

ossicular defect (as expected) and an OCC extending from the stapedial tendon to the promontory. We removed the entire OCC and reconstructed the ossicular chain with tragal cartilage. The postoperative air–bone gap was 9.4 dB.

*Conclusions:* OCC often presents in a way very similar to COA, with conductive hearing loss and an intact tympanic membrane. However, a history of progressive hearing loss and the presence of a subtle soft tissue density on TBCT are suspicious of OCC, rather than COA, in which the hearing loss is of a congenital nature. In this patient, the cholesteatoma was located in the sinus tympani around the stapedial tendon and was difficult to assess with an operating microscope. In lesions of the sinus tympani and facial recess, endoscope-assisted microsurgery can facilitate cholesteatoma removal and reduce the risk of recurrence.

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### ID: IP075

#### **Interaction between keratinocytes and fibroblasts induces osteoclastogenesis: a mechanism underlying cholesteatoma-induced bone destruction**

Presenting Author: **Yoriko Iwamoto**

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#### *Learning Objectives:*

Bone is a highly dynamic organ, which is maintained by a balance between bone-resorbing osteoclasts and bone-forming osteoblasts. Increased osteoclast activity shifts the balance toward bone resorption, cause bone destructive diseases such as rheumatoid arthritis and periodontitis. Ectopic induction of receptor activator of nuclear factor kappa-B ligand (RANKL), a regulator of osteoclast differentiation, leads abnormal osteoclastogenesis. For example, in rheumatoid arthritis, synoviocyte is known as a major source of RANKL.

Cholesteatoma is a non-neoplastic lesion arising in middle ear, which consists of hyperkeratinizing epithelial layer and fibrous connective tissue. Due to its bone destructive character, it can cause severe complications. However the mechanism of the bone destruction by cholesteatoma remains to be elucidated.

In this study, we established cholesteatoma-like mass composed of mouse ear pinna-derived keratinocytes and fibroblasts on the calvarial bone of mouse. Histological analysis revealed the experimental mass lesion induced osteoclastogenesis on the bone surface. In addition, we succeeded in establishing an in vitro coculture system of keratinocytes, fibroblasts and osteoclast precursors, and found that keratinocytes stimulate the induction of RANKL in fibroblasts, which leads to osteoclastogenesis.

Thus, this study demonstrates that interaction between keratinocytes and fibroblasts is involved in the differentiation of osteoclasts, which may provide the molecular basis of a new therapeutic strategy for cholesteatoma-induced bone destruction.

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### ID: IP076

#### **LION Surgery Broadcasts: Communal viewing benefits with perceived quality of transmission, surgery and discussion**

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*Learning Objectives:* To improve otological surgical knowledge & techniques.

The Live International Otolaryngology Network (LION) aims to promote high quality medical and continuous surgical education programmes, seeking to improve knowledge and skills of practicing otolaryngologists. LION's purpose is to achieve a worldwide permanent interactive network within ENT, promoting distant learning using videoconferencing technology. Theoretically internet webcasts provide a cost effective, environmentally friendly way for otolaryngologists to access CPD.

Preparations were made on the 12<sup>th</sup> May 2015 in order to maximise this opportunity in South Wales for ENT surgeons and allied health professionals. We organised a 'communal' viewing to promote open discussion between allied professionals in attendance and assess the educational experience by targeted questionnaires to give validity for CPD accreditation by RCSEdinburgh and ENTUK. 15 delegates attended (5 ENT consultants, 6 ENT trainees, 1 ENT SAS, 2 audiologists & 1 audiology student). 71% had watched a LION broadcast previously and all felt that the communal broadcast was better than viewing alone, that they would re-attend a communal LION broadcast in the future, and would recommend such to a colleague. Perceived broadcast transmission quality, surgical technique and discussion were generally good across both channels.

Communal viewing of the LION broadcast was well received by all delegates. The following improvements were suggested: wider advertisement, simultaneous screening of broadcast channel 1 and 2, and a second screen in each room for background information/ case studies. Although the numbers are small, feedback for individual surgeons and procedures will allow quality assurance and improvement for the next broadcast.

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#### **Climbing up the learning curve in totally endoscopic cholesteatoma surgery**

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