative finding in the check x-ray at the end of the treatment was considered as cured. Co-prescription of NSAID, antihistamines and systemic decongestants were also prescribed in all the patients till deemed necessary. Duration and efficacy of the treatment was judged by the symptoms and with a check x-ray of PNS. Ten patients who did not show any improvement underwent surgical interventions.

RESULTS:

Of the 52 cases, there was equal number of sexes ranging from 13 to 60 years with a mean age 30 years. The patients had received 10 days to 3 weeks of either amoxicillin/clavulanic acid or cefpodoxime proxetil. The second antibiotic group of patient included was only five who had a history of penicillin allergy or gastric intolerance. Because of the very small number of the

efpodoxime group, no comparison was made with amoxillin/clavunate group. The required dose/duration of the treatment was assessed with receding or absence of symptoms compared with a x-ray of the paranasal sinuses. Ten cases who did not respond well underwent surgical interventions (Table 1). The statistical tool used was SPSS 16 for windows. The conservative treatment outcome was 80.8% with significance ($P < .05$), with freedom of difference six. (Table 2).
 Table 1: Conservative Treatment Outcome

	Frequency	Percent	Valid Percent	Cumulative Percent
Failure Cases	10	19.2	19.2	19.2
Conservative Success	42	80.8	80.8	100.0
Total	52	100.0	100.0	

Table 2: Chi-Square Tests

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	52.000	6	.000
Likelihood Ratio	50.913	6	.000
N of Valid Cases	52		

Three cases which not show any signs of improvement following 3 to 7 days of treatment but with hazy bilateral maxillary sinusitis on a x- ray of PNS underwent bilateral antral washouts. The remaining 7 cases had to undergo functional endoscopic sinus surgery (FESS). And two of these FESS cases were suffering from non invasive fungal sinusitis.

DISCUSSIONS:

Acute rhinosinusitis (ARS) is highly prevalent condition. The disease is associated with a high degree of disability, impairment of quality of life and school and work place absenteeism. ARS is most often precipitated by a viral infection. Although definitive clinical criteria that differentiate between ABRS and viral rhinosinusitis are lacking, careful evaluation of the duration and severity of the symptoms provides a rational basis for diagnosis.⁵ Typical sign symptoms include nasal congestion, purulent nasal discharge, headache, facial pain or tenderness. Since most of the ARS cases are viral⁶ only the cases with 10 days to three weeks of symptoms were included in the study to avoid viral infections. In ABRS the commonest organisms are gram positive bacteria. Amoxillin and clavulanic acid is therefore a popular choice.⁷ In addition, most cephalosporins recommended by recent guidelines e.g., cefpodoxime, cefuroxime, and cefdinir are considered effective alternatives to amoxillin in adults who are allergic to penicillin.⁸ In the present study also same antibiotic rationale was used. In the study only ten cases did require surgical intervention with 80.8% success rate and only 3 underwent antral wash out due to conservative failure. Antral washout has been used in the management of sinusitis for at least a century.⁹ In the pre antibiotic days, the need for sinus washout was more common than today.¹⁰ Even in radiologically positive maxillary sinusitis which the antral washout clears may not be the clinically affected area in sinusitis. This procedure should be limited to stubborn cases when conservative treatment is not effective with persistent fluid level in the maxillary antrum.¹¹ In most cases, infection spread from the anterior ethmoid area and middle meatal region to secondarily affect the maxillary and frontal sinuses.¹² Antral washout does not address the critical area of the anterior ethmoid cells and middle meatus. This may

explain why there is no significant advantage of antral washouts and medical treatment over medical treatment alone.⁷ Furthermore, antral lavage does not always indicate the microbiological flora of the maxillary antrum. Rather, a culture of endoscopically-guided swabs from the middle meatus may be indicative of the causative organisms within the sinuses but needs to be evaluated against culture of species obtained via proof puncture.⁷ Standard radiological examination cannot alone offer sufficient guidance as to whether an antral puncture should be done or not, since an abnormal finding does not mean that fluid is present and a radiologically normal sinus may contain fluid.¹³ With the advent of broader and better antibiotics, the older surgical intervention like antral wash outs should not be a initial form of treatment rather a rational use of antibiotics with supportive medicines are advocated for the treatment of ABRS. It should be limited to conservative treatment failure cases only with a frank maxillary fluid level or even better diagnostic tool like CT scan of the paranasal sinuses should be considered instead, for further treatment.

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