



XIV Årsmøde i  
Dansk Selskab for  
Otorhinolaryngologi,  
Hoved- & Halskirurgi



# Interacoustics

**oticon**  
PEOPLE FIRST

***bernafon*** 

***Your hearing • Our passion***



**s**ignia

Life sounds brilliant.



	Side
Velkommen til DSOHH 2017	6
Program	7
Praktisk infomation	12
Socialt program	14
Udstillere	15
ABSTRACTS	
Inviterede foredrag	18
Frie foredrag	
Otologi og Audiologi	34
Rhinologi	44
Laryngologi	47
Hoved-Hals	51
Posteroversigt	70
Posterabstracts	73

## Kære DSOHH medlem

Vi er glade for at kunne præsentere årets program for det 14. DSOHH årsmøde. Vi har i år fokus på Næse bihule sygdomme, og vi er glade for at Professor Philippe Gervaert, Gent, Belgien vil bidrage med foredraget: Endotypes of CRSwNP and novel treatment strategies. Samt at Overlæge Thomas Houmann Petersen, pædiatrisk afdeling, Kolding vil fortælle om Rhinokonjunctivitis hos børn: Behandlingsstrategi - Er immunterapi effektiv og sikker? Efterfulgt af yderligere Næse-bihulerelaterede indlæg fra DSOHH medlemmer.

Vi ser frem til et godt møde med parallelle sessioner, og mulighed for faglige diskussioner på kryds og tværs. Mange engagerede kolleger har igen indsendt abstrakts, der vedrører de mange forskellige aspekter af vores speciale. Heldigvis har mange af vores kolleger også sagt ja til at deltage som moderatører af sessionerne og som bedømmere af de frie foredrag og posterne. Tak for det!

Vi forsætter med at have fokus på uddannelse. Professor ph.d Lene Tanggaard Pedersen og 1. reservelæge Lene Spanager, der med to spændende foredrag vil bringe uddannelse/mesterlære/læring i fokus

Endvidere fører vi traditionen videre med præsentation af ØNH relaterede gennemførte ph.d-forløb på årsmødet. Tillige med et indlæg fra Tejs Ehlers Klug der blev Dr.med i 2016.

Igen i år har vi haft stor tilslutning af udstillere. Det er vi meget glade for. Herved får DSOHHs medlemmer mulighed for at orientere sig om nyheder indenfor faget.

Med ønsker om et godt møde til alle

Fra DSOHH bestyrelse  
Anette Drøhse Kjeldsen

Per Caye-Thomasen  
Anders Schermacher Larsen  
Tejs Ehlers Klug  
Gitte Bjørn Hvilsom



# Programoversigt

	TORS DAG 20. APRIL	FREDAG 21. APRIL
09.00	Registrering	Frie foredrag - Hoved-hals 09.00
10.00	Velkomst	Frie foredrag - Otologi og vestibulogi
	Kronisk rhinosinit Inviterede foredragsholdere	KAFFE
11.00	KAFFE	Frie foredrag - Hoved-hals
12.00	Kronisk rhinosinit Inviterede foredragsholdere	Frie foredrag - Audiologi, Videreguddannelseslegater 2015 og 2016
13.00	FROKOST	FROKOST
14.00		Doktor disputats og ph.d afhandlinger 2016
15.00	Frie foredrag - Hoved-hals	Uddannelses session
	KAFFE	Afslutning og prisoverrækkelse
16.00	Frie foredrag - Laryngologi/rhinologi	Uddannelses session
17.00	DSOHH Generalforsamling	
18.00		
19.30	Gallamiddag og dans	

# Program torsdag d. 20. april

09.00-10.00		REGISTRERING
AUDITORIUM Kronisk rhinosinuit og allergi - Moderator: Anette D. Kjeldsen		
10.00-10.15		Velkomst ved formand A. Kjeldsen
10.15-11.00	19	Prof. Dr. Philippe Gevaert Endotypes of CRSwNP and novel treatment strategies
11.00-11.20	21	Kåre Håkansson, ph.d Nasal polypose og astma
11.20-11.50		KAFFE OG BESØG HOS UDSTILLERE - POSTERPRÆSENTATIONER NR. 1-6
AUDITORIUM - Moderator: Anette D. Kjeldsen		
11.50-12.20	20	Thomas Houmann Petersen, overlæge Rhinokonjunktivitis hos børn: Behandlingsstrategi - Er immunterapi effektiv og sikker?
12.20-12.40	22	Bibi Lange, ph.d. Screening for kronisk rhinosinuit blandt personer med acetylsalicylsyre/NSAID intolerance
12.40-13.00	23	Claus Gregers Pedersen Håndtering af CRS i ØNH praksis
13.00-13.20		Diskussion
13.20-14.20		FROKOST



# Program torsdag d. 20. april - fortsat

AUDITORIUM Hoved-hals kirurgi - Moderator: Christian von Buchwald				SAL 31 Uddannelse - Moderator: Grethe Samuelsen			
14.20-14.35	60	JR Sørensen	Thyroidectomy improves tracheal anatomy and airflow in patients with nodular goiter. A prospective cohort study	14.20-15.35	24	Professor, ph.d Lene Tanggaard Pedersen	Mesterlære i en dynamisk læringskultur – hvordan og hvorfor?
14.35-14.50	62	FS Pustelnik og C Grønbæk	The compensatory enlargement of the remaining thyroid lobe following hemithyroidectomy is small and has no impact on symptom relief				
14.50-15.05	58	DB Skansig	Nonanaplastic follicular cell-derived thyroid carcinoma: Mitosis and necrosis in long-term follow up				
15.05-15.20	52	L Rolighed	Kirurgiske resultater efter parathyreoidektomi				
15.20-15.35	61	S Schröder	Is parotid saliva sterile on entry to the oral cavity?				
15.35-16.00				KAFFE OG BESØG HOS UDSTILLERE - POSTERPRÆSENTATIONER NR. 7-11			
AUDITORIUM Laryngologi/rhinologi - Moderator: Thomas Kjærgaard				SAL 31 Uddannelse - Moderator: Grethe Samuelsen			
16.00 -16.15	49	JR Sørensen	The impact of voice impairment after thyroidectomy on quality of life. A prospective cohort study	16.00 -17.00	25	Lene Spanager	Ikke-tekniske færdigheder i kirurgi
16.15 -16.30	48	J Maier	Elongering af a. carotis interna er associeret med recurrensparese				
16.30 - 16.45	50	S Mahmood	Voice, respiration and brain regulation, a review				
16.45 - 17.00	45	U Felding	A cadaveric study of the ethmoidal arteries: Is the 24-12-6 mm rule valid?				
17.10-18.30	DSOHH Generalforsamling						

# Program fredag d. 21. april

AUDITORIUM Hoved-hals - Moderator: Tejs E. Klug				SAL 31 Otologi og vestibulologi - Moderator: Per Cayé-Thomassen			
09.00-09.15	54	CN Saber	Human papillomavirus genotyper og patient karakteristika i den største kohorte af synkrone, bilaterale tonsilcancer	9.00 - 9.15	37	E Abraham- sen	Intra- and inter-examiner reliability of two separate video Head Impulse Test systems assessing all six semicircular canals
09.15-09.30	55	K Jensen	Circulating human papillomavirus DNA as a surveillance tool in head and neck squamous cell carcinoma: a systematic review and meta-analysis	09.15-09.30	43	L Devantier	Suppression Head Impulse Paradigm (SHIMP) og Head Impulse Paradigm (HIMP) hos raske unge
09.30-09.45	63	H Channir	Genetic Characterization of Adenoid Cystic Carcinoma of the Minor Salivary Glands: A Potential Familial Occurrence in First-Degree Relatives	09.30-09.45	36	MF Howitz	A nationwide study on the impact of pneumococcal conjugate vaccination on antibiotic use and ventilation tube insertion in Denmark 2000-2014
09.45-10.00	67	H Channir	Etablering af vækstmønsteret og lokaliseringen af HPV E6/ E7 onkogenet i oropharyngeale planocellulære carcinomer	09.45-10.00	41	A Kørvel -Hanquist	Childhood behavior and academic performance following early life otitis media
10.00-10.15	65	CC Plaschke	Calcium elektroporation af hoved-hals cancer	10.00-10.15	38	S Mogensen	Wide Band Tympanometry and Absorbance in Otosclerotic and Normal Ears
10.15-10.30	66	CC Plaschke	Elektrokoterapi af hoved-hals cancer recidiv hos inoperable patienter som har modtaget strålebehandling (DAHANCA 32)	10.15-10.30	35	SA Andersen	Distribueret virtual reality simulationstrænings effekt på dissektionspræstationen i mastoidektomi
10.30-10.45	56	P Homøe	Langtidsresultater efter endoskopisk behandling for Zenker divertikel med LigaSure™ 5 mm instrument	10.30-10.45	46	A Fjælsted	Præsentation af Flavour klinikken, Holstebro
10.45-11.15	KAFFE OG BESØG HOS Udstillere - POSTERPRÆSENTATION POSTER NR. 12-16						
AUDITORIUM Hoved-hals - Moderator: Thomas Frisch				SAL 31 Audiologi og Videreuddannelses legater - Moderator: Therese Ovesen			
11.15-11.27	69	M Tabatabai	Rekonstruktion med kindlapper efter kirurgisk ablation af mundhulekræft	11.15-11.30	39	A Wolff	Predictive factors for successful hearing aid treatment with special focus on health related quality of life and asymmetric hearing
11.27-11.40	68	T Frisch	Rekonstruktion af bløddel i mundhule og svelg med lokale lapper og ikke-vitalt materiale efter tumorablation. En oversigt	11.30-11.45	40	DH Hestoy	Audiological and vestibular pathologies in subjects harbouring the mtDNA mutation A3243G
11.40-11.52	53	SH Michael- sen	Quality of life in survivors of oropharyngeal cancer: a systematic review and meta-analysis of 1366 patients	11.45-12.00	42	K Mey	Pendred Syndrome and non-syndromic EVA – association between SLC26A4 mutations, inner ear morphology and hearing levels in 117 individuals
11.52-12.05	59	N Wulff	Prognostic factors for survival after salvage total laryngectomy following radiotherapy or chemoradiation failure: a 10-year retrospective longitudinal study in Eastern Denmark	12.00-12.15	31	J Moritz	Undersøgelse og behandling af børn ved mistanke om søvnapnø. Resume af 2 mdr. klinisk ophold på 2 børnesøvnklinikker i Dresden/ Tyskland

# Program fredag d. 21. april - fortsat

AUDITORIUM Hoved-hals - Moderator: Thomas Frisch				SAL 31 Audiologi og Videreuddannelses legater - Moderator: Therese Ovesen			
12.05-12.17	64	K Karnov	Incidence and survival trends in oral cancer in Denmark between 1980 and 2014	12.15-12.30	32	EK Kiær	Kliniske ophold ved Royal National Throat, Nose and Ear Hospital, UCLH, London og Sint Lucas Andreas Hospital, OLVG Amsterdam
12.17-12.30	57	M Rohde	Head-to-head comparison of chest x-ray/head and neck MRI, chest CT/head and neck MRI, and 18 F-FDG-PET/CT for detection of distant metastases and synchronous cancer in oral, pharyngeal, and laryngeal Cancer				
12.30-13.30	FROKOST OG BESØG HOS UDS STILLERE						
AUDITORIUM Disputat og ph.d'er 2016 - Moderator: Preben Homøe							
13.30-14.00	26	TE Klug, Dr.med	Peritonsillar abscess: Clinical aspects of microbiology, risk factors, and the association with parapharyngeal abscess				
14.00-14.20	27	SA Andersen, ph.d	Virtual reality simulation training of mastoidectomy - studies on novice performance				
14.20-14.40	28	LS Percy, ph.d	Born Deaf - growing up hearing. Outcomes of Pediatric Cochlear Implantation in Denmark				
14.40-15.10	KAFFE						
15.10-15.30	29	M Rusan, ph.d	From epidemiology to therapeutics: Analysis of Human Papillomavirus prevalence in tonsillar infections and Transcriptional repression as adjunct to targeted cancer therapy				
15.30-15.50	30	T Todsén, ph.d	Surgeon-performed ultrasonography Collecting validity evidence for assessment of abdominal and head & neck ultrasonography skills				
15.50-16.05	Aflutning med prisoverrækkelse						

## Kongres center

Årsmødet bliver afholdt på Hotel Nyborg Strand, hvor mødet har været afholdt i en længere årrække. Hotellet er centralt og smukt beliggende. Der er 650 gratis P-pladser.

