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## Hearing reconstruction: How I do it (1) (V617)

**ID: 617.1**

### Use of Hydroxyapatite (HA) Cement for Ossicular Reconstruction

Presenting Author: **Joel Goebel**

Joel Goebel

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*Learning Objectives:* 1. Understand the indications for use of HA cement for ossicular reconstruction. 2. Appreciate the surgical tips for successful application of HA cement to the ossicular chain.

*Panel Discussion:* Use of Hydroxyapatite (HA) Bone Cement for Ossicular Reconstruction

*Abstract:* Reconstruction of the ossicular chain in chronic ear disease and cholesteatoma depends on many factors including ossicular chain remnant, state of middle ear aeration and Eustachian tube function and ability to eradicate middle ear mucosal disease. In select cases, use of hydroxyapatite (HA) bone cement to re-establish ossicular chain continuity is a viable method of reconstruction. In this panel, various methods of reconstruction will be addressed and the role of HA cement will be discussed including video demonstration of practical surgical tips for application of HA cement to the ossicular chain remnant for reconstruction.

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## Hearing reconstruction: How I do it (1) (V617)

**ID: 617.2**

### Hydroxyapatite cement for ossiculoplasty

Presenting Author: **Stefan Delrue**

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*Learning Objectives:* To overcome the impedance mismatch between the tympanic membrane and cochlear fluids, the normal ossicular chain functions as a lever system.

Several surgical techniques are available to restore its continuity in case of interruption. Biocements are one of the latest innovations and allow maintaining the normal tri-ossicular structure, which results in a more physiologic energy transfer. Hydroxyapatite is an inorganic mineral and natural component of the human bone. It can be easily prepared by mixing a powder and liquid component, which subsequently forms a paste that slowly hardens. Compared to ionomeric cement, hydroxyapatite does not provoke any inflammatory reaction when in contact with the soft tissues of the middle ear. This workshop shows the application of hydroxyapatite cement in bridging incudostapedial discontinuity as well as other ossicular interruptions in a faster and easier way. Moreover hydroxyapatite cement can be used to stabilize ossicular

protheses. Based on retrospective case series the functional results with cement are initially similar to standard ossiculoplasty techniques but better over time.

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## Keratinocyte in health and disease (K623)

**ID: 623.1**

### The keratinocyte in health and disease

Presenting Author: **Irene Leigh**

Irene Leigh

*University of Dundee*

*Learning Objectives:* To understand the processes involved differentiation of normal stratified squamous epithelia To understand the changes in keratinocyte hyperproliferation, dysplasia and structural genodermatoses.

The biology of the keratinocyte has been greatly enlightened by the ability to culture keratinocytes from the epidermis and mucosal stratified squamous epithelia in the laboratory, developed in 1975 by the use of a feeder layer and added growth factors. Subsequently the processes regulating keratinocyte stratification and differentiation have been characterised, in particular the changes in keratin expression, as a cell migrates from the stem cell compartment within the basal layer into suprabasal layers, and the formation of the cornified envelope. Normal site specific differentiation is heavily dependent on both permissive and directive signals from the underlying dermis. During hyperplasia, as seen in the skin during psoriasis and wound healing, the keratinocyte undergoes an alternative pathway of differentiation with alterations in keratin expression particularly keratins 6 and 16 and additional effects on terminal differentiation. In dysplasia and malignancy, markers of keratinocyte differentiation tend to remain but additional expression of simple epithelial markers is associated with tumour invasion. Many genetically inherited skin diseases and associated syndromes, such as sensorineural deafness, are associated with point mutations in structural proteins including keratins, and junctional complexes. Patients with atopic eczema has been found the have a very rate of mutations in filaggrin: a filament aggregating protein critical for formation of a normal stratum corneum and these mutations result in significant impairment of barrier function, a hallmark of atopic eczema. Understanding keratinocyte differentiation and alterations in disease can give insights into the pathology of other stratified squamous epithelia including cholesteatoma.

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## The role of persistent infection in the pathogenesis of cholesteatoma (K625)

**ID: 625.1**

### The Role of Persistent Infection in the Pathogenesis of Cholesteatoma

Presenting Author: **Richard Chole**