

Antral washout with nasal polypectomy: Should both be combined? * †

Zaid Shehab¹, Marque Dowell², Ahmes L. Pahor²

¹ Sandwell District General Hospital, Birmingham, United Kingdom

² Dudley Road Hospital, Birmingham, United Kingdom

SUMMARY

Two hundred and sixteen patients with nasal polyps were studied. All patients had antral washouts performed at the same time as nasal polypectomy. Two hundred and sixty aspirates were sent for culture and microscopy; bacteria were cultured from 58 of these specimens in 38 patients. One hundred and one patients had pre-operative sinus radiographs of which 94 were reported as abnormal with a 52% false-positive result. It is concluded that antral washouts should be routine in all patients having nasal polypectomy. Sinus radiographs are an unnecessary pre-operative investigation in patients with uncomplicated nasal polyps.

Key words: nasal polypectomy, antral washout, bacteriology, sinus X-rays

INTRODUCTION

Following a study of 70 patients who underwent nasal polypectomy and antral washouts in Dudley Road Hospital, Birmingham, and reported earlier (Dowell and Pahor, 1992), the study was extended to include 146 further patients treated by the same consultant and colleague in Sandwell District General Hospital.

The total number of patients being reported is 216. The same format of data collection was followed in both branches of the study. The results of both branches were very similar in many respects and the overall conclusion is the same, i.e. antral washouts should be recommended in all patients who have nasal polypectomy and there is no need for sinus radiographs in these patients who have uncomplicated nasal polyps.

There are a number of theories regarding the pathogenesis of polyps. The most accepted being infection and allergy (Slavin 1988; Dawes et al., 1989). As yet, no definitive proof has been offered to credit one theory above the other.

Nasal polyps are a disease exclusive to man, and are thought to have already been known in Ancient Egypt (Pahor, 1992). They are outgrowths of the nasal mucosa. Polyps are usually seen when unilateral pan-sinusitis is present. They are often small, and arise from the ethmoids and resolve once the sinusitis is treated effectively.

When simple mucus polyps are present, the role of infection is more confused. Once there are polyps in the nose, there is impairment of the nasal airway. As the polyps increase in size and number there is increasing impairment of drainage of the

normal secretions of the respiratory epithelium. This leads to retention of secretions and secondary infection of the nose and sinusitis supervenes. This infection is usually caused by organisms normally resident in the upper respiratory tract.

In this study we endeavoured to see how many patients had concurrent sinus infection at the time of presentation with symptoms secondary to nasal polyps. We also looked at the value of sinus radiographs in these patients.

METHODS

A total of 216 patients from two hospitals in Birmingham under the care of two consultants over a 10-year period (1981-1991) were studied. All patients had antral washouts at the time of surgery. Antral washouts and aspirates were collected and sent for microscopy and aerobic culture, and the results recorded as (a) no growth; or (b) organisms were identified.

Data from the operative notes were recorded. Washings being described as clear/mucous, turbid and mucopurulent/pus; only those washings which were turbid or mucopurulent/pus were considered indicative of sinus infection.

One hundred and one patients had sinus radiographs in the months before surgery. The time interval between X-ray and surgery was determined by the period spent on the waiting list. This was always less than 12 months.

RESULTS

Two hundred and sixteen patients were included in the study. The age ranged from 14 to 83 with a mean age of 45.5 years. The

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Table 1. Bacteriological findings in relation to antral washouts.

antral washouts	positive culture	no growth	total	% growth
turbid	31	55	86	36
clear	8	35	43	19
total	39	90	129	30

Table 2. Organisms cultured from antral washouts.

bacterial cultures	No. patients	%
<i>Haemophilus influenzae</i>	10	28
<i>Streptococcus pneumoniae</i>	5	14
skin commensals	5	14
<i>Streptococcus Milleri</i>	4	11
<i>Enterobacter sp.</i>	3	8
<i>Branhamella catarrhalis (mixed growth)</i>	2	5.5
<i>Proteus mirabilis</i>	2	5.5
<i>Borella multocidens</i>	2	5.5
<i>Streptococcus haemolyticus B</i>	2	5.5
<i>Peptococcus sp.</i>	1	3
total	36	100

Table 3. Sinus radiograph appearance in relation to antral washouts.

sinus radiograph appearance	antral washout turbid	antral washout clear
abnormal	45	49
normal	0	7
total	45	56

male-to-female ratio was 2.1:1. This is similar to that found by other authors (Martin, 1967; Brown, 1969; Schenk, 1974; Maloney, 1977; Majumdar and Bull, 1982).

Material from 129 patients was sent to the Microbiology Department. Eighty-six of the 129 cases submitted for culture were turbid, purulent or mucopurulent. Organisms were cultured from 31 cases (i.e. 36%; Table 1). The other 43 specimens were described as clear in the operative notes, although 8 of these grew organisms including *Streptococci* (6 cases), *Haemophilus influenzae* (1 case) and *Proteus mirabilis* (1 case). Of those organisms cultured in the turbid, mucopurulent/pus aspirates (Table 2) the majority were skin and respiratory tract commensals. One hundred and one of these patients had sinus radiographs in the months prior to surgery; Table 3 illustrates the results. Ninety-four were reported as abnormal ranging from mucosal thickening to complete opacification. Only seven were reported as normal. However, of the X-rays reported as abnormal 49 of these did not correlate with the findings on naked-eye appearance of the aspirates, i.e. a false-positive rate of 52%.

DISCUSSION

It is generally agreed that once nasal polyps have formed they need to be removed. The most effective and safest way of accomplishing this and minimizing the likelihood of recurrence is to remove the polyps under general anaesthesia. Different methods for their removal were adopted throughout the past for their removal (Pahor and Kimura, 1991).

Whether sinus infection is a factor in the pathogenesis of polyps or a result of nasal congestion and obstruction to secretions with secondary infection is a debate that is unsettled. Nonetheless, in our study 48% of patients with nasal polyps had microscopical evidence of maxillary sinusitis from aspirate. Majumdar and Bull (1982) reported in 64% of their patients a coexisting sinusitis.

In the cost-effective atmosphere of today's medicine the value of pre-operative sinus X-rays in patients with simple polyps is to be questioned. In our study there was a false-positive diagnostic rate of 52%. Croft et al. (1991) demonstrated a 35% false-positive diagnostic rate, others (Vourinen et al., 1962; Axelson et al. 1970; Watt Bouslen and Karle, 1977; Pahor, 1978) have also questioned the usefulness of this investigation.

In conclusion, we feel that antral washouts at the time of nasal polypectomy is a worthwhile simple procedure that should be carried out in all patients presenting with nasal polyps. Plain sinus radiographs are of little value and unnecessary in patients with simple polyps.

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Ahmes L. Pahor, FRCS
 Dudley Road Hospital
 PO Box 293
 Birmingham B18 7QH
 United Kingdom