Foredrag holdes i Auditoriet Sal A og Lokale 31, der ligger på 1. sal. Desuden afholdes udstilling i Vandrehallen og i sal B+C.

## WIFI

TDC-Hotspot

Internet: nyborgstrand

Password: nyborgstrand

## Hotelværelser

Værelserne er til disposition fra klokken 14.00 på ankomstdagen. Nøgleudlevering foregår i receptionen. Hotel Nyborg Strand er ansvarlig for værelsesfordelingen.

## Organisationskomite

FORMAND	Anette D. Kjeldsen
NÆSTFORMAND	Per Cayé-Thomasen
KASSERER	Anders Shermacher Larsen
SEKRETÆR	Gitte Bjørn Hvilsom
REDAKTØR	Tejs Ehlers Klug

## Foredrag

Foredrag under DSOHH 2017 er opdelt i tre kategorier.

Key-note forelæsning

Inviterede forelæsere (varierende taletid og 5 min til spørgsmål)

Frie foredrag (8 min tale og 5 min til spørgsmål)

Foredragsholdere bedes være opmærksomme på følgende:

Taletid skal overholdes. Hvis taletiden overskrides forbeholder vi os ret til at afbryde foredraget. Der vil være tidtagere, der hjælper med at holde tiden.

Præsentationer indlæses på computer i god tid, og senest i pausen inden foredraget skal afholdes. Der vil være både PC til rådighed.

Hvis præsentationen indeholder videosekvenser, er det vigtigt, at du indlæser foredraget i god tid og sikrer dig, at videoer kan afspilles.

## Poster præsentationer

Poster præsentationer vil under hele mødet være placeret i Sal C. Hver poster er nummereret og der er en oversigt over posterne i mødebogen. Ligeledes forventes det, at forfatteren er til stede ved sin poster i det angivne tidsrum og fremlægger posterens indhold. Bedømmelsesudvalget vil her være til stede.

Det er forfatterne, som er ansvarlige for ophængning og nedtagning af posters.

## Priser til bedste foredrag og poster

DSOHH uddeler priser til de tre bedste foredrag. Foredragsholderen til det bedste foredrag modtager 5000,- kr og de to næstbedste modtager 2500,- kr. Der er desuden pris til den bedste og næstbedste poster på henholdsvis 2500,- kr og 1000,- kr.

Alle ikke-inviterede foredragsholdere deltager i konkurrencen om priser, uanset alder og erfaringsniveau.

DSOHH bestyrelsen har udpeget en bedømmelseskomite, som vil vurdere alle foredrag og poster. Vinderne bliver annonceret ved årsmødets afslutning, fredag den 21. april klokken 15.50, hvor priserne uddeles. Det er en forudsætning at vinderne er personligt tilstede ved prisoverrækkelsen. Hvis dette ikke er tilfældet, vil pengene overgå til Yngre Lægers rejselegat.

# SOCIALT PROGRAM

## GALLAMIDDAG

Torsdag d. 20. april kl. 19.30-22.00

### MENŪ

#### Forret

*Skærisingfilet farseret med spinat-laksemousse.  
Hertil hummersauce med cognac samt couvertbrød*

#### Hovedret

*Angusfilet med rødvinssauce.  
Serveret med dagens garniture/friske grønsager og kartoffel*

#### Dessert

*Pære-karamelmousse på hasselbund med kompot af rabarber og vanilleis*

---

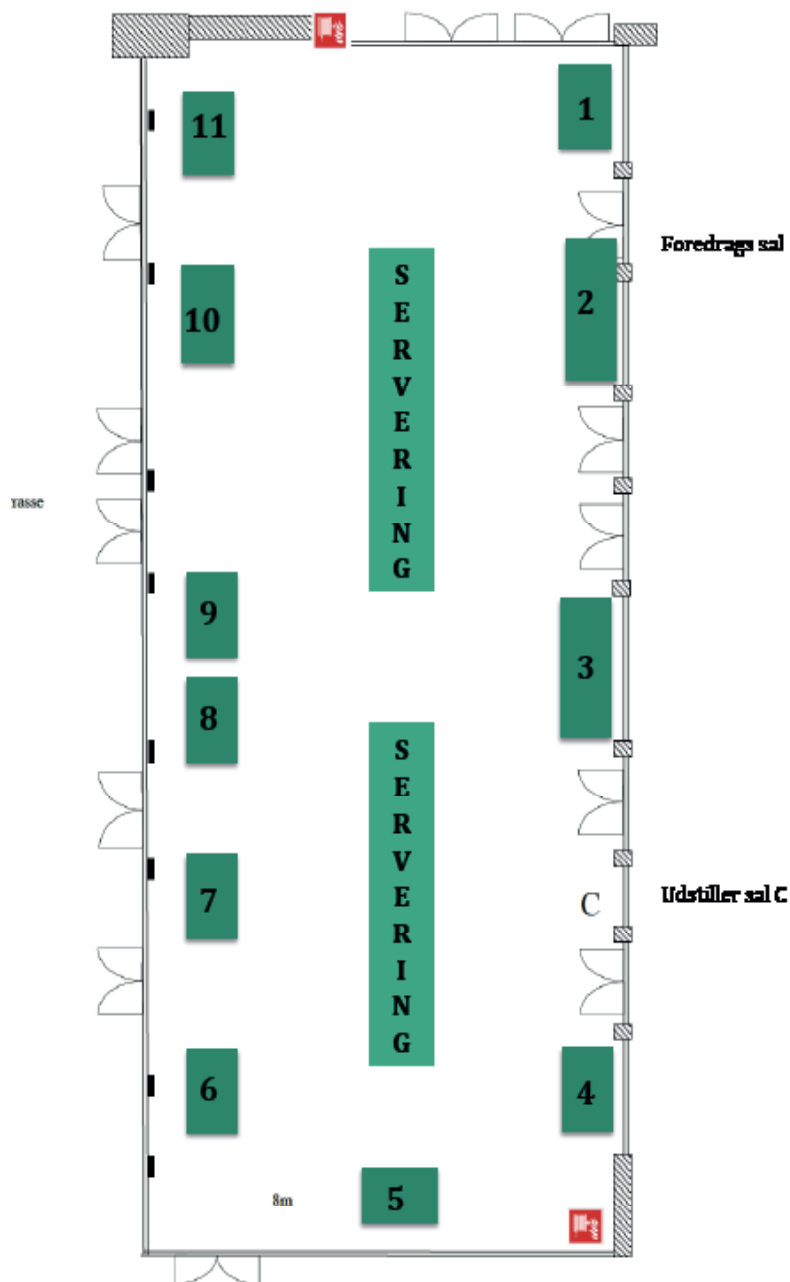
## EFTERFØLGENDE DANS

kl. 22.00-01.00

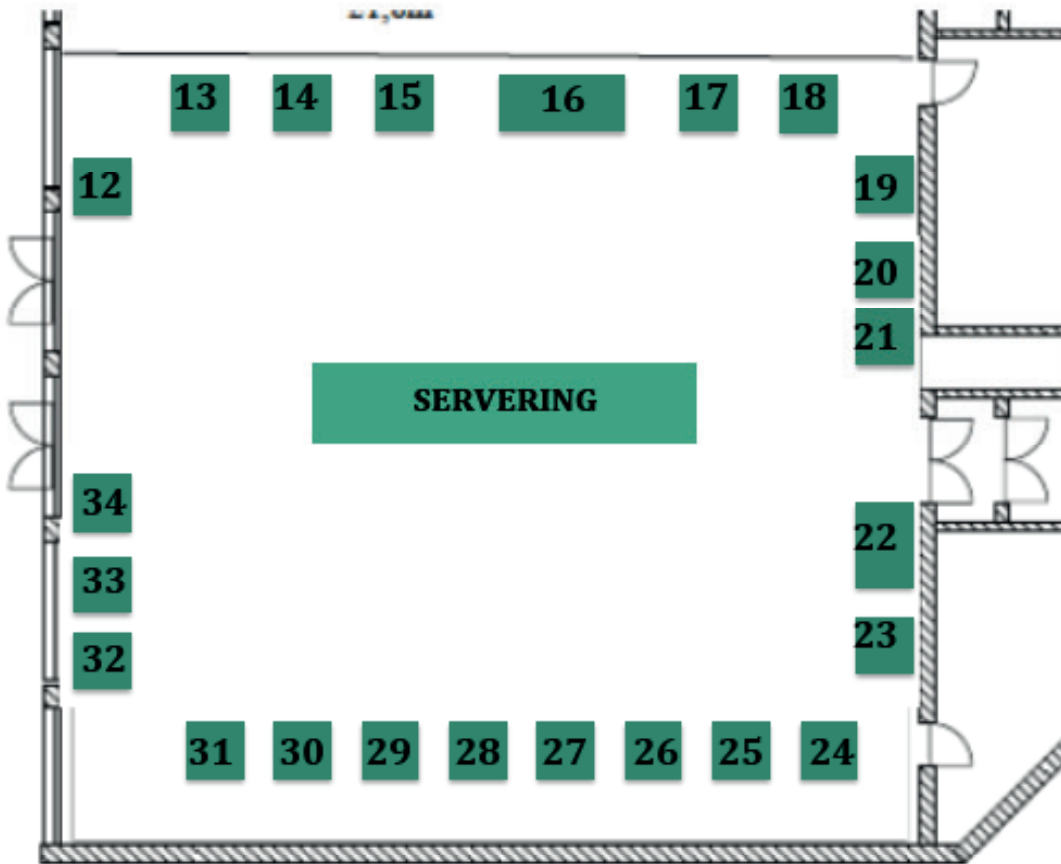
DJ Jacob Hussak spiller op til dans

UDSTILLER	STAND NR.
A-data A/S	22
Abena A/S	18
Abigo Pharma A/S	34
Alere A/S	33
Allergan ApS	28
Amellnova	13
Bernafoon	1
Carl Zeiss A/S	32
Danaflex A/S	12
EG A/S	7
Inform A/S	6
Inomed Medizintechnik GmbH	23
Interacoustics	2
Hospitals- & Klinikspecialisten	25
Karl Storz Endoskopi	9
KEBOMED A/S	16
Max Manus A/S	14
Meda AB	5
Mediq Danmark A/S	30
MED-EL	26
Novartis	27
NOVAX A/S	8
Olympus Danmark	24
Oticon	10
Oticon Medical	11
Otometrics	4
POA Pharma	15
PO MEDICA AB	31
Santax Medico	19
Shire	20
Sivantos A/S	3
Smith & Nephew	21
SOMNOmedics GmbH	17
Timik ApS	29

# Udstillerplan DSOHH 2017 - Vandrehallen







# Inviterede foredrag

# Endotypes of CRSwNP and novel treatment strategies

PROF. DR. PHILIPPE GEVAERT

Gent Universitet

# Rhinokonjunctivitis hos børn: Behandlingsstrategi - Er immunterapi effektiv og sikker?

THOMAS HOUMANN PETERSEN, OVERLÆGE

Fagområdespecialist i pædiatrisk astma og allergologi  
Børneafdelingen Kolding og  
Allergicentret Odense Universitetshospital

Foredraget vil være en gennemgang af “state of the art” behandling af rhinokonjunctivitis hos børn. Der vil blive lagt særlig vægt på børn med sværere grader af allergisk rhinokonjunctivitis og hermed også behov for flere behandlingsmodaliteter. Foredraget vil inkludere en gennemgang af behandlingen med subkutan og sublingual allergenspecifik immunterapi hos børn med allergisk rhinokonjunctivitis.

