Its Complicated: Unexpected Findings and Expected Outcomes for Microsuction

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Introduction

The Department of Health (DoH) (2009) identifies key components that constitute informed consent.[1] These are understanding of the benefits of an intervention (and their probability), the risks (both in terms of impact and probability) and the alternatives.
The British Society of Audiology (BSA) (2021) offers guidance for wax removal in routine ears and outlines where removal is non-routine.[2] It lists possible complications from removal, (see Table 1) though other rare serious complications are reported [3 4 5]

- Damage to skin of the ear canal
- Damage to the eardrum
- Infection of the ear canal or other structures following removal
- Temporary reduction in hearing
- Permanent reduction in hearing
- Temporary dizziness and (rarely) possible sickness or fainting
- Tinnitus or temporary aggravation of existing tinnitus
- Temporary irritation to the throat and coughing

Table 1 – Possible complications of wax removal, BSA 2023

The BSA guidance proposes a series of contraindications to the procedure, (summarised in Table 2), where the risk of complication is higher, where is it out of the scope of audiology or where consent is not readily obtained. In addition, further cautions where known risks may have greater impact (eg abrasion, with anti-coagulation therapy)

- Presence of a foreign body
- Current, recent or recurrent ear infections
- Abrasions or inflammation of the ear canal
- Active eczema or psoriasis
- Perforation or recently healed perforation
- Communicable skin, blood or respiratory disorder
- Abnormal bony or fleshy growth
- Otaglia
- Troublesome tinnitus
- Only one hearing ear
- Confusion, agitation or lack of co-operation

Table 2 – Contraindications to wax removal, BSA 2023

The guidance advises cessation of procedure where evidence of a non-routine and previously unknown finding is uncovered. But how common are these findings? And how likely is removal to be successful? And what are complication rates? Evidence is limited and often references syringing. Once source suggested a successful clearance rate of 91% for microsuction;[6] elsewhere it is reported as 71% for syringing.[7 8] Serious complication rates have been reported as <0.1% but non-significant complications can be as much as 38%, but again this is based on syringing.[9] We previously described a minor complication rate of 4.8% but a success rate of only 69% with magnified lenses (similar to loupes) and instrumented removal. [10]

Method:

Microsuction was introduced into the Royal Berkshire Hospital (RBFT) in 2020. Local criteria for candidacy is where wax might influence diagnostics or given rise to a symptom. All complications at removal or follow up are documented, as part of local audit/service evaluation. We reviewed all data, to determine success rates vs unexpected and previously undocumented anomalies (as defined by BSA criteria for cessation of the procedure) or complication rates, where non-significant is defined as not requiring further intervention; and significant is defined as further medical intervention is required

Results

Data reviewed from 607 patients (1010 ears). Failure of removal occurred in 7.4% cases (8.9% of ears); complete or partial removal of wax was sufficient that 5.6% cases were able to progress to the next stage in their pathway.

No significant complications were reported consistent with a rate of ≤0.1%. Minor complication rate was 7.4% with types and rates of complication shown in Fig 1. No other type of complication was reported

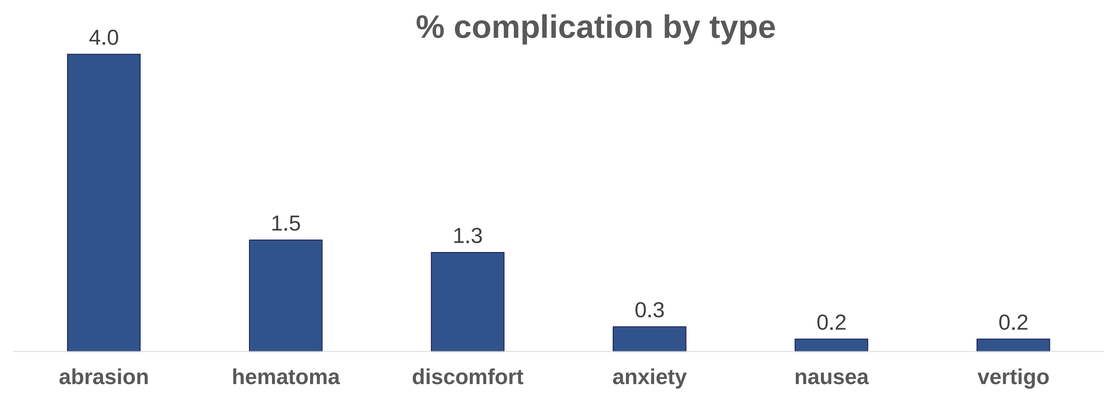

Figure 1 – complication rate by type

Unexpected (pre-existing) findings were found in 9.6% patients (5.7% ears); rates are illustrated by type in Fig 2

