



The comparative anatomy of the ovine middle ear: a model for otological surgical training

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Introduction

- Practicing temporal bone dissection improves surgical skill
- Human temporal bones are scarce
- Stapedectomy is seldom taught on temporal bone courses
- Performing stapes surgery on patients for the first time is risky

Introduction

- Older studies show trainees have more complications¹
 - Later research shows that this is no longer the case^{2;3}
 - Good result when case load and training is adequate
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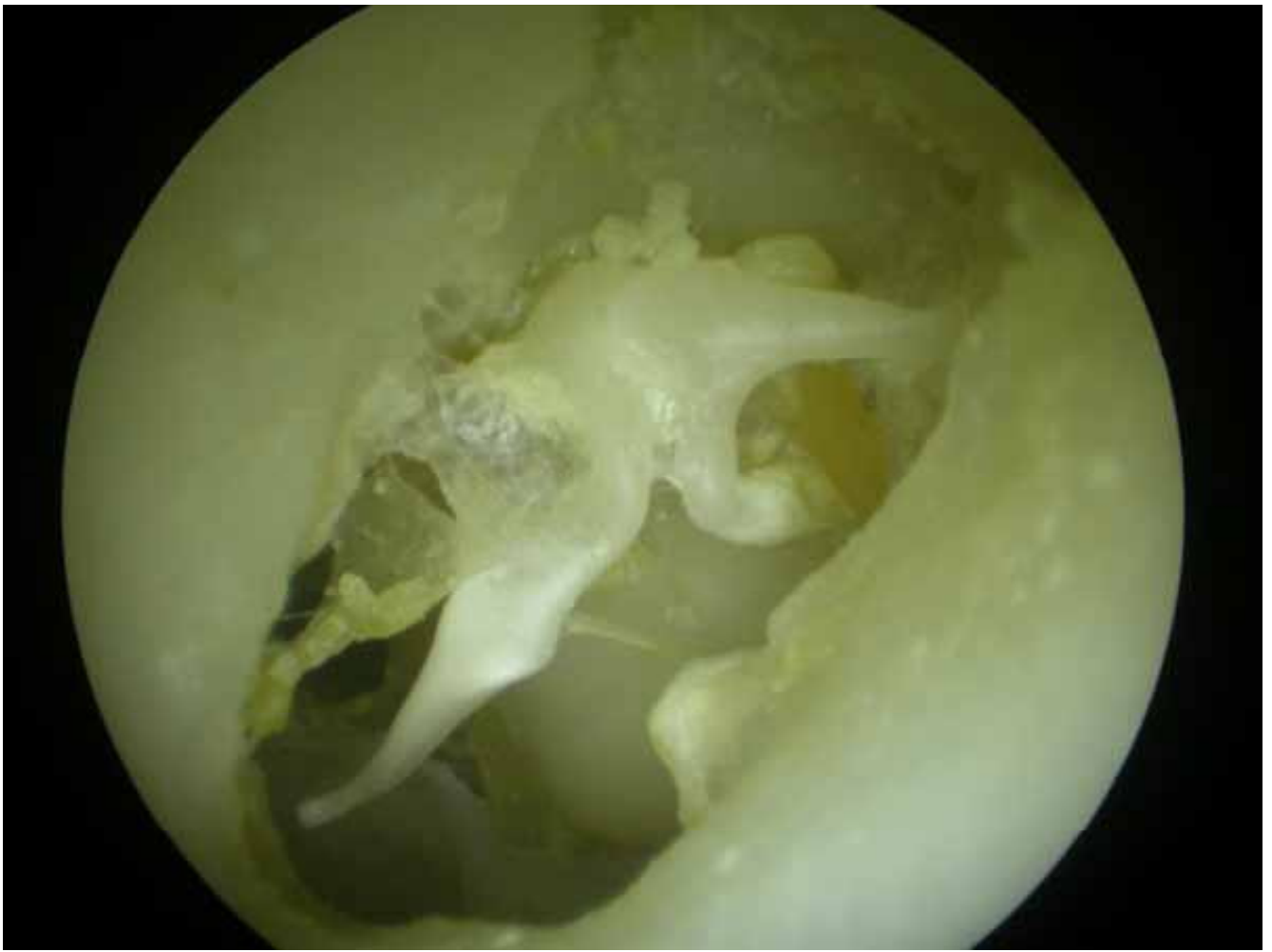
1: Engel TL, Schindler RA. Stapedectomy in residency training. *Laryngoscope*. 1984 Jun;94(6):768-71.

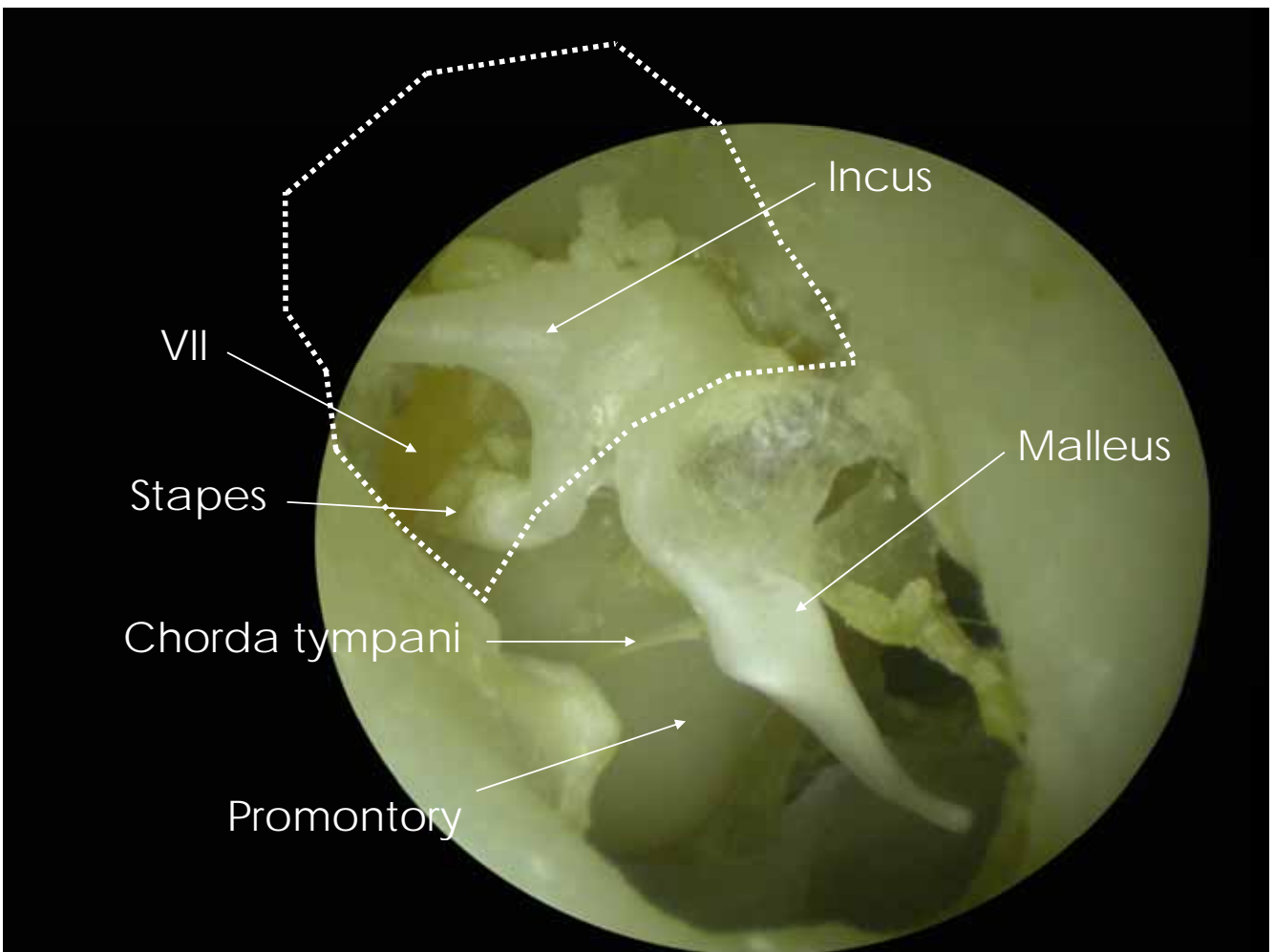
2: Freitas VA, Becker CG, Guimarães RE, Crosara PF, Morais GA, Moura M. Surgical treatment of otosclerosis in medical residency training. *Rev Bras Otorrinolaringol (Engl Ed)*. 2006 Nov-Dec;72(6):727-30. PMID: 17308824