# Nasal polypose og astma

KÅRE HÅKANSSON, PH.D

Rigshospitalet, HovedOrtoCentret, Øre-næse-halskirurgisk og Audiologisk Klinik

Patienter med inflammation i næsen og bihuler har ofte samtidige symptomer fra lungerne, eksempelvis i form af astma. I en tidligere PhD afhandling undersøgte vi, i et samarbejde med lungemedicinere, samspillet mellem øvre og nedre luftvejssygdom hos patienter med kronisk rhinosinuitis med nasal polypose. En viden om et samspil har længe været kendt – alligevel tror vi, at lungesympptomer hos patienter med næse-bihule sygdom kan forblive ubehandlede hos øre-næse-hals læger ligesom lungemedicinske specialister ikke altid adresserer næsesymptomer.

På Rigshospitalet påviste vi astma hos 65% af patienter med nasal polypose henvist til FESS; i øvrigt var 30% af astmatikerne udiagnosticerede præoperativt. Vi analyserede desuden inflammationen i næse og lunger og viste, at immunsystemet var identisk aktiveret igennem hele luftvejen; aktiveringen var til stede på alle niveauer inklusive i lungerne hos patienter med astma; og aktiveringen var stærkest i polypperne. Dette tyder på 1) en fælles sygdomsproces i næse og lunger, 2) at næse-polypper ikke blot er et passivt resultat inflammationen - de spiller en aktiv rolle.

Siden afslutningen af PhD studiet har vi udvidet undersøgelsen til også at omfatte polyppatienter fra speciallæge-praksis som aldrig har fået foretaget FESS. I denne patientgruppe er frekvensen af astma lavere, men dog fortsat 44%. Endelig har vi i et litteraturstudie vurderet eksisterende behandlinger af nasal polypose og deres effekt på evt. lungesygdom, og vi måtte konkludere, at der mangler evidens på området. I fortsættelse af vores studier har vi intensiveret det kliniske samarbejde mellem ØNH og lungemedicin i Region Hovedstaden med oprettelse af et fælles ambulatorium.

# Screening for kronisk rhinosinuit blandt personer med acetylsalicylsyre/NSAID intolerance

BIBI LANGE <sup>(1)</sup>, A. KJELDEN <sup>(1)</sup>, C. MØRTZ <sup>(2)</sup>, C. BINDSLEV-JENSEN <sup>(2)</sup>

(1) Øre-Næse-Halskirurgisk afdeling Odense Universitet hospital

(2) Allergicentret Odense Universitet Hospital

### **Introduktion:**

Patienter med ASA/NSAID intolerance har en øget hyppighed af nasale symptomer i form af kronisk rhinosinuit (CRS). CRS diagnosen er forbundet med nedsat livskvalitet, og opsporing og behandling af CRS blandt patienter med ASA/NSAID intolerance formodes at have en positiv indvirkning på patientgruppens livskvalitet.

Formålet med dette studie var at bestemme prævalensen af CRS hos personer med ASA/NSAID intolerance, vurdere deres livskvalitet og vurdere i hvilket omfang henvisning til undersøgelse på ØNH afdeling er nødvendig.

### **Metode:**

Patienter med mistanke om ASA/NSAID intolerance blev henvist fra hele region Syd-danmark til Allergicentret Odense Universitet Hospital. Hvis mistanken blev opretholdt ved provokationstest blev personer tilbudt og henvist til undersøgelse på ØNH afdelingen. På ØNH afdelingen blev der foretaget interview, rhinoskopi, lugtetest og udfyldelse af SNOT 22.

### **Resultater:**

Antal personer med ASA/NSAID intolerance som blev undersøgt på ØNH afdelingen over en 3-årig periode var 46. Antal kvinder var 23. Gennemsnitsalder var 44 år. Antal personer med CRS var 17 hvoraf 11 havde polypper. SNOT 22 score var 39 blandt dem med CRS og 17 blandt dem uden CRS. Personer med CRS havde nedsat lugtesans. 9 personer blev tilbudt bihulekirurgi og 24 personer blev anbefalet forsat behandling med eller opstart af nasal steroid.

### **Diskussion:**

Omkring 40 procent af personer med ASA/NSAID intolerance har CRS med påvirkning af livskvalitet og behov for behandling. Det anbefales at personer med intolerance screenes for næsebihuleproblemer og ved positiv screening henvises til ØNH afdelingen.

1. forfatters email: Bibi.Lange@rsyd.dk

# Håndtering af CRS i ØNH praksis

CLAUS GREGERS PETERSEN

Speciallæge praksis

# Mesterlære i en dynamisk læringskultur – hvordan og hvorfor?

LENE TANGGAARD PEDERSEN

Professor, Ph.d., Centerleder og Viceinstituteder, Institut for Kommunikation ved Aalborg Universitet.

Hvorfor er mesterlære old-school, men samtidig totalt cool? Er mesterlære virkelig svaret på nogle af de udfordringer, vi står i - også i sundhedsvæsenet? Skal vi blive bedre til at dyrke talentfulde miljøer? Hvorfor kan 'den dedikerede fagnørd' give mere værdi, blive bedre til at bidrage til læringskultur og tænke organisatorisk? Lene oplæg bygger på hendes seneste bog Lær skrevet i samarbejde med Tue Juelsbo. I bogen argumenteres der for, at vi har brug for dynamiske læringsmodeller i fremtidens organisationer, så nye medarbejdere kommer hurtigere op i gear, og hvor vi bliver bedre til at lære af hinandens praksisser. Mesterlære er et af svarene på at få etablere en dynamisk læringskultur, men hvorfor og hvordan?



# Ikke-tekniske færdigheder i kirurgi

LENE SPANAGER, 1. RESERVELÆGE

Kirurgisk afdeling, Nordsjællands Hospital

### Introduktion

Læger skal besidde en række færdigheder for at sikre tilstrækkelig kompetence, disse inkluderer ikke-tekniske færdigheder, såsom situationsbevidsthed, beslutningstagning, kommunikation, samarbejde og ledelse. Her præsenteres et redskab, NOTSSdk (Non-Technical Skills for Surgeons in Denmark) til at vurdere og give feedback til en uddannelsessøgende læge på dennes ikke-tekniske færdigheder under en operation.

### Metode

Gennem 4 studier blev NOTSSdk tilpasset, fra den oprindelige skotske version, til det danske sundhedsvæsen. Først gennemførtes interviews med kirurger, operationssygeplejersker, anæstesi-læger og anæstesisygeplejersker på 2 hospitaler. Dernæst testede vi pålideligheden af vurderinger af kirurgers ikke-tekniske færdigheder i et eksperimentelt design af delvist instruerede videoer. Siden undersøgte vi pålideligheden af vurderinger af en uddannelsessøgendes ikke-tekniske færdigheder under forskellige operationer. Sidst undersøgte vi anvendeligheden af NOTSSdk til postoperativ feedback.

### Resultater

NOTSSdk består af 4 kategorier: situationsbevidsthed, beslutningstagning, ledelse og kommunikation & teamwork. Hver kategori består af 3-4 elementer og yderligere eksempler på hhv. god og uhensigtsmæssig adfærd.

Studierne viste, at kirurger uden forudgående erfaring med vurdering af ikke-tekniske færdigheder kunne bruge NOTSSdk og opnå høj inter-observatør pålidelighed i både eksperimentel og klinisk brug.

Både supervisorerne og de uddannelsessøgende læger fandt at feedback samtalerne ved brug af NOTSSdk var brugbare og dækkende.

### Diskussion

Redskabet har indholdsvaliditet, tilstrækkelig pålidelighed i eksperimentel og klinisk brug, og supervisorer giver med redskabet brugbar og dækkende postoperativ feedback til uddannelsessøgende læger. Spørgsmålet er om det passer til øre-, næse-, halskirurgi og i givet fald, hvordan man kan integrere det i speciallægeuddannelsen?

### Doctordisputat:

## Peritonsillar abscess: Clinical aspects of microbiology, risk factors, and the association with parapharyngeal abscess

DR. MED. TEJS EHLERS KLUG

Aarhus Universitetshospital

I et studie af 847 patienter med PTA indlagt på øre-næse-halsafdelingen, AUH i perioden 2001 til 2006, fandt vi, at FN var den hyppigst (23%) identificerede bakterie i pus- dyrkninger. Desuden havde patienter med fund af FN i deres dyrkning signifikant højere gennemsnitlige værdier af CRP og neutrofile granulocytter end FN-negative patienter ( $P=0,01$  hhv  $P<0,001$ ). I et efterfølgende prospektivt studie af 36 patienter med PTA og 80 elektivt tonsillektomerede (kontroller), fandtes FN i pusaspiraterne fra 58% af patienterne. FN fandtes signifikant hyppigere i tonsilvævet fra PTA patienter (56%) sammenlignet med kontrollerne (24%) ( $P=0,001$ ). I serumprøver fra de samme patienter kunne vi vise, at otte af 11 FN-positive PTA patienter udviklede højere anti-FN antistof titre efter infektionen, mens ingen af fire FN-negative patienter med PTA og ni af 47 elektivt tonsillektomerede havde anti-FN titerstigning ( $P=0,026$  hhv  $P<0,001$ ). Ud fra journaloptagelser angående rygevaner blandt 847 patienter indlagt med PTA og data fra the annual Smoking Habit Survey og Danmarks Statistik fandt vi, at rygning var associeret med øget risiko for PTA (cirka 2,5 gange) for begge køn og for alle aldersgrupper. Ud fra en kohorte bestående af alle 1.620 patienter med PTA i Aarhus Amt i perioden 2001 til 2006, fandtes incidencen af PTA stærkt relateret til alder og køn. Incidencen af PTA udviste ingen årstidsvariation, men mikrobiologien fluktuerede med årstiderne. I et studie af 63 patienter med PPA i perioden 2001 til 2011, havde 53% af patienterne konkomitant PPA og PTA. Denne hyppigere udvikling af abscesser med to forskellige lokalisationer taler for at foretage tonsillektomi foruden intrapharyngeal incision hos patienter med PPA.

I tillæg til GAS, tyder vores studier på, at også FN er patogenetisk betydende ved PTA. Denne antagelse baseres på følgende fund:

1. FN kan hyppigt dyrkes fra pusaspirater fra PTA-patienter
2. FN findes signifikant hyppigere hos patienter med PTA i forhold til patienter uden aktuel infektion
3. Udvikling af anti-FN-antistoffer hos patienter med FN-positiv PTA
4. FN-positive patienter med PTA havde signifikant højere inflammationsmarkører i forhold til FN-negative patienter.

# Ph.d.-afhandling

## Virtual reality simulation training of mastoidectomy – studies on novice performance

PH.D STEVEN A. W. ANDERSEN

Øre-, næse- og halskirurgisk & Audiologisk Klinik, Rigshospitalet.  
Vejledere: Mads Sølvsten Sørensen, Per Cayé-Thomassen og Lars Konge.  
Forsvaret fandt sted 24. juni 2016 på Rigshospitalet.

