

Participants' Reactions to Nasal Mucus Collection

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Participants' Reactions to Nasal Mucus Collection

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1 Objectives

There are no tests for the qualitative or quantitative aspects of nasal mucus in routine use. Unlike the routine analysis of many other body fluids, such as blood or urine, nasal mucus is an unknown. CSF, pancreatic secretions, and even ovarian follicle fluid are easier to collect and analyse.

2 Method

Healthy volunteers had nasal mucus passively collected from the nose for 15 minutes without local anaesthesia (Figure 1). On one side an inert plastic splint was used, on the other simple cotton wool. The cotton wool was a 40 mm length of twisted cotton wool, the splint was 43 mm long. Here we report the participant experience, and speculate on what may be an acceptable level of discomfort for the yield of mucus. The yield on each side is reported in a sister paper.

3 Figure 1



Participant During Mucus Collection

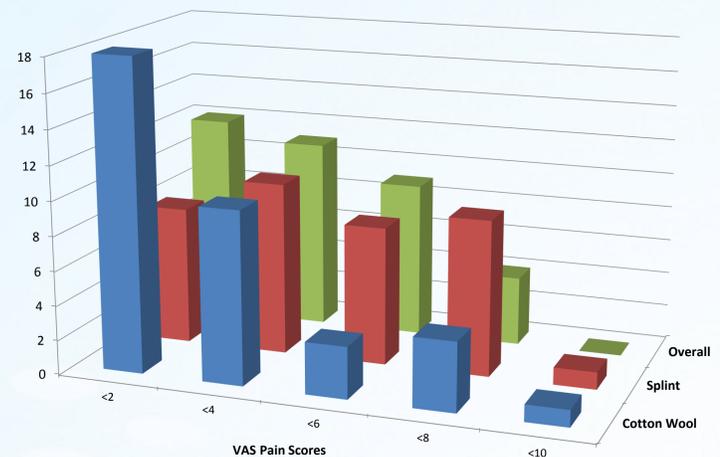
4 Results

36 subjects have been tested, of whom all 36 tolerated the cotton wool, but only 32 tolerated the plastic splint. Adverse events for the splints included one refusal, two spontaneous expulsions, and one posterior displacement. In a binary questionnaire, pain was reported with 21/32 splints, and 12/36 cotton wool insertions.

Average pain scores on a VAS were 4.13 for splints (SD 2.56, range 0.4 – 7.2), and 2.6 for cotton wool (SD 2.1, range 0.0 – 8.3). The distribution of VAS scores is shown in Figure 2.

Figure 2

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Nasal Sampling Acceptability VAS Scores - (No Local An.)

6 Discussion

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The data presented in Figure 2 clearly shows the cotton wool was less painful, but it is interesting that even in this group approximately 20% of subjects found the experience significantly painful. This may be a limiting factor in routine collection of mucus, just as the phenomenon of needle phobia is a limiting factor in blood collection. The prevalence of needle phobia has been estimated at 2% in a travellers' health clinic and 10% in the general population (refs 1, 2)

Transient feelings of faintness were recorded by 2/36 subjects. In a free text section ("Use three words"), the commonest terms used were uncomfortable (18), unpleasant (5), unusual (5), painful (4), and interesting (4). The word 'gross' was used twice, and the word 'odd' only once.

Related studies have shown that the use of local anaesthesia spray has no net benefit in the context of OPD nasendoscopy (Refs 3, 4) when one measures pain, bad taste, and overall discomfort. We therefore decided to avoid the use of these agents, which could affect the yield and composition of mucus. We will continue to refine the technique of native, undiluted nasal mucus collection in the hope that we can collect this on a routine basis.

7 Conclusions

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Using inert plastic splints to collect native nasal mucus is unlikely to be practical without further design work, but cotton wool is broadly acceptable. Normal individuals can tolerate collection without anaesthesia, but most will find it moderately unpleasant. A group of about 20% will still find collection with cotton wool difficult.

References

1 Nir Y, Paz A, Sabo E, Potasman I. Fear of injections in young adults: prevalence and associations. *Am J Trop Med Hyg* 2003;68:341-4.

2 Hamilton JG. Needle phobia: a neglected diagnosis. *J Fam Pract* 1995;41:169-75.