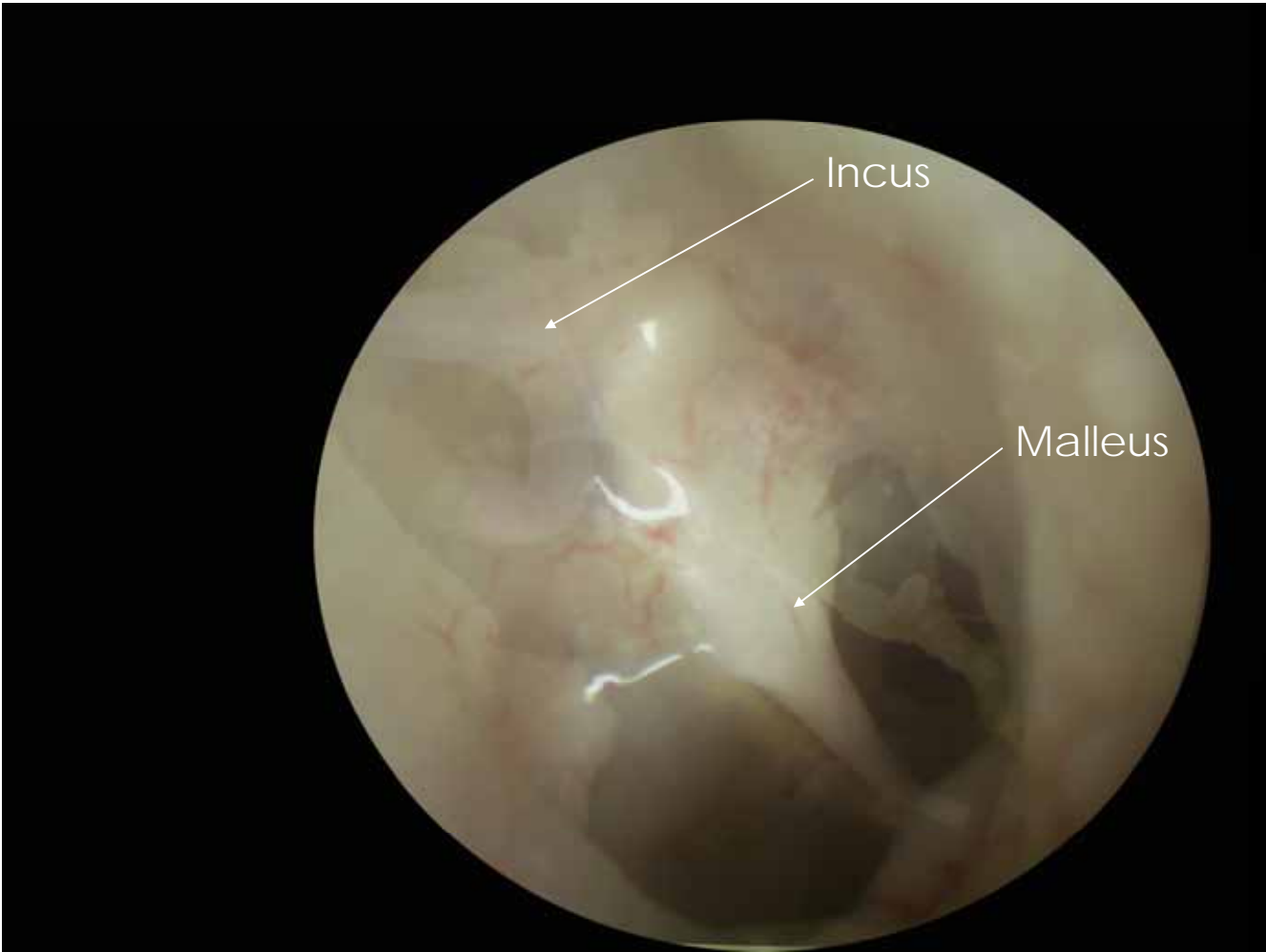
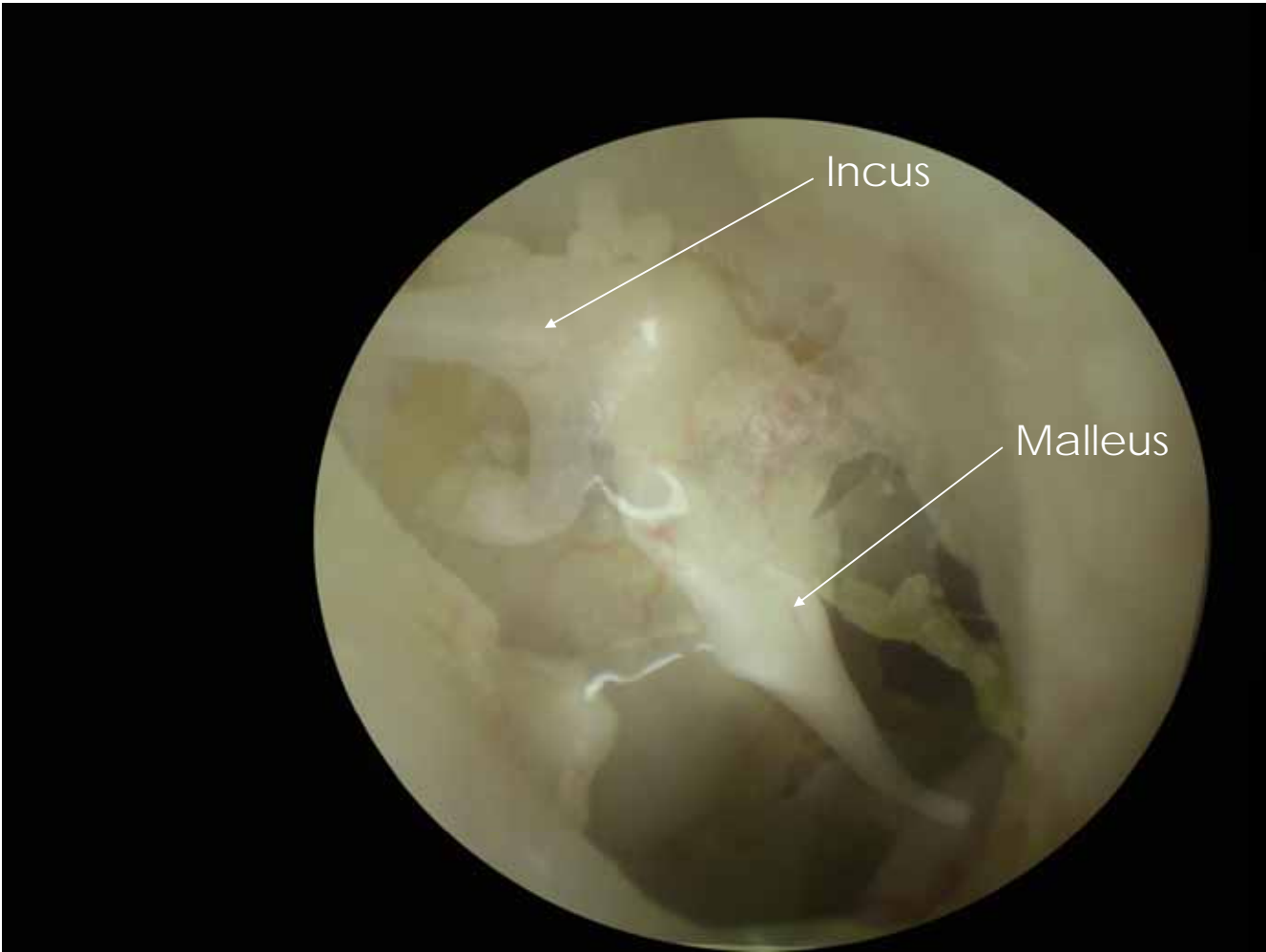
3: Shapira A, Ophir D, Marshak G. Success of stapedectomy performed by residents. *Am J Otolaryngol*. 1985 Sep-Oct;6(5):388-91. PMID: 4073379 [PubMed - indexed for MEDLINE]