### **Introduktion:**

Virtual reality (VR) simulationsbaseret træning anvendes i stigende grad i træningen af kirurgiske færdigheder, herunder i tindingebenskirurgi. VR simulation kan være med til at sikre træning af høj kvalitet, hvor grundlæggende færdigheder kan opøves uden for det kliniske miljø og uafhængigt af patienter. Formålet med afhandlingen var at bidrage til evidensbaseret VR simulationstræning af mastoidektomi.

### **Metode:**

Afhandlingen inkluderer fem studier af novicers slutproduktpræstation med undersøgelse af overførslen af færdigheder til kadaver dissektion, effekten af forskellige træningsprogrammer og simulator-integreret vejledning og feedback på præstation og retention af færdigheder, og rollen af målrettet, selvreguleret læring ved selvtræning.

### **Resultater:**

Tekniske færdigheder i mastoidektomi opnået ved VR simulationsbaseret træning kan overføres til dissektionspræstationen og 3 timers simulationstræning øger præstationen med 52 %. Læringskurverne for proceduren er meget individuelle men flader ofte ud efter få procedurer og på et utilstrækkeligt niveau. Spredning af træningsblokkene over tid fører til en bedre præstation og mere konsoliderede færdigheder end sammenklumpet træning. Simulator-integreret vejledning og feedback accelererer den første del af læringskurven men fører også til et betydende fald i præstationen når tutor-funktionen slås fra.

### **Diskussion:**

VR simulationstræning af mastoidektomi kan bruges som et effektivt supplement til dissektionstræningen i tindingebenskirurgi. Procedurens kompleksitet og ikke mindst novicernes utilstrækkelige selvevalueringsevner udgør dog stadig udfordringer for optimal læring. Fremtidig simulatorintegreret og automatiseret bedømmelse af mastoidektomi-præstationen kan være en potentiel løsning og kan udover løbende feedback også bruges til træning mod et fastsat niveau (mastery learning) i et systematisk og kompetencebaseret uddannelsesprogram.

# Ph.d.-afhandling

## Born Deaf – growing up hearing. Outcomes of Pediatric Cochlear Implantation in Denmark

PH.D. AUDIOLOGOPÆD LONE PERCY-SMITH

Faculty of Health and Medical Science, University of Copenhagen

Supervisor: Professor Per Cayé-Thomasen

### **Baggrund:**

Effekt-studie af den medicinske og tekniske intervention i forhold til auditivt, talesprogligt og socialt udbytte for den første generation af børn med CI i Danmark.

### **Formål:**

Det primære mål var en evaluering af niveauet af hørelse, talesprog og social velfærd for børn med CI.

### **Metode og materiale:**

Afhandlingen binder fire videnskabelige artikler sammen, som relaterer til to kohorter før og efter introduktion af UNHS og tilbud om bilateral CI. Ni sproglige tests og vurderingsskemaer blev anvendt og associeret til en række baggrunds-faktorer.

### **Resultater:**

Forældres valg af kommunikationsform havde signifikant effekt på alle undersøgte områder af udbytte. Alder ved implantation og bopæl i forhold til tilknytning til Østdansk eller Vestdansk CI center havde ligeledes signifikant effekt. Majoriteten af børn blev vurderet til at have et højt niveau af social velfærd og niveau af social velfærd var positivt korreleret med talesprogligt niveau.

### **Konklusion:**

Pædiatrisk CI har medført markante ændringer i forhold til både personlige og samfundsmæssige vilkår for børn med døvhed/kraftigt høretab, og disse ændringer medfører til stadighed store udfordringer for både sundheds- og undervisningsområdet.

## Ph.d.-afhandling

### From epidemiology to therapeutics: Analysis of Human Papillomavirus prevalence in tonsillar infections and Transcriptional repression as adjunct to targeted cancer therapy

PH.D MARIA RUSAN

Health, Aarhus University, Dept. of Otorhinolaryngology, Dept. of Clinical Microbiology & Dept. of Clinical Medicine  
Vejledere: Therese Ovesen og Kurt Fuursted.

#### Part I

The incidence of Human Papillomavirus (HPV) – associated tonsillar squamous cell carcinoma (TSCC) drastically increased during the past four decades. In Scandinavia >80% of TSCC is HPV-associated. However, the epidemiology and natural history of HPV infections in non-cancerous tonsillar tissue remains unclear. We sought to determine the prevalence and types of HPV in non-cancerous tonsillar tissue in a Danish population, and compare two HPV detection methods: a sensitive, labour-intensive nested PCR, and a high-throughput PCR-based hybridization assay (CLART HPV2). Nested PCR yielded a prevalence of HPV tonsillar infections of 1.25% (95% CI: 0.03-6.77%), whereas CLART HPV2 yielded 0% (95% CI: 0.0-4.51%). Our results suggest that HPV tonsillar infections are 10-15 fold less frequent than cervical infections. This may reflect sampling bias, differential viral clearance or susceptibility at these anatomical locations.

#### Part II

Acquired resistance remains an obstacle to effective targeted cancer therapy. Upon treatment with targeted therapies complex pro-survival and pro-proliferative responses are initiated, which promote the persistence of a drug-tolerant population. We hypothesized that repression of transcriptional changes induced by targeted therapy would interfere with this adaptive response and improve therapeutic efficacy. We found that combining THZ1, a novel transcriptional repressor, and targeted cancer therapy, enhanced cell killing and hampered emergence of drug-resistant colonies across a broad range of cellular cancer models of diverse genetic dependencies. This was extended to in vivo models (xenografts and an EGFR-T790M-L858RLSL/-; p53-R172HLSL/- GEMM of non-small cell lung cancer). We propose that targeted therapy induces a state of transcriptional dependency in a subpopulation of cells poised to become drug tolerant. THZ1 exploits this vulnerability by blocking dynamic transcriptional responses, remodelling of enhancers and key signalling outputs required for tumour cell survival in the setting of targeted cancer therapies, promising a broad-based strategy to hinder emergence of drug-resistant cancer cells.

## Ph.d.-afhandling

### Surgeon-performed ultrasonography

### Collecting validity evidence for assessment of abdominal and head & neck ultrasonography skills

PH.D TOBIAS TODSEN

Vejledere: Lars Konge, Professor, MD, PhD, Morten Lind Jensen, MD, PhD, Charlotte Ringsted, Professor, MD, PhD

Surgeons are increasingly using ultrasonography (US) in their clinical management of patients. However, US is a very user-dependent imaging modality and proper skills of the US operator are needed to ensure quality in patient care. This thesis explores the validity evidence for assessment of competence in abdominal and head & neck ultrasonography using the Objective Structured Assessment of Ultrasound Skills (OSAUS) scale. With the use of Messick's unitary framework of validity, five sources of validity evidence were explored: test content, response processes, internal structure, relations to other variables, and consequences. In summary this PhD thesis established strong validity evidence supporting the interpretation of the OSAUS scale to evaluate surgeon-performed US skills of the abdominal and head & neck diseases. We therefore recommend the OSAUS scale for formative in-training assessment and high-stakes summative decisions for surgeon-performed US. Further, we find formal "hands on" courses an essential part of initial US training with good transfer of learning to improved diagnostic accuracy. This thesis can therefore be used to support the move towards competency-based training in abdominal and head & neck US.

email [tobiastodsens@gmail.com](mailto:tobiastodsens@gmail.com)

Undersøgelse og behandling af børn ved mistanke om søvnapnø.

Resume af 2 mdr. klinisk ophold på 2 børnesøvnklinikker i Dresden/ Tyskland

JANKO MORITZ

Øre, næse, hals kirurgisk afdeling  
Sjællands Universitetshospital, Køge

Opholdet og erfaringer overføres til et klinik koncept, som sporer og diagnosticerer børn med relevant obstruktiv søvnapnø mere systematisk og i forkellige trin, afhængig af deres symptomer. Denne algoritme bruges ved behov også til behandling. Funktionen etableres på Sjællands Universitetshospital fra april 2017 i samarbejde med regionens børneafdelinger.

## Kliniske ophold ved Royal National Throat, Nose and Ear Hospital, UCLH, London og Sint Lucas Andreas Hospital, OLVG Amsterdam

EVA KIRKEGAARD KIÆR

Øre-, næse- og halskirurgisk & Audiologisk Klinik  
Rigshospitalet

Under opholdene fik jeg rig mulighed for at studere avanceret kirurgisk behandling af obstruktiv søvnapnø, og har kunnet integrere disse erfaringer i min kliniske hverdag, samt skabt gode kontakter til fremadrettet udvikling af dette område.



# Frie foredrag

Otologi,  
Vestibulologi  
og  
Audiologi

## Distribueret virtual reality simulationstrænings effekt på dissektionspræstationen i mastoidektomi

STEVEN A ANDERSEN<sup>1,2</sup>, S FOGHSGAARD<sup>1</sup>, P CAYÉ-THOMASEN<sup>1</sup>, MS SØRENSEN<sup>1</sup>

1. Øre-, næse- og halskirurgisk & Audiologisk Klinik, Rigshospitalet

2. Simulationscenter Rigshospitalet, Copenhagen Academy for Medical Education and Simulation

### Introduktion:

Tre timers virtual reality (VR) simulationstræning af mastoidektomi er vist at have en stor og positiv effekt på den efterfølgende dissektion. Gentagen og distribueret VR simulationstræning har potentialet til yderligere at forbedre dissektionspræstationen.

### Metode:

9 ud af 37 kursister på A-kursus i Mellemøret i januar 2016 og 2017 deltog i et tilbud om protokolleret simulationstræning (interventionen) forud for kurset. Træningen bestod af 5 træningsblokke i Visible Ear Simulatoren fordelt over 3 måneder. Hver blok bestod af 3 ens procedurer, hvoraf den første var guidet af simulatorens tutorfunktion. På A-kurset gennemførte alle 37 kursister den samme træningsblok i simulatoren, hvorefter de fik 60 minutter til at foretage en mastoidektomi på et dissektionspræparat uden assistance. Slutprodukterne af dissektionen blev vurderet af tre bedømmere på en 26-item modificeret Welling Scale.

### Resultater:

En linear mixed model med gruppe (intervention vs. kontrol) og rater som fixed effects blev anvendt. Estimated marginal means var 10.3 points for kontrolgruppen og 12.8 points for interventionsgruppen ( $p < 0.01$ ) svarende til en 25 % gennemsnitligt bedre præstation for gruppen, der havde gennemført distribueret træning forud for kurset.

### Diskussion:

Distribueret VR simulationstræning kan yderligere forbedre dissektionspræstationen sammenlignet med en enkelt blok simulationstræning. Sammenholdt med tidligere finder vi dog for begge grupper en lavere dissektionspræstation, hvilket kan skyldes både kvaliteten af kadavertindingebenene og deltagernes forberedelse forud for træningen. Variation i de individuelle læringskurver gør det mere hensigtsmæssigt i fremtiden at simulationstræne til et foruddefineret præstationsniveau (mastery learning) fremfor at træne et forudbestemt antal gange.