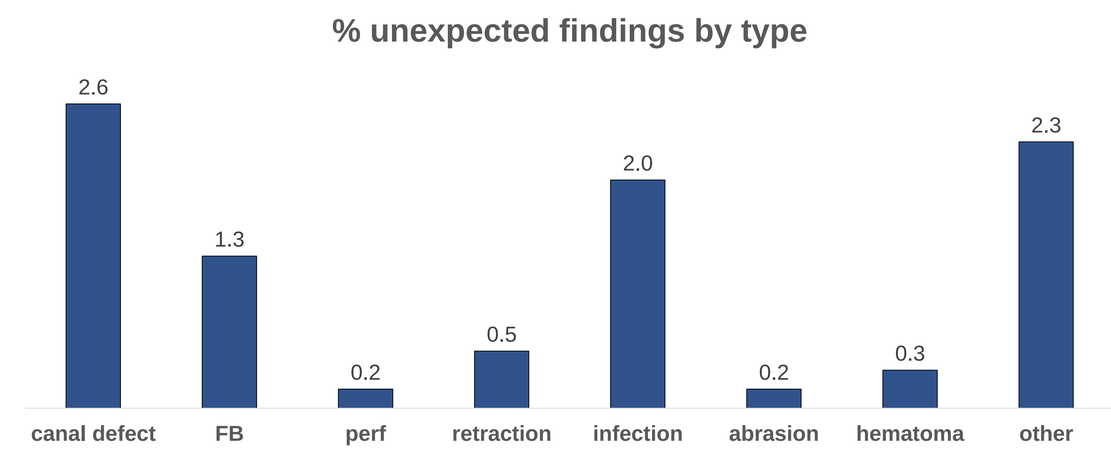

Figure 2 – rates of unexpected findings by type

Discussion

Successful removal rates are similar for available date reported for microsuction, as are complication rates. Serious complication are rare. Of interest is the frequency of unexpected findings (approaching 1 in 10), such as canal defect and foreign body (FB) (below). Ideally these data should be available to patients to inform consent. These detection rates were obtained with microscopy. Detection rates with other methods, such as loupes are unclear. With the move of wax removal out of primary care, in to the hands of independent, non-medical providers in the community, who may not be using microscopy, these data raise questions about the governance structures in place and about the routes and rates of referral back into medical services, and how patients can ensure these

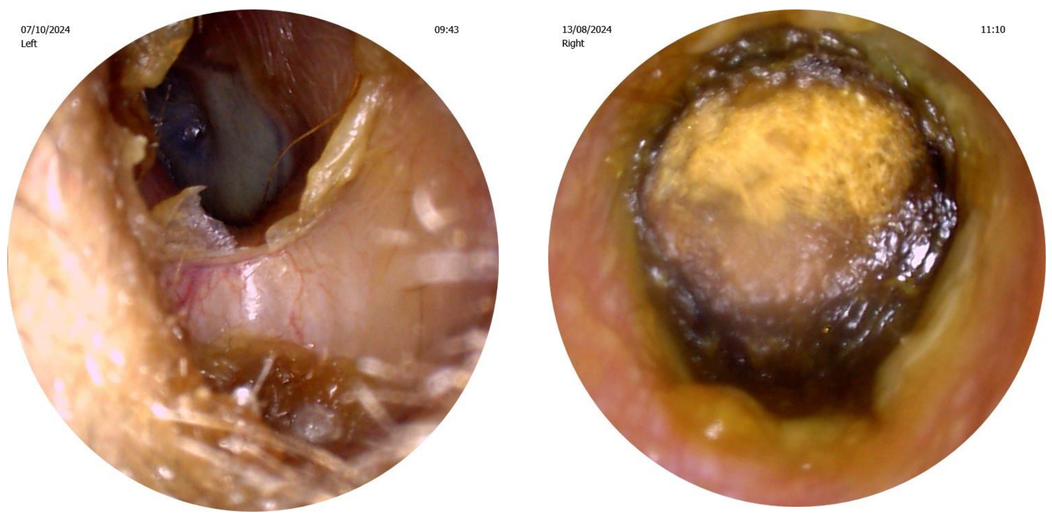

Figure 3 – Canal defect (left); foreign body (right)

Limitations

Service evaluation data is dependent on patient self reported here and underreporting cannot be excluded. Further work, with formalised questionnaire follow-up is being considered

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