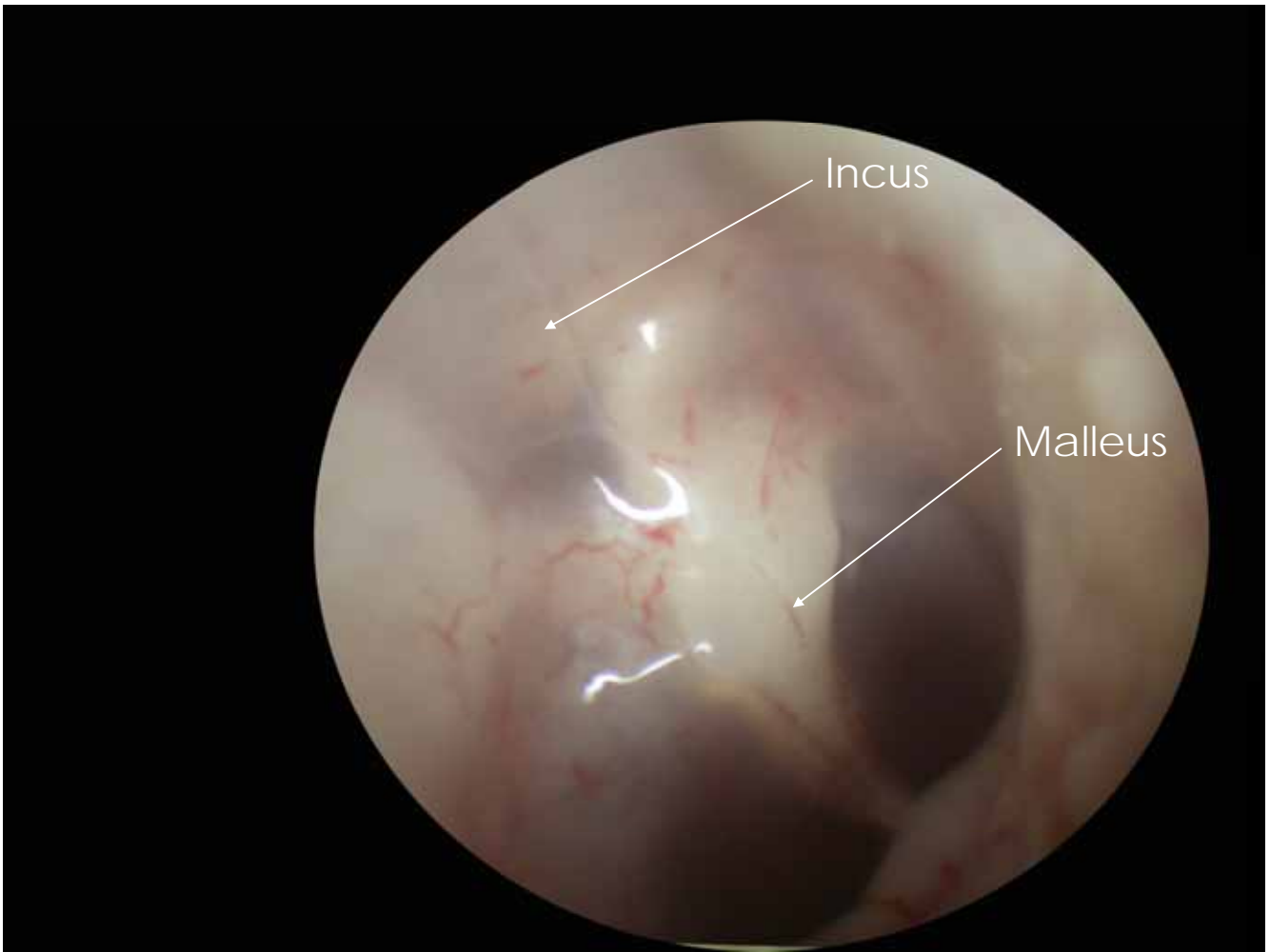
Introduction

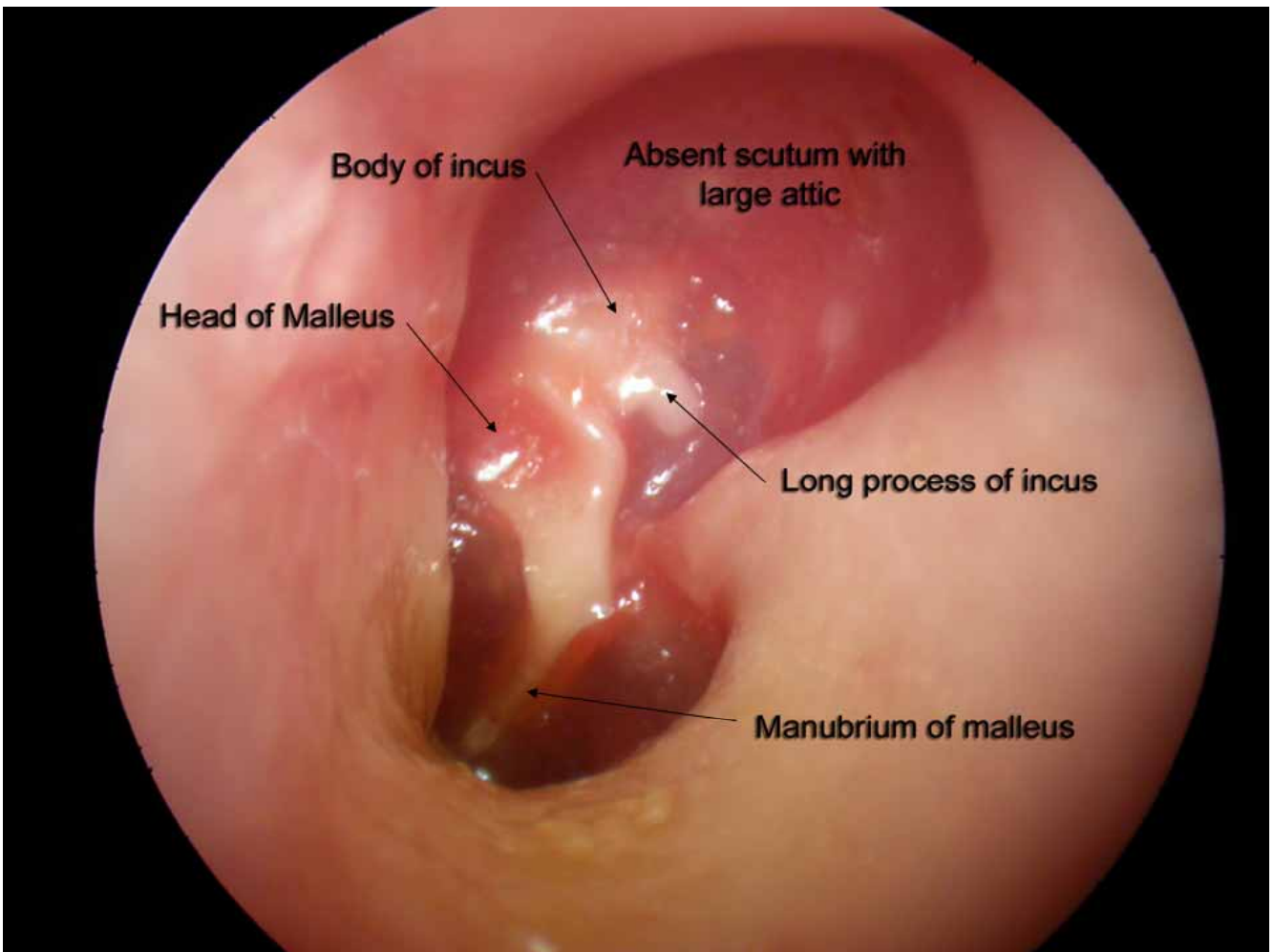
- A model for stapes surgery is needed
- Must be easily available
- Must be anatomically similar