1. Forfatters email: [stevenarild@gmail.com](mailto:stevenarild@gmail.com)

## A nationwide study on the impact of pneumococcal conjugate vaccination on antibiotic use and ventilation tube insertion in Denmark

MICHAEL F. HOWITZ (1), ZB HARBOE (2,3), H INGELS (4), P VALENTINER-BRANTH (5), K MØLBAK (5), BD DJURHUUS (6,7)

1) Department of ENT Head & Neck Surgery, Nordsjællands Hospital - Hillerød

2) Department of Microbiology and Infection Control, Statens Serum Institut

3) Department of Infectious Diseases, Rigshospitalet

4) Department of Pediatrics, Næstved Hospital

5) Department of Infectious Disease Epidemiology, Statens Serum Institut

6) Epidemiology, Biostatistics and Biodemography, University of Southern Denmark - Odense

7) Department of ENT Head & Neck Surgery, Zealand University Hospital - Køge

### **Introduction:**

Introduction of Pneumococcal Conjugated Vaccines (PCV) in national immunization programs have been successful in reducing the number of invasive and lower respiratory pneumococcal infections. The impact of the vaccines on upper respiratory infections caused by pneumococci is less clear although these account for most pneumococcal infections. In this study, we used likely proxies for respiratory infections in children, such as antibiotic use and ventilation tube insertions (VTI), to estimate the impact of the vaccine on a national level.

### **Material/Method:**

The study was designed as a population-based retrospective correlation study, comparing trends in the incidence rate of antibiotic prescriptions and VTIs in the period 2000-2014.

### **Results:**

The introduction of PCV7 and PCV13 correlated with changes in the incidence rate from an almost steady increase in prescription of antibiotics in the pre-PCV period to a decreasing incidence for all children age 0-15 years. Similar patterns were observed in the mostly vaccinated age groups below 5 years of age. For VTI we observed a decreasing incidence rate in the years following introduction of PCV13 ending with a slightly higher incidence at 35 per 1,000 person years in 2014 compared to 31 in year 2000.

### **Discussion:**

We conclude that the steady increase in antibiotic use and VTI in the pre-PCV period have been partially reversed to near year 2000 levels after the introduction of PCV. This indicates that implementation of pneumococcal vaccines in the Childhood Vaccination Programme has likely reduced the incidence of upper respiratory diseases due to pneumococci in Denmark.

1. Forfatters email: michael.frantz.howitz.03@regionh.dk

## Intra- and inter-examiner reliability of two separate video Head Impulse Test systems assessing all six semicircular canals

EMIL ABRAHAMSEN <sup>(1)</sup>, A CHRISTENSEN <sup>(2)</sup>, D HOUGAARD <sup>(1)</sup>

(1) Department of Otolaryngology, Head & Neck Surgery & Audiology, Aalborg University Hospital, Denmark

(2) Unit of Clinical Biostatistics and Bioinformatics, Aalborg University Hospital, Aalborg, Denmark

### **Introduction:**

The purpose of this study was to evaluate both intra- and inter-examiner reliability of v-HIT testing when assessing all six semicircular canals (SCCs) of two separate v-HIT systems.

### **Methods:**

80 subjects with no previous vestibular or neurological disorders were tested. Subjects underwent four separate tests of all six SCCs with either EyeSeeCam® from Interacoustics or ICS Impulse® from GN Otometrics. The same two examiners tested all subjects twice. Pre-test randomization included type of v-HIT system, order of paired SCC testing as well as initial examiner.

### **Results:**

Limits of agreement (LOA) were calculated for both intra- and inter-examiner reliability. Coefficients (CC) were calculated for inter-examiner reliability. Both LOAs and CCs were low for the horizontal SCCs for both v-HIT systems. However, LOAs and CCs were high for the vertical SCCs for EyeSeeCam® whereas the opposite was true with ICS Impulse. Bland-Altman plots and bi-variate plots were generated.

### **Conclusion:**

Horizontal SCC testing: Both v-HIT systems displayed good intra- and inter-examiner reliability. Vertical SCC testing: ICS Impulse® displayed good intra- and inter-examiner reliability whereas the opposite was true with EyeSeeCam®.

Clinical applicability: Both v-HIT systems were found applicable for testing of the horizontal SCCs. However, with vertical SCC testing, only ICS Impulse® was found to provide reliable and reproducible results. Finally some level of experience is beneficial when performing the v-HIT test.

The abovementioned results are based on preliminary results. The presentation at the DSOHH annual meeting 2017 will include updated results and conclusions based on a total of 120 subjects.

1. Forfatters email: e.abrahamsen@rn.dk

## Wide Band Tympanometry and Absorbance in Otosclerotic and Normal Ears

SIMON MOGENSEN <sup>(1)</sup>, M JENSEN <sup>(2)</sup>, D HOUGAARD <sup>(3,4)</sup>

1. Aalborg Universitet
2. Enhed for biostatistik og bioinformatik, Aalborg Universitetshospital.
3. Øre- Næse- Halskirurgisk & Audiologisk afdeling, Aalborg Universitetshospital
4. Klinisk Institut, Aalborg Universitet

### Introduktion:

Otosklerose er den hyppigste årsag til ensidigt konduktivt høretab. Indtil nu har en anden sygdom i mellemøret, ossikeldiskontinuitet, vist lignende præoperative fund som ses ved otosklerose. Wide Band Tympanometry (WBT) menes præoperativt at kunne benyttes som supplerende undersøgelse mhp. mere præcis diagnostik.

Formålet med dette studie var at påvise om WBT kunne afsløre signifikante forskelle i mellemørets evne til at absorbere lyd i ører med kendt otosklerose sammenlignet med raske ører.

### Metode:

Retrospektivt case-kontrol studie med en otosklerose gruppe som bestod af 49 individer med otosklerose diagnosticeret peroperativt og en kontrolgruppe som bestod af 41 tidligere øreraske individer. Der blev udført WBT på alle individer med et Titan-impedance modul.

### Resultater:

Otosklerosegruppen havde signifikant lavere absorbans i frekvensintervallet mellem 1700 – 2500 Hz ( $P = 0,000$ ). Der var ikke forskel i standard tympanometri mellem de to grupper og resonansfrekvens kunne heller ikke påvise en forskel ( $P = 0,94$ ). Der var ingen forskel i køn ( $P = 0,55$ ) eller alder ( $P = 0,58$ )

### Diskussion:

WBT kan adskille otosklerotiske ører og normale ører ved at måle mellemørets evne til at absorbere lyd. Det var ikke muligt at adskille syge fra raske ører ved andre tympanometriske målemetoder. WBT vil potentielt kunne være et vigtigt diagnostisk hjælpemiddel, hvis man mistænker otosklerose hos en patient med konduktivt høretab. Det er dog ikke muligt at stille diagnosen otosklerose alene på baggrund af en WBT-måling endnu. Der er behov for mere forskning på området samt en større mængde normativ data før WBT kan stå alene som diagnostisk værktøj.

1. Forfatters email: [simon.mogensen@rn.dk](mailto:simon.mogensen@rn.dk)

## Predictive factors for successful hearing aid treatment with special focus on health related quality of life and asymmetric hearing

ANNE WOLFF<sup>(1)</sup>, S S HOUMØLLER<sup>(2)</sup>, M GAIHEDE<sup>(1)</sup>, D DUPONT<sup>(1)</sup>, J H SCHMIDT<sup>(2)</sup>, D HAMMERSHØJ<sup>(3)</sup>

1.Department of Otolaryngology, Head & Neck Surgery and Audiology, Aalborg University hospital

2.Department of Audiology, Odense University Hospital

3.Department of Electronic Systems, Aalborg University

### Introduction

It is estimated that around 500,000-800,000 people (DK) has a serviceable hearing loss. A relatively large proportion, 20%, of hearing aid owners do not use their hearing aids regularly. The underlying reasons for this are not well understood, but it is clear that these users do not perceive the benefit they receive from their devices to be sufficient. This PhD project is part of the national BEAR Project (Better hEARing Rehabilitation) which has the goal of improving hearing rehabilitation in Denmark through an update of clinical practice.

### Method

The focus of the present PhD project is to create a database representing the current hearing aid treatment of hearing disabled people in Denmark. The database will collect knowledge of different aspects that may prove to be important for user satisfaction. Data will be collected from consecutive clinical data, from the Department of Audiology Odense and Aalborg, as well as from several additional questionnaires.

This PhD will address whether the patients being treated with hearing aids, experience positive changes in their health related quality of life (HRQoL) according to the cause of hearing loss (ethiology), age, degree and type of hearing loss.

### Results

Preliminary results will be presented.

### Discussion

Both large- and small-scale investigation of classic test methods have been conducted, but the results were not clinically useful in identifying relevant subgroups and was separated from users' everyday life. In contrast, the BEAR project focuses on identifying relevant subgroups and developing new diagnostic procedures that can provide useful information and better outcome measures of aided-benefit.

1. Forfatters email: a.wolff@rn.dk

## Audiological and vestibular pathologies in subjects harbouring the mtDNA mutation A3243G

DANJAL H HESTOY <sup>(1,2,3)</sup>, DD HOUGAARD <sup>(4,5,6)</sup>, AT HØJLAND <sup>(1,2,6)</sup>, M GAIHEDE <sup>(4,6)</sup>, MB PETERSEN <sup>(1,2,6)</sup>

1. Department of Clinical Genetics, Aalborg University Hospital, Aalborg, Denmark
2. Research and Knowledge Center in Sensory Genetics, Aalborg University Hospital, Aalborg, Denmark
3. Faculty of Health Science, Aalborg University, Aalborg, Denmark
4. Department of Otolaryngology, Head & Neck Surgery, Aalborg University Hospital, Aalborg, Denmark
5. Department of Audiology, Aalborg University Hospital, Aalborg, Denmark
6. Department of Clinical Medicine, Aalborg University, Aalborg, Denmark.

### Introduction:

The mitochondrial DNA point mutation A3243G is known to express mainly two syndromes: Maternally Inherited Diabetes and Deafness (MIDD) and Mitochondrial Encephalomyopathy, Lactic Acidosis, and Stroke-like episodes (MELAS). Research has found Sensorineural Hearing loss (SNHL) to be the most frequent symptom in subjects bearing this mutation. Function of the vestibular organs is, however, scarcely investigated. This study examines the impact the A3243G mutation has on the inner ear. Inner ear function was evaluated by performing extensive vestibular and audiological examinations.

### Method:

Eight subjects with blood verified A3243G mutation underwent thorough audiological and vestibular examinations: Tone and speech-audiometry, video Head Impulse Test (v-HIT) of all six semi-circular canals (SCC), ocular- and cervical-Vestibular Evoked Myogenic Potentials (VEMPs), and otoneurological examination. Subjective symptoms were evaluated with the Dizziness Handicap Inventory (DHI) questionnaire.

### Results:

SNHL was found in seven subjects, one had a conductive hearing loss, combined mean PTA4 of 58,4 dB. Speech Discrimination Score (n=7) ranged from 24% to 100%, mean at 74%. v-HIT (n=42 (SCCs)) revealed pathology in nine lateral SCCs, five posterior SCCs and one anterior SCC, three measurements were inconclusive. All (n=14) o-VEMPs were absent, nine c-VEMPs were absent and two were inconclusive. Through the DHI, six subjects reported none to mild dizziness, one reported moderate, and one severe dizziness.

### Discussion:

Our population showed pathology from all the audiological and vestibular end organs. Our findings indicated that the pathology was located within the end organs, and neither within the superior- and/or inferior vestibular nerves nor the cochlear nerves.

1. Forfatters email: d.hestoy@rn.dk



## Childhood behavior and academic performance following early life otitis media

VINCENT FOUIGNER, A KØRVEL-HANQUIST\*, A KOCH, J NICLASEN, J DAMMEYER, J LOUS, P HØMØE

Department of Otorhinolaryngology and Maxillofacial Surgery, Zealand University Hospital.

Center for infectious disease epidemiology, Department of Epidemiology Research.

University of Copenhagen, Department of Psychology.

Research Unit for General Practice, Institute of Public Health, University of Southern Denmark.

