

Flexible transnasal endoscopy: is local anaesthetic necessary?

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Abstract

Prior to flexible transnasal endoscopy (FTE) topical intranasal agents such as cocaine or combinations of a local anaesthetic and vasoconstrictor agent are generally recommended for local anaesthesia, easier access, and better examination of the interior of the nose, especially the middle meatus. This double-blind study involved 60 patients. Each had five per cent cocaine sprayed in one nostril and normal saline in the other. The pain/discomfort and gag scores showed no statistical difference.

Forty-two (70 per cent) patients had a moderate/marked deviation of the nasal septum. A significant pain score (3-5) was obtained in 33.3 per cent of cases with the deviation towards the cocaine side and in 37 per cent of cases with the deviation towards the saline side. Ease of procedure scores for both sides were also comparable, when deviation of the nasal septum was taken into account.

Key words: Endoscopy, nasal cavity; Anaesthesia, local; Cocaine; Saline solution; Nasal septum

Introduction

In most ENT clinics flexible transnasal endoscopy (FTE) is now a routine procedure for examining the nose, pharynx and larynx. In our department, prior to carrying out FTE, it has been a standard procedure to spray the anterior nares of the patient with three metered doses of five per cent cocaine on each side, using the Downs' atomizer.

The aim of this study was to evaluate if it is necessary to spray the anterior nares with a local anaesthetic and vasoconstrictor (five per cent cocaine in this case) prior to FTE. We used the Olympus ENF P3 nasendoscopes. In all cases these were attached to a monitor and videorecorder via a camera.

Methods and materials

All the procedures were carried out by one doctor (VS). The Olympus ENF P3 nasendoscope is 3.7 mm in diameter. Tip deflection is accomplished with a single thumb-operated control. The tip may be deflected 90 degrees upwards and 130 degrees down, allowing ample manoeuvrability.

Sixty patients, none of whom had undergone the procedure previously, were involved in the study. Each patient was given a two part questionnaire. This involved two parameters, discomfort/pain and gag, both with a scoring system from 0 to 5 as follows:

0 No discomfort	0 No gag
1 Mild discomfort	1
2 Moderate discomfort	2
3 Severe discomfort/mild pain	3
4 Moderate pain	4
5 Severe pain	5 Severe gag

Before the procedure, the patient completed the first part of the questionnaire by marking the apprehension score for discomfort/pain and gag.

In all cases one nostril was sprayed with three metered doses of five per cent cocaine, and the other with three metered doses of normal saline. The sides were determined on the basis of instructions in a sealed and numbered envelope, so that 30 patients had cocaine sprayed in the right nostril and 30 in the left nostril. This was carried out by a doctor who was not carrying out the FTE.

The nasendoscopy was carried out 10 minutes after the nostrils were sprayed. In all cases the endoscope was passed into the hypopharynx and larynx from both nostrils.

After the procedure the patient completed the second part of the questionnaire by marking the discomfort/pain and gag score for each side separately. The examining doctor also filled a questionnaire after the procedure, commenting on the ease of the procedure on each side (scored from 0-5) and the relevant findings.

The data were analysed in SPSS PC+ using the Mann-Whitney U for comparisons between independent groups and the Wilcoxon matched-pairs

TABLE I
PRE-ENDOSCOPY APPREHENSION SCORES AND POST-ENDOSCOPY GAG SCORES

Score	Pre-endoscopy	Post-endoscopy gag scores	
	Apprehension 60 subjects	Cocaine side 60 nostrils	Saline side 60 nostrils
0-2	33 (55%)	60 (100%)	60 (100%)
3-5	27 (45%)	-	-

(*p* = 0.9654: NS)

signed rank test for comparisons between dependent groups.

Results

The 60 patients in the study included 31 males and 29 females. The age range was 17 to 83 years. Twenty-four patients had a predominant nasal symptom, 21 had a predominant pharyngeal and/or laryngeal symptom, and 15 patients had all these areas affected to a similar extent.

Thirty-three (55 per cent) patients gave a 'gag apprehension' score of 0-2; 27 (45 per cent) gave a score of 3-5. After the endoscopy all 60 patients gave a gag score of 0-2 in both nostrils. The results are summarized in Table I. In 51 (85 per cent) nostrils sprayed with the cocaine and 50 (83.3 per cent) sprayed with the normal saline the 'post endoscopy' gag score was 0. The gag scores for the cocaine and saline sprayed nostrils showed no statistical difference (*Z* = -0.0445, *p* = 0.9654).

Thirty-six (60 per cent) patients gave a 'pain apprehension' score of 0-2; 24 (40 per cent) gave a score of 3-5. Following the endoscopy a pain score of 0-2 was obtained in 51 (85 per cent) nostrils sprayed with the cocaine, and 50 (83.3 per cent) nostrils sprayed with the saline. A pain score of 3-5 was obtained in nine (15 per cent) cocaine sprayed nostrils and 10 (16.7 per cent) saline sprayed nostrils. The results are summarized in Table II. The pain scores for the cocaine and saline sprayed nostrils showed no statistical difference (*Z* = -1.1291, *p* = 0.2589).