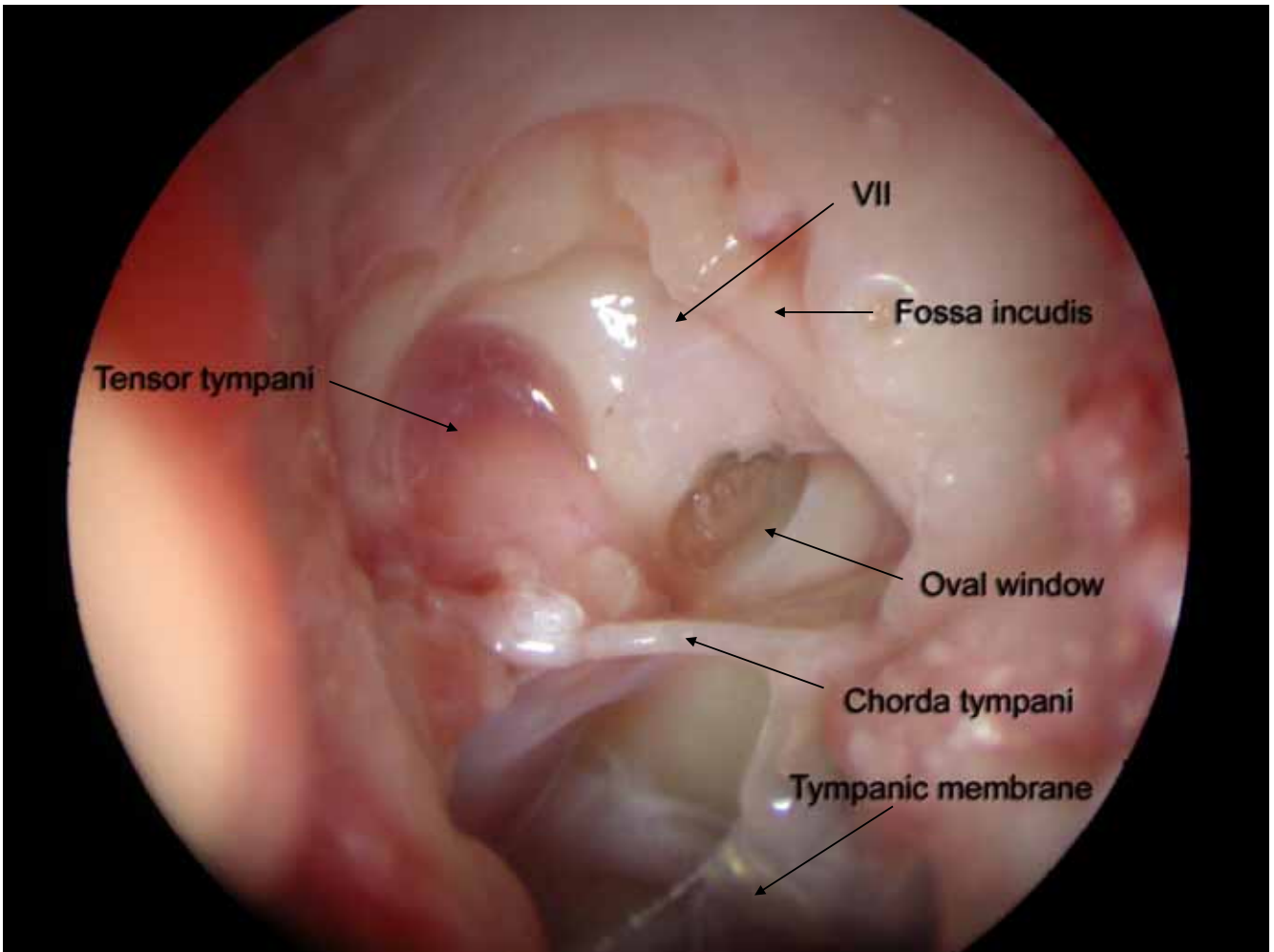
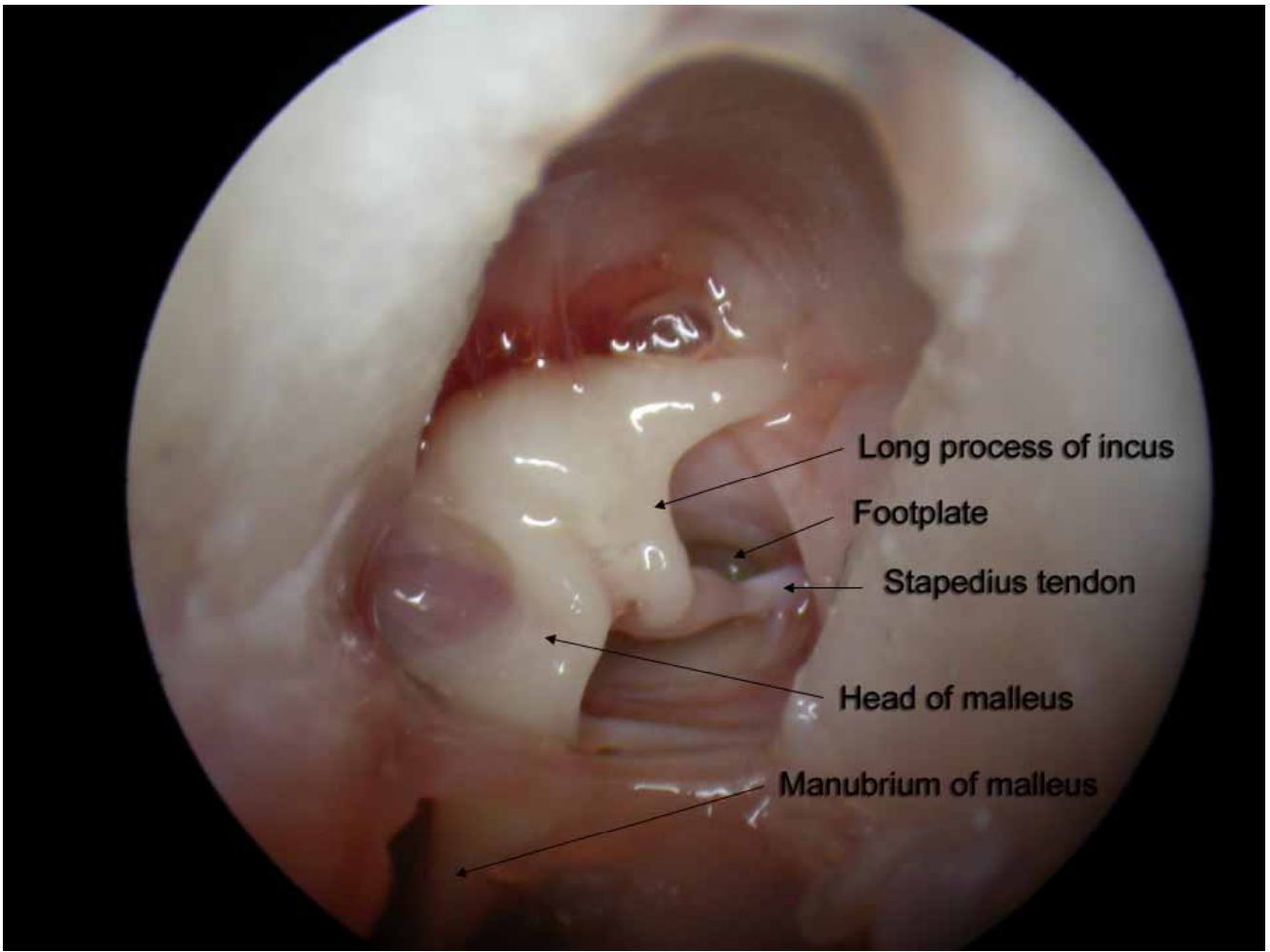