\* Præsenteres af Asbjørn Kørvel-Hanquist

### Introduktion:

Otitis media (OM) er en hyppig infektionssygdom hos børn, og nedsat hørelse opleves ofte i perioden efter en episode med OM. Gentagne tilfælde med nedsat hørelse, eller længerevarende hørenedsættelse kan give problemer med udviklingen af sprog samt senere kognitive problemer. Alligevel diskuteres det fortsat, hvorvidt børn med gentagne episoder med OM får kognitive problemer senere i livet. Dette studie undersøger mulige associationer mellem antallet af tidlige episoder af OM i barndommen og senere selvvalderet skolefærdigheder.

### Metode:

Prospektivt indsamlede informationer, om antal episoder med OM i den tidlige barndom, samt selvvalderet skolefærdigheder ved 11 årsalderen, blev rekvireret fra den danske nationale kohorte "Bedre sundhed i generationer". Fire strata med otitis media som eksponering blev defineret (0, 1-3, 4-6 og  $\geq 7$  episoder med otitis media) og deres association til henholdsvis reporterede generelle skolefærdigheder, egenskaber i matematik og egenskaber i dansk for henholdsvis drenge og piger. Desuden blev der a priori defineret en gruppe relevante konfoundere. Der blev analyseret via odds regression analyser.

### Resultater:

Ud af 94.745 registrerede graviditeter med levendefødte børn, blev 35.946 børn inkluderet i analyserne. Børn med kongenite misdannelser blev ekskluderet. Ligeledes blev non-responders ekskluderet. Der blev ikke fundet nogen associationer mellem antal tidlige episoder med OM og skole færdigheder. Selv hos børn med  $\geq 7$  episoder med OM, blev der ikke fundet en association til nedsatte færdigheder i skolen.

### Konklusion:

Dette studie kunne ikke finde en association mellem antal episoder med OM i tidlige barndom og senere nedsatte færdigheder i skolen når børnene var 11 år gamle.

Foredrag holders e-mail: [asbp@regionsjaelland.dk](mailto:asbp@regionsjaelland.dk)

## Pendred Syndrome and non-syndromic EVA – association between SLC26A4 mutations, inner ear morphology and hearing levels in 117 individuals

KRISTIANNA MEY <sup>(1)</sup>, A MUHAMMAD <sup>(2)</sup>, L TRANEBJÆRG <sup>(3,5)</sup>, ND RENDTORFF <sup>(3)</sup>, SH RASMUSSEN <sup>(4)</sup>, M BILLE <sup>(1)</sup> AND P CAYÉ-THOMASEN <sup>(1,6)</sup>

1. Department of Otorhinolaryngology, Head&Neck Surgery and Audiology Rigshospitalet/Gentofte
2. Department of Radiology, Rigshospitalet
3. Department of Clinical Genetics/Rigshospitalet/The Kennedy Center, University of Copenhagen
4. Big Data Team, Municipality of Copenhagen
5. Institute of Clinical Medicine, University of Copenhagen
6. Faculty of Health and Medical Sciences, University of Copenhagen

### Objective:

To investigate the presence and relation of mono-allelic, bi-allelic or no detectable mutations in the SLC26A4 gene to inner ear morphology and hearing levels in a large cohort of individuals with Pendred syndrome (PS) or non-syndromic enlarged vestibular aqueduct (NSEVA) associated with hearing loss.

Study design: Retrospective cohort study.

Setting: Tertiary referral center serving 2.6 mill inhabitants.

### Methods:

A cohort of 117 individuals with PS or NSEVA was investigated. Association between the number of mutant alleles in the SLC26A4 gene, inner ear morphology (including endolymphatic sac size and protein content on MRI) and hearing level (PTA) was explored.

### Results:

75% of the individuals had bi-allelic SLC26A4 mutations (M2), which was associated with poor hearing and incomplete partition type II of the cochlea, as well as enlarged endolymphatic sac and vestibular aqueduct. Individuals with mono-allelic (M1) and no detectable mutation (M0) in SLC26A4 demonstrated a less severe and more diverse pattern of abnormal morphology and hearing levels. The probability of a larger endolymphatic sac was significantly higher in M2 individuals compared to M1 and M0 individuals, whereas no association was found for sac protein content.

### Conclusions:

The numbers of SLC26A4 mutations are associated with severity and variability of abnormal inner ear morphology and hearing levels in individuals with PS or NSEVA. Individuals with bi-allelic mutations invariably have poorer hearing; in 85% of cases they present incomplete partition type II of the cochlea with enlarged endolymphatic sac, whereas individuals with mono-allelic and no detectable SLC26A4 mutations have less severe hearing loss, and more diverse inner ear morphology.

1. Forfatters email: kristiannamey@gmail.com

## Suppression Head Impulse Paradigm (SHIMP) og Head Impulse Paradigm (HIMP) hos raske unge

LOUISE DEVANTIER<sup>(1,2)</sup>, T OVESEN<sup>(1,2)</sup>, JJ MØLBY-HENRIKSEN<sup>(2)</sup>

1. Institut for klinisk Medicin, Aarhus Universitet.
2. Øre-næse-hals afdelingen, Regionshospitalet Holstebro

Suppression Head Impulse Paradigm (SHIMP) er en ny variant af Head Impulse Test. Head Impulse Test benævnes også Head Impulse Paradigm (HIMP) og benyttes rutinemæssigt verden over. Til HIMP benyttes ofte video-briller til præcis monitorering af hoved- og øjenbevægelserne, hvorved der kan udregnes en gain-værdi samt visualiseres både covert og overt saccader, som udtryk for den testede buegangs funktion.

SHIMP adskiller sig fra HIMP ved at testpersonen under undersøgelsen bedes fokusere på en bevægelig laserlysprik i stedet for et fast punkt på væggen foran. Videobrillen projekterer laserlysprikken på væggen som bevæger sig sammen med hovedbevægelserne/impulserne. Hos raske personer bevirker VOR at øjnene drejes modsat hovedimpulsen, hvormed øjnene drives væk fra target (laserlysprikken), og som en konsekvens ses en korrektionsbevægelse, en SHIMP saccade, ved slutningen af hovedimpulsen for at øjnene igen kan fokusere på lysprikken.

Formål med studiet er at teste en gruppe unge med HIMP og SHIMP, og at sammenligne undersøgelsesernes gain-værdi samt saccade-mønstre.

### **Metode:**

30 raske skolebørn i alderen 13 - 16 år og 2 mdr. (mean alder: 14 år og 7 mdr.) fik alle lavet HIMP efterfulgt af SHIMP undersøgelse på den laterale buegang.

Resultaterne præsenteres og diskuteres.

Rhinologi

## A cadaveric study of the ethmoidal arteries: Is the 24-12-6 mm rule valid?

ULRIK A FELDING <sup>(1)</sup>, K KARNOV <sup>(1)</sup>, A CLEMMENSEN <sup>(2)</sup>, C THOMSEN <sup>(3)</sup>, TA DARVANN <sup>(4)</sup>, C VON BUCHWALD <sup>(1)</sup>, J TRANUM-JENSEN <sup>(2)</sup>

1 Department of Otorhinolaryngology - Head and Neck Surgery & Audiology, Rigshospitalet, Copenhagen University Hospital

2 Department of Cellular and Molecular Medicine, University of Copenhagen

3 Department of Radiology, Rigshospitalet, Copenhagen University Hospital

4 3D Craniofacial Image Research Laboratory

(School of Dentistry, University of Copenhagen; Copenhagen University Hospital Rigshospitalet; and Department of Applied Mathematics and Computer Science, Technical University of Denmark) Copenhagen.

Department of Oral and Maxillofacial Surgery, Copenhagen University Hospital Rigshospitalet, Denmark

### Introduction:

The 24-12-6 mm rule is used globally to describe mean distances from the anterior lacrimal crest to the anterior and posterior ethmoidal foramina (AEF and PEF) and optic canal (OC). Safe orbital surgery depends on precise knowledge of the location of these landmarks to prevent iatrogenic damage of the ethmoidal arteries. However, despite the widespread use of the 24-12-6 mm rule, studies have shown a large interindividual range of distances to the ethmoidal arteries. We hypothesize that this large variation in the distances is due to a positive correlation with the length of the orbit.

### Materials and Methods:

Fifty intact orbits from 25 Caucasian cadavers were exenterated and examined. Additionally, high-resolution CT-scans of 48 orbits from 24 other Caucasian non-exenterated cadavers were examined. Distances were measured from four different anterior landmarks to the AEF and PEF and the OC.

### Results:

All distances to the arteries were positively correlated with the corresponding distances to the OC. Distances to the ethmoidal arteries on CT-images correlated well with direct measurements and may be used in a clinical setting.

### Conclusion:

The distance to the ethmoidal arteries is positively correlated to the length of the orbit. Thus, iatrogenic damage to the arteries is best avoided by measuring the distances in each individual before surgery, thus steering clear of the 24-12-6 mm rule.

1. Forfatters email: [ulrikfelding@gmail.com](mailto:ulrikfelding@gmail.com)

## Flavour klinikken, Holstebro

ALEXANDER FJÆLDSTAD

Øre- Næse- Halsafdelingen  
Holstebro Sygehus  
Hospitalsenhed Vest

Forskningen indenfor lugte- og smagssansen har for alvor taget fart de forgangne to årtier, hvilket har været medvirkende til at den kliniske udredning af nedsat lugte-/smagssans har fået øget fokus. Hovedparten af patienter der klager over nedsat smagssans har reelt en påvirket lugtesans - og hovedparten af patienter med nedsat lugtesans har en tilgrundliggende sino-nasal årsag til deres hyposmi/anosmi, mens kun cirka en fjerdedel af årsagerne findes mere centralt. Derfor ligger en vigtig del af udredningen og behandlingen hos ørelægerne, men når en oplagt sino-nasal årsag ikke kan findes, går udredningen ofte i stå. Derfor er Flavour Klinikken etableret som et mere specialiseret tilbud når sansetabet persisterer trods effektiv behandling af fx kronisk rhinosinuitis. Fokus for Flavour Klinikken er derfor at få diagnosticeret og kortlagt patienterne med persisterende lugte-/smagssans forstyrrelser af ukendt årsag samt at initiere behandling når dette er muligt. Oplægget vil derfor fokusere på indholdet af flavour klinik udredningen samt enkelte cases herfra.

1. forfatters e-mai: alexfjae@rm.dk

# Laryngologi

## Elongering af a. carotis interna er associeret med recurrensparese

JENS MAIER <sup>(1)</sup>, H GLAD <sup>(2)</sup>

(1) Radiologisk afdeling Køge

(2) ØNH afdeling Køge

### Introduktion

Formålet med studiet er at undersøge om elongation af A carotis interna kan medføre stemmebåndsparese ved at påvirke N recurrens fibre i N vagus. Konveksiteten af en elongeret A carotis kan ligge retropharyngealt, eller kan pege i lateral retning, hen imod N vagus som forløber posteriort i karskeden mellem A carotis og V iugularis.

### Metode

Der blev gennemgået CT scanninger af 32 patienter med idiopatisk stemmebåndsparese (I), 31 patienter med stemmebåndsparese af kendt årsag (K), og 45 kontroller uden parese (N). Karrene blev kategoriseret som lige eller slyngtet vha. et visuelt skøn. N vagus er ej synlig med almindelig CT. Som indirekte tegn på mulig påvirkning af N vagus blev der vurderet om den elongerede A carotis imprimerer i V iugularis' lumen. Diskrete impressioner medførende en lumenreduktion af V iugularis på skønsmæssigt <10% blev ikke regnet med.