The degree of deviated nasal septum (DNS) is to an extent a subjective observation, but all the endoscopies in this study were carried out by the same doctor (VS). The DNS was classified as mild (13 patients), moderate (17 patients) and marked (25 patients). Only the moderate and marked DNS were

TABLE II
PRE-ENDOSCOPY APPREHENSION SCORES AND POST-ENDOSCOPY PAIN SCORES

Score	Pre-endoscopy	Post-endoscopy pain scores	
	Apprehension 60 subjects	Cocaine side 60 nostrils	Saline side 60 nostrils
0-2	36 (60%)	51 (85%)	50 (83.3%)
3-5	24 (40%)	9 (15%)	10 (16.7%)

(*p* = 0.2589: NS)

TABLE III
DNS AND PAIN SCORES

Pain score	DNS		No DNS	
	Cocaine side 15 nostrils	Saline side 27 nostrils	Cocaine side 45 nostrils	Saline side 33 nostrils
0-2	10 (66.7%)	17 (63%)	41 (91%)	33 (100%)
3-5	5 (33.3%)	10 (37%)	4 (9%)	-

(*p* = 0.411: NS)

considered as relevant, thus affecting 42 (70 per cent) of the patients. Fifteen patients had a DNS (nine moderate and six marked) towards the nostril sprayed with cocaine, and 27 had a DNS (eight moderate and 19 marked) towards the nostril sprayed with saline.

Amongst patients with a moderate or marked DNS towards the cocaine sprayed nostril, five (33.3 per cent) gave a pain score of 3-5. In patients with a moderate or marked DNS towards the saline sprayed nostril, 10 (37 per cent) gave a pain score of 3-5. A pain score of 5 was obtained in just two patients, both had a marked DNS, towards the cocaine sprayed nostril in one case and the saline sprayed nostril in the other. The results are summarized in Table III. The relationship between the pain score and the DNS showed no statistical difference between the cocaine and the saline sprayed nostrils (*Z* = 0.8219, *p* = 0.4111).

The 'ease of procedure' score was given by the examining doctor (VS) prior to knowing which nostril was sprayed with the cocaine. A 0-2 score was obtained in 53 (88.3 per cent) nostrils sprayed with the cocaine, and 41 (68.3 per cent) nostrils sprayed with the saline. Taking into account the greater incidence of DNS towards the saline sprayed nostrils the results are more comparable. The results are summarized in Table IV.

Discussion

The study was undertaken in view of a number of factors. Firstly, a significant number of patients in routine ENT clinics and almost all patients in specialist dysphagia (Singh *et al.*, 1995), voice and snoring clinics undergo FTE. Secondly, cocaine is a controlled drug with an abuse potential and possible cardiovascular side effects. Moreover, patients complain of a bitter taste and altered sensation in the throat for several minutes after intranasal cocaine. Finally, the consultation time for each patient undergoing FTE can be reduced by up to 10 minutes if no intranasal agent is used.

TABLE IV
EASE OF PROCEDURE SCORES

Score	Cocaine side 60 nostrils	Saline side 60 nostrils
0-2	53 (88.3%)	41 (68.3%)
3-5	7 (11.7%)	19 (31.7%)

No topical intranasal agent was used in over 400 patients who underwent FTE in our dysphagia clinic. This is important as an altered sensation in the nasopharynx and oropharynx may interfere with the swallow and render the assessment inaccurate. When no intranasal agent was used, and in narrow nostrils, pressing the nasendoscope against the inferior turbinate facilitated the introduction with minimal discomfort to the patient, whereas contact with the septum, particularly in the postero-inferior part, caused noticeable discomfort or even pain. Both areas are supplied by branches of the pterygo-palatine ganglion. The cause of the discomfort or pain may be that the septum is rigid whereas the mucosa overlying the inferior turbinate can be compressed.

In our study the pain and gag scores in nostrils sprayed with the cocaine and saline showed no statistical difference, thus showing that in most cases requiring FTE no topical intranasal agent is required.

A DNS towards the nostril being examined is an important contributing factor for pain. Although in the presence of a moderate or marked DNS, only 33.3 per cent and 37 per cent of patients sprayed with the cocaine and saline respectively gave a pain score of 3–5, this was nevertheless the major contributing factor in 15 out of 19 (79 per cent) nostrils with this pain score. In patients with a moderate or marked DNS or nasal congestion due to other causes, cocaine, or topical sprays with a combination of a local anaesthetic and a vasoconstrictor can be used. For example, Lennox *et al.* (1996) recommend co-phenylcaine (lignocaine and phenylephrine), while Kasemsuwan and Griffiths (1996) recommend four per cent lignocaine and 1:1000 adrenaline.

Conclusion

We would therefore suggest that a brief assessment is made prior to FTE. The patient can then be placed in one of two groups:

- (1) No intranasal agent required.
- (2) Cocaine or other topical combination spray required. The assessment will depend on the degree of DNS, on the amount of nasal congestion, and on whether the principal area to be examined is the nose or pharynx and larynx.

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