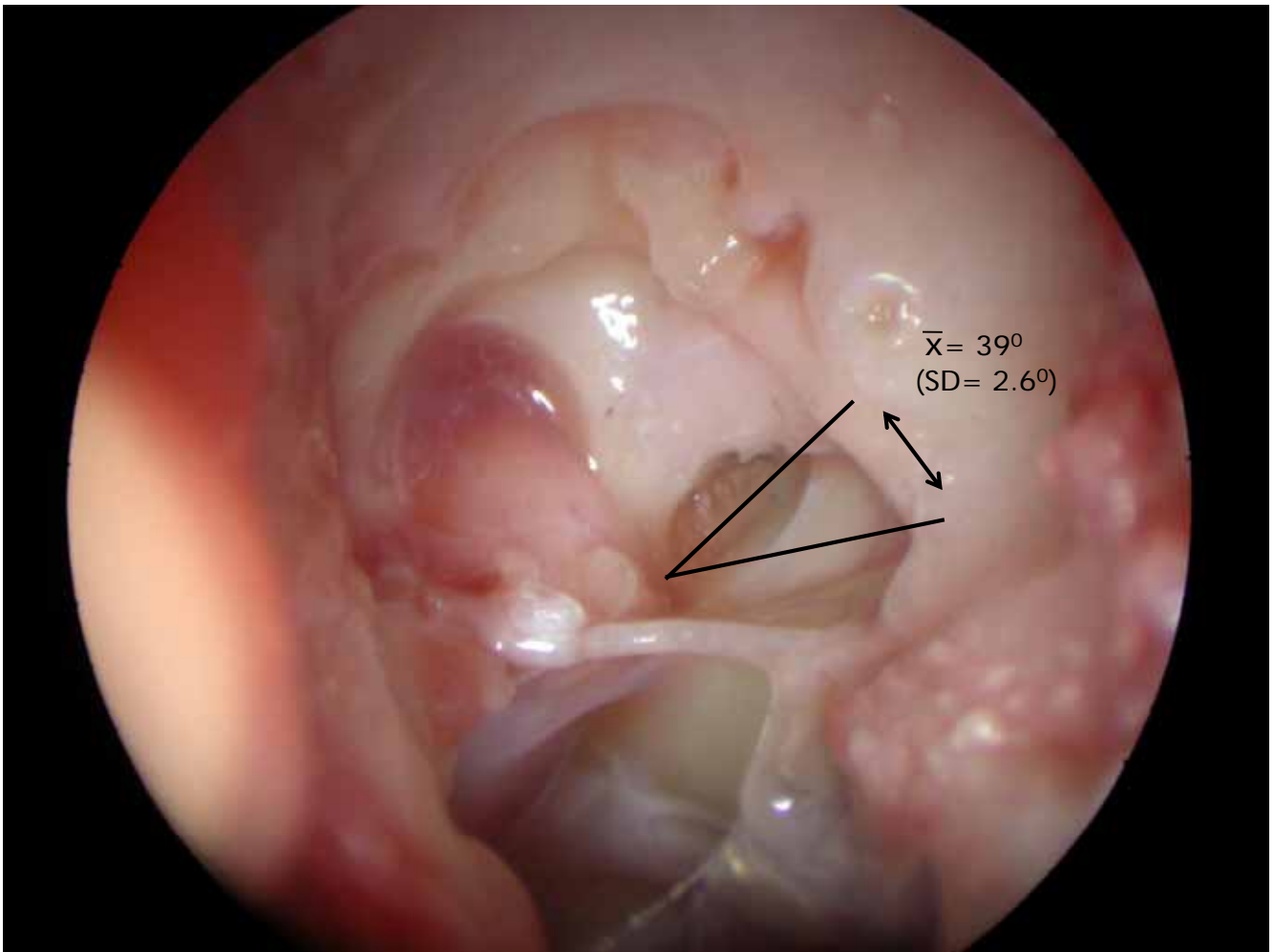
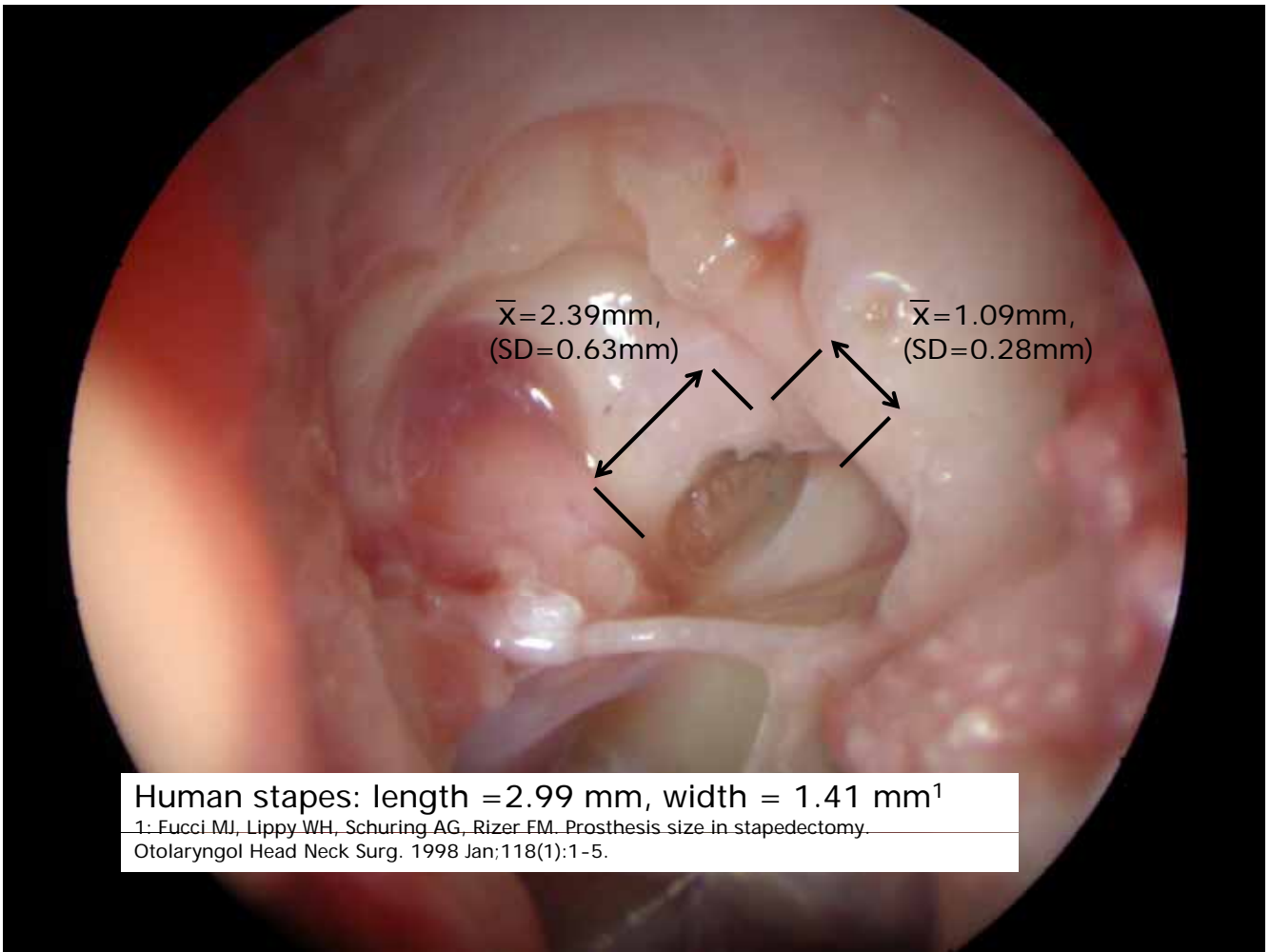