### Resultater

Et slyngtet forløb af A carotis interna blev fundet i hhv. 75% (I), 78%(K) og 64%(N) af karrene (n.s.), og findes hyppigst bilateralt ( $p < 0,05$ , chi2 test). Impression i V iugularis blev fundet i hhv. 16 % (I) og 10% (K og N) af karrene (ingen signifikant forskel; chi2 test). I subgruppen af patienter med idiopatisk parese OG impression i V iugularis på en eller begge sider (n=7) blev der fundet 7 impressioner på den paretiske side og 3 impressioner på den ikke-paretiske side ( $p=0,035$ ; Fisher's exact test).

### Diskussion

En del af stemmebåndspareser som aktuelt kategoriseres som idiopatiske kan være følge af neurovaskulær påvirkning forårsaget af en elongeret A carotis.

1. Forfatters email: jefm@regionsjaelland.dk



## The impact of voice impairment after thyroidectomy on quality of life. A prospective cohort study

JESPER R SØRENSEN <sup>(1)</sup>, H DØSSING <sup>(1)</sup>, SJ BONNEMA <sup>(2)</sup>, L HEGEDÜS <sup>(2)</sup>, T PRINTZ <sup>(1)</sup>, AM GRØNTVED <sup>(1)</sup> AND C GODBALLE <sup>(1)</sup>

1)Department of ORL Head & Neck Surgery, Odense University Hospital

2)Department of Endocrinology and Metabolism, Odense University Hospital

### **Introduction:**

To assess the impact of voice and vocal fold changes (VVFC) after thyroidectomy on disease specific quality of life (QoL).

### **Methods:**

Prospective cohort study (inclusion period: 18 months, ending April-2016) with six months follow-up of patients with nodular goiter undergoing thyroidectomy without vocal fold disease/impairment. VVFC were defined as objective laryngeal abnormalities and a reduced maximum frequency (> five semitones) three weeks after surgery. The VVFC assessments were conducted before, three weeks, and six months after surgery using videostroboscopy, voice range profile, voice handicap index, and other measures. Simultaneously, a disease-specific QoL questionnaire (ThyPRO) was administered, including an additional assessment three months after surgery.

### **Results:**

Sixty-five patients were included with nine lost to follow-up, leaving 56 patients who completed all examinations. After surgery 8 patients (14%) had VVFC. No difference in QoL was demonstrated between patients with or without VVFC at baseline and three weeks after surgery. However, three months after surgery patients with VVFC had more goiter symptoms, hyper- and hypothyroid symptoms, tiredness, cognitive complaints, impaired daily life, cosmetic complaints (all above:  $p=0.01$ ), emotional susceptibility ( $p<0.047$ ), and decreased overall QoL ( $p=0.001$ ) compared to patients without VVFC. At six months both groups improved in QoL from baseline, but the group with VVFC persisted in having more goiter symptoms ( $p=0.005$ ), cognitive complaints ( $p=0.04$ ), and impaired sex-life ( $p=0.03$ ) than patients without VFC.

### **Discussion:**

A significant proportion of patients undergoing thyroidectomy have postsurgical VVFC. This is associated to a reduced quality of life. These patients may benefit from vocal rehabilitation after surgery.

1. Forfatters email: [jesper.roed.sorensen@rsyd.dk](mailto:jesper.roed.sorensen@rsyd.dk)

## Voice, respiration and brain regulation, a review

SANILA MAHMOOD, BH AKRAM, M PEDERSEN

Praksis øre næse hals. Østergade 18, 1, København

This study examines how voice, respiration and brain regulation are connected. It observes how the anatomical mechanisms of respiration are connected to the physiological mechanisms. In this study, a British Library London search was made. For the latest 5 years 32 references were found, but no articles were found that covered the subject. Further research, restricted to respiration, was made through the database PubMed. Few relevant articles were found. This search shows that the area has not been a major subject and further research is necessary.

Especially the pre-Bötzinger complex's influence on the rhythmogenesis of respiration is of interest. The pre-Bötzinger complex is situated in the brain stem, where the whole respiratory center is located. Respiration and voicing is connected to each other, as breathing control is very important to carry out precise control of vocal fold movement. Furthermore, certain parts of the brain show functional connections both when carrying out controlled breathing and pronouncing syllables. The aspects thereof are discussed, related also to voice therapy.

1. Forfatters email: [sanila\\_1991@hotmail.com](mailto:sanila_1991@hotmail.com)

# Hoved- og halskirurgi

## Kirurgiske resultater efter parathyreoidektomi

LARS ROLIGHED, VE NIELSEN, T KJÆRGAARD, GO JEPPESEN, S SCHYTTE

Øre, Næse- og Halskirurgisk Afdeling, Aarhus Universitetshospital

### **Introduktion:**

Operationer for primær hyperparathyroidisme (PHPT) har traditionelt været i flere forskellige specialer. Efter samling af parathyreoidea kirurgien i Aarhus har vi ønsket at evaluere og fremlægge resultaterne af operationerne.

### **Metode:**

Inkludering af alle operationer for PHPT i de første 16 måneder, hvor operationerne kun har været udført på ØNH, Aarhus.

### **Resultater:**

I alt er der opereret 314 patienter med PHPT i perioden fra 01.03.15 - 30.06.16. Desuden blev der opereret 27 patienter med tertiær hyperparathyroidisme. For PHPT var 241 af patienterne kvinder (77%) og alderen mellem 18 og 89 år. Andelen af kurerede patienter var 93,6%. Andelen med tilfredsstillende resultat var 98,4%. Patienter med tidligere hals operation og arvelig PHPT udgjorde hhv. 17 (5,4%) og 13 (4,1%). Samtidig thyreoidea resektion blev udført ved 43 patienter (13,7%). I forløbet var der kortvarig recurrens påvirkning ved 6 patienter (1,9%) og permanent recurrens parese ved 2 patienter (0,6%). Hypoparathyroidisme og persisterende PHPT blev registreret ved hhv. 5 (1,6%) og 20 (6,4%) patienter. Efter fokuserede indgreb havde 6 af 133 patienter persisterende PHPT (4,5%). Ved opdeling af forløbet i 4 perioder af 4 måneder, ses der stigende volumen uden øgning i antallet af komplikationer.

### **Diskussion:**

Parathyreoidea operationer er specielle indgreb, der kræver et højt volumen og nogen erfaring. Hovedparten af indgrebene er ukomplicerede i erfarne hænder, mens en mindre gruppe kan være vanskelige at håndtere. Samlet set er det kirurgiske volumen højt, andelen af kurerede patienter er særdeles tilfredsstillende og hyppigheden af komplikationer er meget lav.

1. forfatters e-mail: larsroli@rm.dk

## Quality of life in survivors of oropharyngeal cancer: a systematic review and meta-analysis of 1366 patients

SANNE HØXBROE MICHAELSEN<sup>1</sup>, CG LARSEN<sup>1</sup>, JH MICHAELSEN<sup>1</sup>, J FRIBORG<sup>2</sup>, C VON BUCHWALD<sup>1</sup>

1. Department of Otorhinolaryngology, Head and Neck Surgery and Audiology, University Hospital Rigshospitalet, Blegdamsvej 9, 2100 Copenhagen Ø, Denmark

2. Department of Oncology, University Hospital Rigshospitalet, Blegdamsvej 9, 2100 Copenhagen Ø, Denmark

### **Introduction:**

Human papillomavirus (HPV)-associated oropharyngeal cancer (OPC) is rapidly increasing in incidence and has a favourable prognosis compared to HPV-negative disease. Current combined therapies include significant risks of morbidity for the growing group of survivors. This systematic review and meta-analysis investigates how treatment affects quality of life (QoL) in survivors of oropharyngeal cancer.

### **Method:**

PubMed, EMBASE, and the Cochrane Library were systematically searched for all studies reporting patient-assessed QoL at least one year after treatment for OPC. In a meta-analysis, weighted average QoL scores from the four most commonly utilised QoL instruments were compared to baseline and reference group scores using the concept of minimal clinically important difference. The meta-analysis included data from 1366 patients from 25 studies and 12 countries.

### **Results:**

The European Organization for Research and Treatment of Cancer Quality of Life Questionnaire Core-30 (EORTC QLQ-C30) was answered by 704 patients, 644 patients answered the EORTC QLQ Head and Neck-35 (H&N-35), 474 patients answered the University of Washington Quality of Life Questionnaire (UWQOL), and 381 patients answered the M. D. Anderson Dysphagia Inventory (MDADI). Moderate to large clinically important deteriorations in QoL were found in the domains dry mouth and sticky saliva for the EORTC QLQ-H&N35, saliva, chewing, swallowing, speech, taste, appearance and shoulder for the UW-QOL, and the global, physical, and emotional subscales for the MDADI.

### **Discussion:**

In conclusion, survivors of OPC face clinically important deteriorations in QoL that most markedly centre on xerostomia, dysphagia and chewing. These ailments indicate a potential for improvement in patient management.

1. Forfatters e-mail: sannedenmark@gmail.com

## Human papillomavirus genotyper og patient karakteristika i den største kohorte af synkrone, bilaterale tonsilcancerer

CAMELIA NAMI SABER<sup>1</sup>, C GRØNHØJ<sup>1</sup>, DH JENSEN<sup>1</sup>, C NØRREGAARD<sup>1</sup>, A CARLANDER<sup>1</sup>, E GARNÆS<sup>1</sup>, K KISS<sup>2</sup>, L SPECHT<sup>3</sup>, AND C BUCHWALD<sup>1</sup>

1. Øre-næse-halskirurgisk og Audiologisk Klinik, Blegdamsvej 9, 2100 København Ø

2. Patologisk afdeling, Rigshospitalet.

3. Onkologisk afdeling, Rigshospitalet.

### Introduction

The incidence of oropharyngeal squamous cell carcinoma (OPSCC) is increasing, but no studies have examined the incidence of synchronous, bilateral tonsillar squamous cell carcinomas (BiTSCCs) in a population-based, consecutive cohort of OPSCCs. We therefore examined the incidence of as well as patient and tumor characteristics in all BiTSCCs in the Eastern part of Denmark between 2000 and 2014.

### Methods

We identified all patients diagnosed with TSCC in Eastern Denmark during a 15-year period to identify synchronous BiTSCCs. Tumors were assessed for p16 overexpression, presence of HPV-DNA using PCR, and were HPV-genotyped by next-generation sequencing. Patient and tumor data were gathered from medical records and the Danish Pathology Registry.

### Results

Of the total of 1,119 TSCCs diagnosed in Eastern Denmark from 2000 to 2014, we identified 12 BiTSCCs of which ten presented as a cancer of unknown primary (CUP) in the neck. Eleven cases were bilaterally positive for HPV with HPV16 being the predominant subtype (n=9) although the subtypes HPV33 and HPV35 were also identified (n=2).

### Conclusion

BiTSCCs were most often diagnosed as part of the diagnostic work-up for CUP in the neck. The most common HPV-genotype involved was HPV16, although we report the novel finding that BiTSCCs can be infected by different HPV-genotypes, and report the first case of an HPV-negative BiTSCC. Furthermore, we found a large increase in the incidence of BiTSCCs after 2012, where a total pathological examination of tonsil tissues became routine, suggesting that BiTSCCs might be underdiagnosed.

1. Forfatters email: camelia.s@hotmail.com

## Circulating human papillomavirus DNA as a surveillance tool in head and neck squamous cell carcinoma: a systematic review and meta-analysis

KRISTINA JENSEN\*, C. GRØNHØJ \*, D. JENSEN AND C. VON BUCHWALD

\*DELTA FØRSTE FORFATTERSKAB

Øre, næse og halskirurgisk og Audiologisk klinik, Rigshospitalet, Københavns Universitet, Danmark

### **Introduction.**

The incidence of human papillomavirus-induced (HPV+) head and neck squamous cell carcinoma (HNSCC) i.e. especially oropharyngeal cancers (OPSCC) is increasing and a significant proportion of patients encounter disease progression. By systematically reviewing the literature, we aimed to assess usefulness of circulating HPV-DNA as biomarker for disease progression in patients with HNSCC.