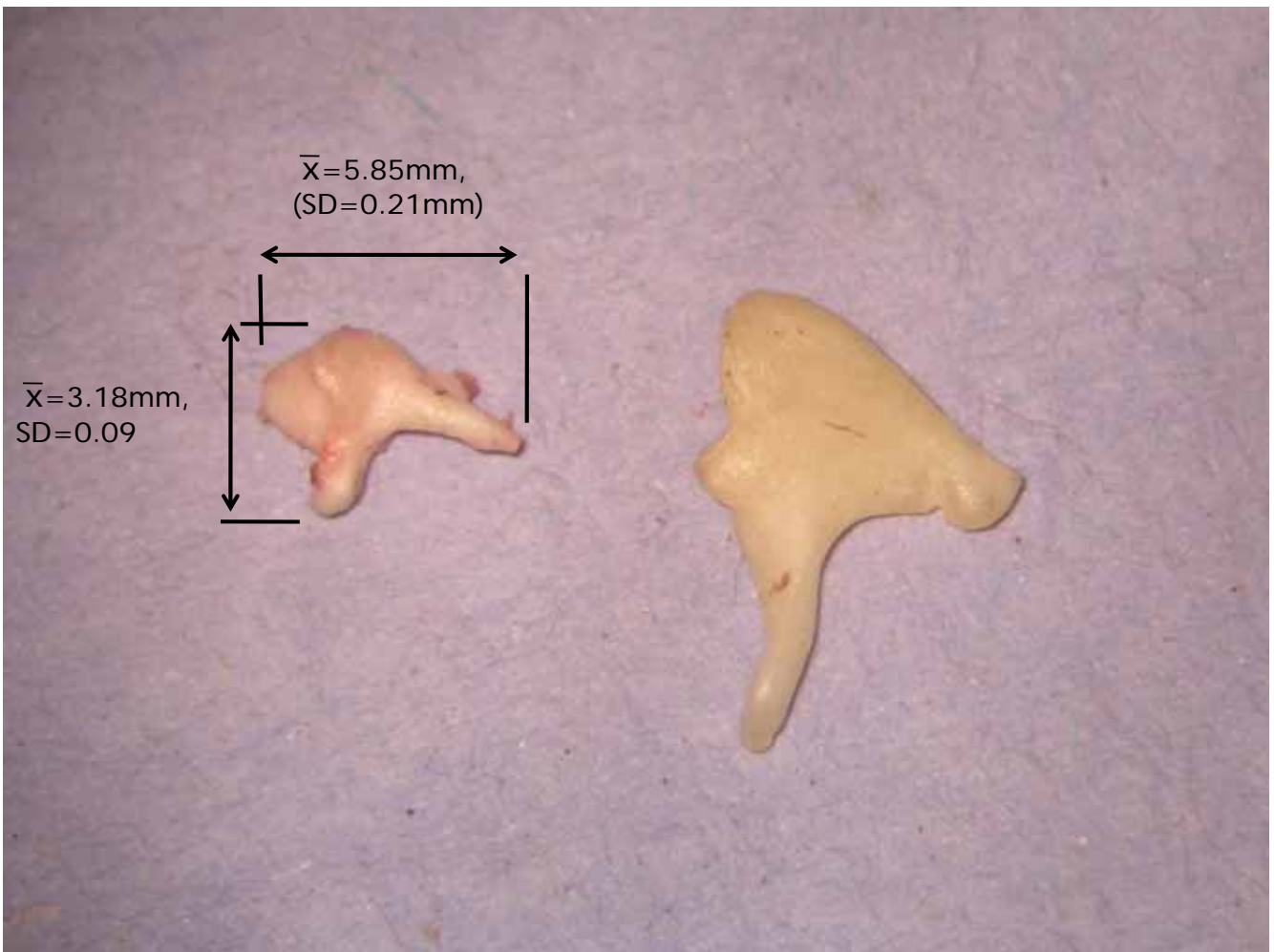
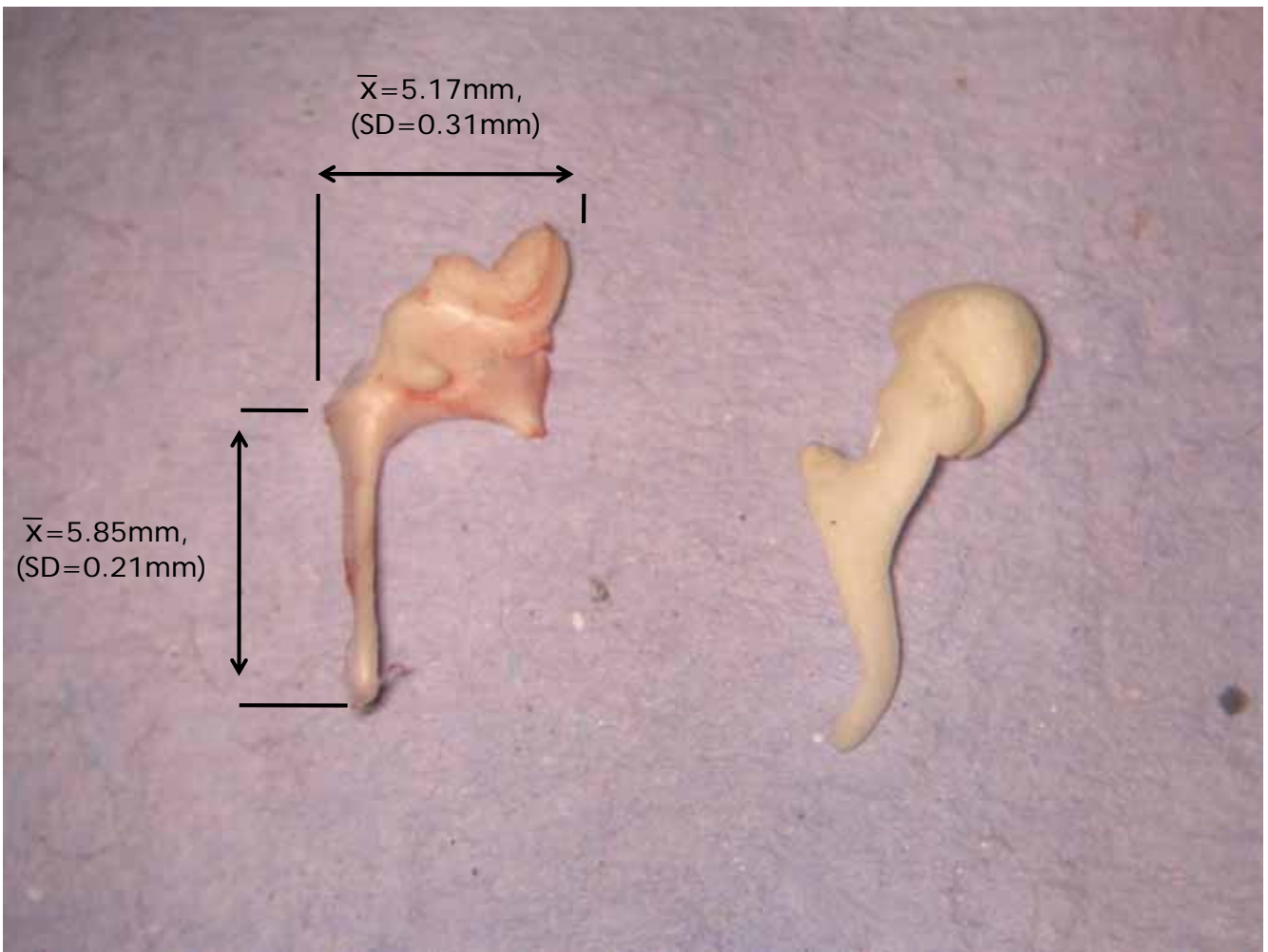


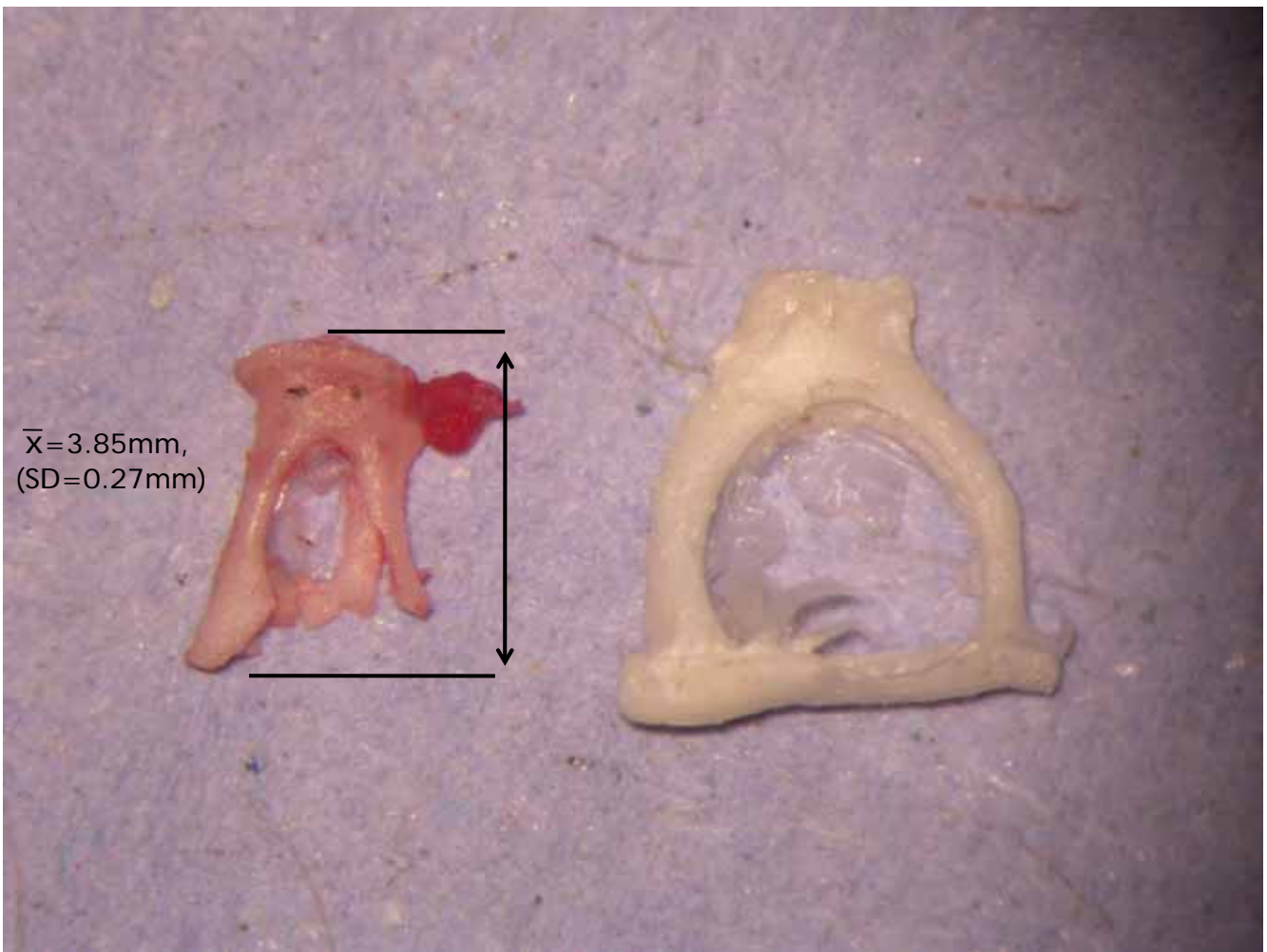




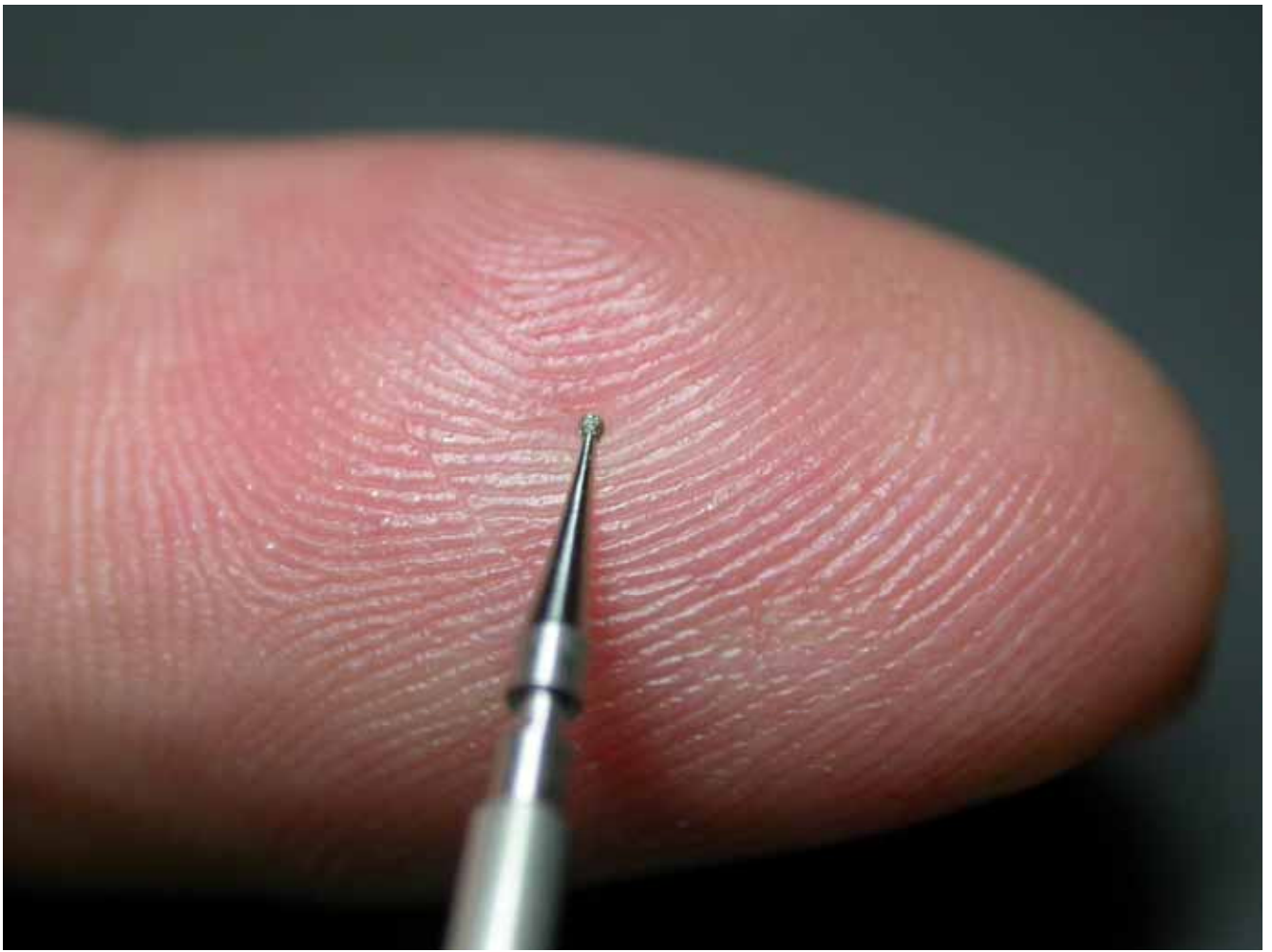


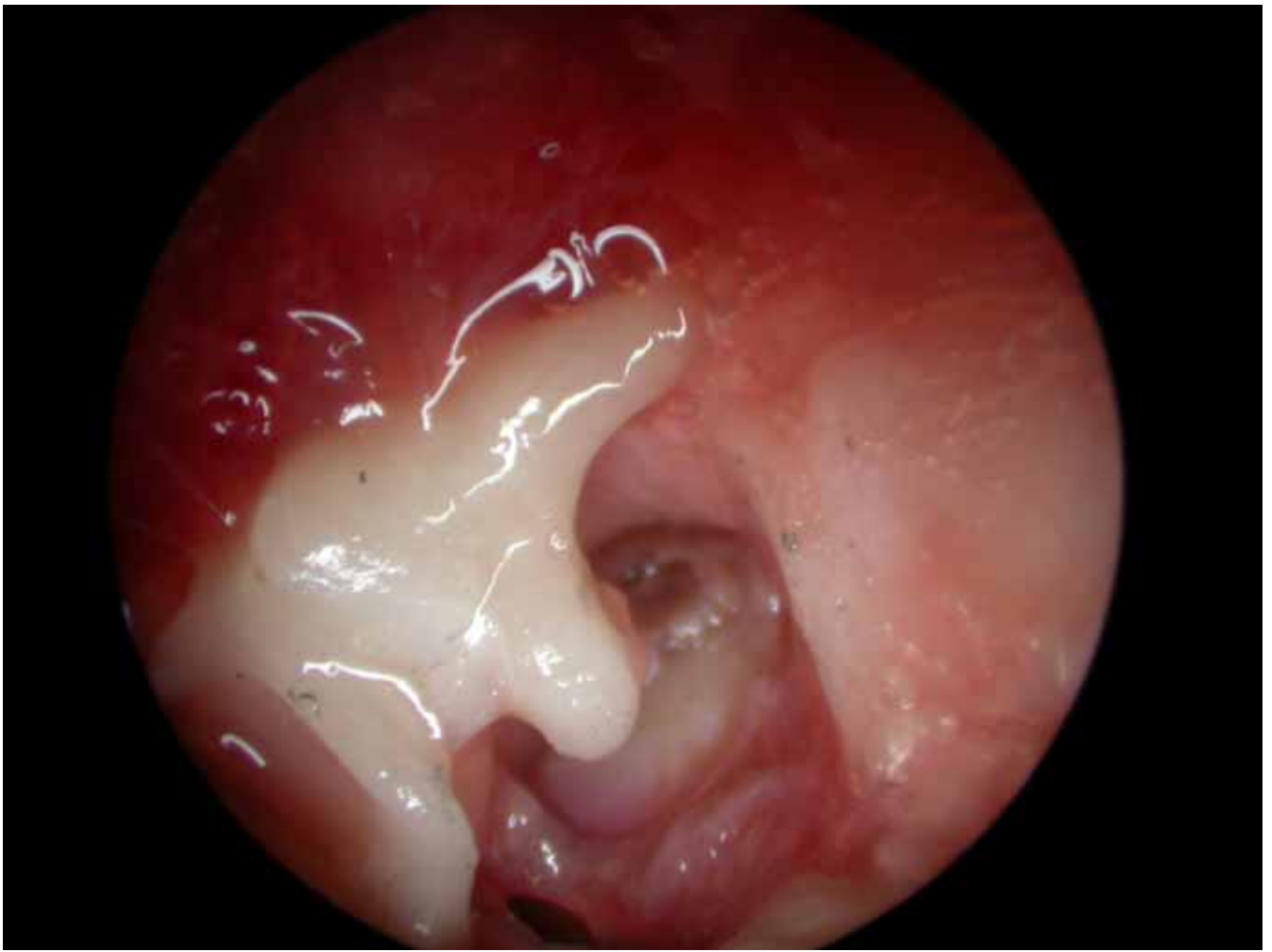










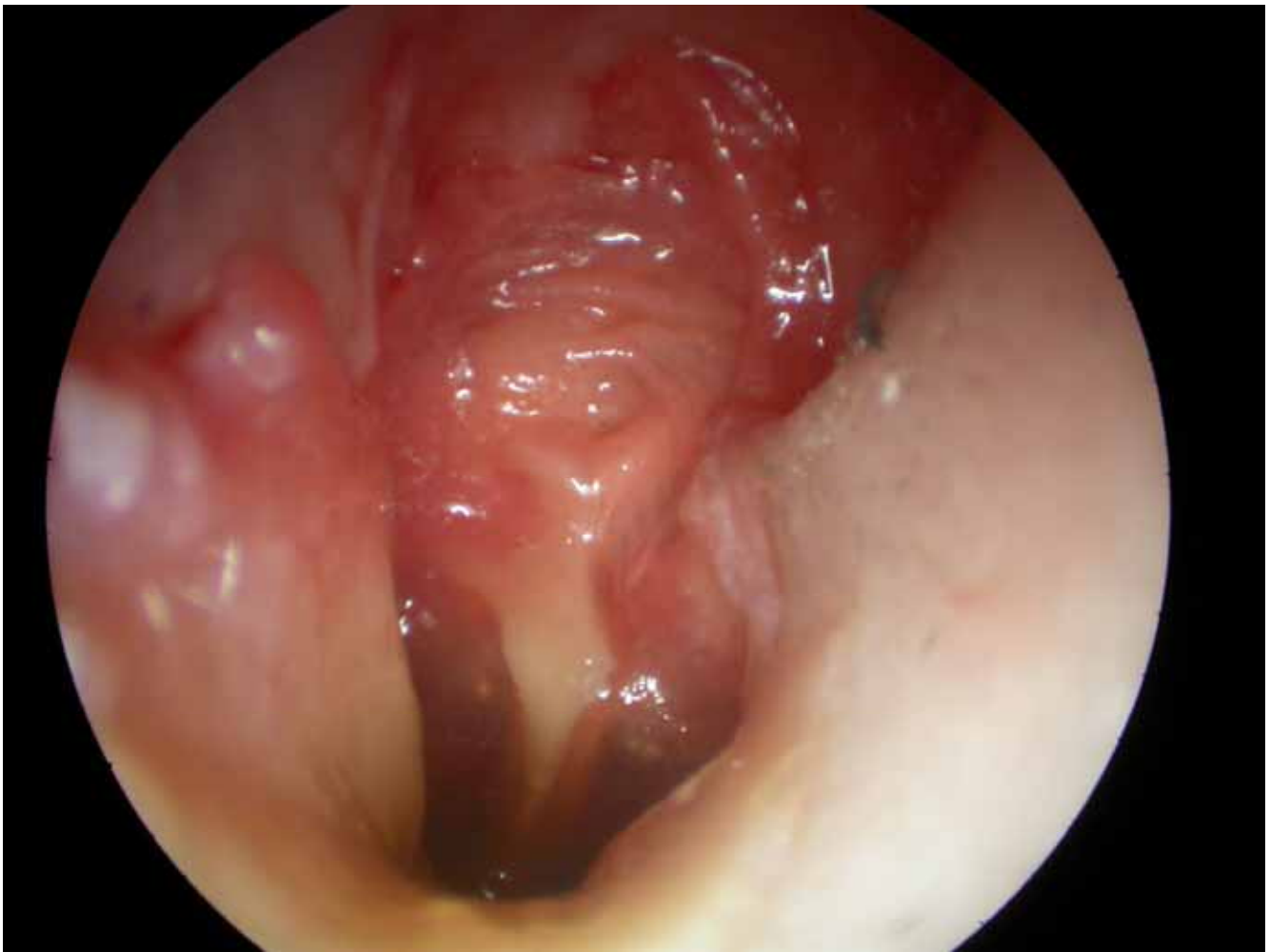






Stapedectomy

- 20 stapedotomies drilled
- Prostheses inserted and removed by each of the three investigators for each stapedotomy
(60 insertions of prostheses)



Summary

- The ovine middle ear approximates the human middle ear in certain key respects
- Stapedectomy can be easily performed as a training exercise
- Further study of mastoid required
- May be a useful model for ventilation tube insertion, myringoplasty or ossiculoplasty