### **Methods.**

PubMed, Embase and the Cochrane Library were systematically searched for articles published in English from January 1980 to June 2016. Search terms used were related to HPV, cancer sites, blood-based biomarkers and terms for specific use settings. A meta-analysis of HPV-DNA as a diagnostic test for recurrence by means of a hierarchical summary receiver operating curve (HSROC) model was performed.

### **Results.**

Six studies (n=677) examining circulating HPV-DNA in patients with HNSCC were identified. Four studies (n=346) performed pre- and posttreatment blood samples. The pooled sensitivity and specificity in detecting relapse was estimated to be 53% (95% CI: 30-75%) and 98% (95% CI: 90-99%) respectively. The area under the curve (AUC) of the summary HSROC was 0.90.

### **Conclusion.**

Circulating HPV-DNA is a promising tool for surveillance in patients with HPV related HNSCC i.e. OPSCC and has a high specificity. By recent technical advances and by increasing follow-up blood samples the sensitivity could be improved.

Forfatters email: kristinakvistjensen@gmail.com

## Langtidsresultater efter endoskopisk behandling for Zenker divertikel med LigaSure™ 5 mm instrument

PREBEN HOMØE<sup>1</sup>, MF ANDERSEN<sup>1</sup>, W TROLLE<sup>2</sup>, K ANTHONSEN<sup>3</sup>, HU NIELSEN<sup>3</sup>

1. Øre-næse-hals og Kæbekirurgisk afdeling, Sjællands Universitetshospital, Køge
2. Øre-næse-halskirurgisk afdeling, Nordsjællands Universitetshospital, Hillerød
3. Øre-næse, hoved-halskirurgisk og Audiologisk afdeling, Rigshospitalet

### Formål:

At undersøge langtidsresultaterne og tilfredshed hos patienter med Zenker divertikel (ZD) ved anvendelse af en nyere metode med LigaSure™ 5 mm instrument og sammenligne med resultater ved anvendelse af mere traditionelle teknikker.

### Deltagere og Metode:

Mellem december 2011 og august 2013, har vi behandlet i alt 23 ZD patienter med endoskopisk kirurgi og LigaSure™ teknik. Vi har foeretaget retrospektiv evaluering af journaler og udført en longitudinal spørgeskemaundersøgelse med benyttelse af et standardiseret spørgeskema som blev sendt til alle patienter. Spørgsmålene angik gener og klager efter operationen og blev vurderet vjh af visual analog skala (VAS). Spørgeskemaet udsendtes minimum 12 måneder efter den kirurgiske procedure (gennemsnit: 22 måneder, spændvidde: 12-32 måneder). Besvarelses-raten var 91%. Gennemsnitsalderen var 69 år (spændvidde: 37-89 år).

### Resultater:

Den overordnede tilfredshed med det endelige kirurgiske resultat var otte på VAS (spændvidde 0-10: hvor 10 var særdeles tilfreds og 0 særdeles utilfreds, 25-75% kvartiler: 7-10), selvom flere patienter havde fortsatte symptomer indenfor det første år. Otte patienter (38%) rapporterede slet ingen klager.

### Konklusion:

Vore resultater peger på at endoskopisk behandling af ZD med LigaSure™ 5 mm instrumentet er en minimal invasiv, hurtig og sikker procedure med solide langtids resultater og symptom lindring samt høj patienttilfredshed. Vi finder metoden kan udføres på lige fod med de traditionelle endoskopiske teknikker og vi har indført denne procedure som en af flere standard teknikker på vores afdelinger.

1. Forfatters email: [prho@regionsjaelland.dk](mailto:prho@regionsjaelland.dk)



## Head-to-head comparison of chest x-ray/head and neck MRI, chest CT/head and neck MRI, and 18 F-FDG-PET/CT for detection of distant metastases and synchronous cancer in oral, pharyngeal, and laryngeal Cancer

MAX ROHDE <sup>(1)</sup>, AL NIELSEN <sup>(2)</sup>, J JOHANSEN <sup>(3)</sup>, JA SØRENSEN <sup>(4)</sup>, N NGUYEN <sup>(5)</sup>, A DIAZ <sup>(5)</sup>, MK NIELSEN <sup>(5)</sup>, JT ASMUSSEN <sup>(5)</sup>, JM CHRISTIANSEN <sup>(5)</sup>, O GERKE <sup>(2)</sup>, A THOMASSEN <sup>(2)</sup>, A ALAVI <sup>(6)</sup>, PF HØI-LUND-CARLSEN <sup>(2)</sup>, C GODBALLE <sup>(1)</sup>

1. Department of ORL - Head & Neck Surgery, Odense University Hospital
2. Department of Nuclear Medicine, Odense University Hospital
3. Department of Oncology, Odense University Hospital
4. Department of Plastic Surgery, Odense University Hospital
5. Department of Radiology, Odense University Hospital
6. Department of Radiology, Hospital of the University of Pennsylvania, Philadelphia, USA.

### **Purpose:**

To determine the detection rate of distant metastasis and synchronous cancer comparing clinical imaging strategies based on a) chest X-ray + head and neck magnetic resonance imaging (CXR/MRI) and b) chest computed tomography + head and neck MRI (CCT/MRI) to c) 18F-fluoro-deoxy-glucose-positron emission tomography/computed tomography (PET/CT) upfront in the diagnostic work-up of patients with oral, pharyngeal, or laryngeal cancer.

### **Methods:**

A prospective cohort study based on paired data. Consecutive patients with histologically verified primary head and squamous cell carcinoma (HNSCC) from September 2013 to March 2016 were offered participation. Included patients underwent a) CXR/MRI and b) CCT/MRI and c) PET/CT. Imaging interpretation was performed blind by separate teams of experienced nuclear physicians and/or radiologists. The true detection rate (TDR) of distant metastasis and synchronous cancer was assessed for CXR/MRI, CCT/MRI, and PET/CT.

### **Results:**

A total of 307 patients were included. CXR/MRI correctly detected 3 (1%) patients with distant metastasis, CCT/MRI detected 11 (4%) patients, and PET/CT detected 18 (6%) patients. The absolute differences of 5% and 2%, respectively, were statistically significant in favor of PET/CT. Also, PET/CT correctly detected 25 (8%) synchronous cancers, which was significantly more than CXR/MRI (3 patients, 1%) and CCT/MRI (6 patients, 2%). TDR of distant metastasis and/or synchronous cancer with PET/CT was 13% (40 patients), which was significantly higher than 2% (6 patients) for CXR/MRI and 6% (17 patients) for CCT/MRI.

### **Conclusions:**

PET/CT demonstrated a significantly higher detection rate of distant metastasis and/or synchronous cancer compared to CXR/MRI or CCT/MRI in patients with HNSCC.

1. Forfatters email: max.rohde@rsyd.dk

## Nonanaplastic follicular cell-derived thyroid carcinoma: Mitosis and necrosis in long-term follow up

DANIEL BRÄUNER SKANSING<sup>(1)</sup>; SC LONDERO<sup>(1)</sup>; P ASSCHENFELDT<sup>(2)</sup>; SR LARSEN<sup>(3)</sup>; C GODBALLE<sup>(1)</sup>

1) Department of ORL Head & Neck Surgery, Odense University Hospital, Odense, Denmark

2) Department of Pathology, Aalborg University Hospital, Aalborg, Denmark

3) Department of Pathology, Odense University Hospital, Denmark

### Objective:

Nonanaplastic follicular cell-derived thyroid carcinoma (NAFCTC) includes differentiated- (DTC) and poorly differentiated thyroid carcinoma (PDTC). DTC has an excellent prognosis, while PDTC is situated between DTC and anaplastic carcinomas. Short-term studies suggest that PDTC patients diagnosed only on tumor necrosis and/or mitosis have a prognosis similar to those diagnosed according to the TURIN proposal. The purpose of this study was to evaluate prognosis for NAFCTC based on long-term follow-up illuminating the significance of tumor necrosis and mitosis.

### Methods:

A cohort of 225 patients with NAFCTC was followed more than 20 years. Age, sex, distant metastasis, histology, tumor size, extrathyroidal invasion, lymph node metastasis, tumor necrosis and mitosis were examined as possible prognostic factors.

### Results:

Median follow-up time for patients alive was 28 years (range, 20-43 years). Age, distant metastasis, extrathyroidal invasion, tumor size, tumor necrosis and mitosis were independent prognostic factors in multivariate analysis for overall survival (OS). In disease specific survival (DSS) age was not significant. Using only necrosis and/or mitosis as criteria for PDTC the 5-, 10- and 20-year OS for DTC was 87%, 79% and 69%, respectively. In DSS it was 95%, 92% and 90%. For PDTC the 5-, 10- and 20-year OS was 57%, 40% and 25%, respectively. In DSS it was 71%, 55% and 48%.

### Conclusion:

Tumor necrosis and mitosis are highly significant prognostic indicators in analysis of long time survival of nonanaplastic follicular cell-derived thyroid carcinoma indicating that a simplification of the actually used criteria for poorly differentiated carcinomas may be justified.

1. Forfatters email: skansing@dadlnet.dk

## Prognostic factors for survival after salvage total laryngectomy following radiotherapy or chemoradiation failure: a 10-year retrospective longitudinal study in Eastern Denmark

NILLE WULFF<sup>(1)</sup>, E ANDERSEN<sup>(2)</sup>, C KRISTENSEN<sup>(3)</sup>, C SØRENSEN<sup>(1)</sup>, B CHARABI<sup>(1)</sup> AND P HOMØE<sup>(1,4)</sup>

Department of Otolaryngology, Head & Neck Surgery and Audiology(1) and Oncology(3), Rigshospitalet, University Hospital of Copenhagen, Denmark.

Department of Oncology, Herlev Hospital, University Hospital of Copenhagen, Denmark(2).

Department of Otorhinolaryngology and Maxillofacial Surgery, Zealand University Hospital, Køge, Denmark(4).

### **Introduction:**

The primary aims were to determine the rates of and prognostic factors for overall survival, disease specific survival and disease free survival following salvage total laryngectomy.

### **Methods:**

Retrospective longitudinal study of 142 patients in Eastern Denmark undergoing salvage total laryngectomy for squamous cell carcinoma of the larynx or hypopharynx.

### **Results:**

Five-year overall survival, disease specific survival and disease free survival were 37.7%, 54.9% and 55.3%, respectively. N classification at primary diagnosis, lymph node excision and postoperative complications within one year after salvage total laryngectomy were prognostic factors for shorter overall survival, disease specific survival and disease free survival. Residual tumor/recurrence was negatively associated with overall survival, close or involved resection margins was negatively associated with disease specific survival and second primary cancer was associated with longer disease specific survival and disease free survival. Nine percent of all patients had residual tumor and 33.8% developed a recurrence.

### **Discussion:**

Our overall survival, disease specific survival and disease free survival findings are in accordance with previous studies. With the purpose of identifying recurrent tumor, we suggest extra attention being given to patients with higher N classification and need for lymph node excision during salvage total laryngectomy along with use of frozen sections. The high number of patients with recurrence within one year after salvage total laryngectomy occurred although thorough and regular follow-up visits were performed.

1. Forfatters email: nbwulff@gmail.com

## Thyroidectomy improves tracheal anatomy and airflow in patients with nodular goiter. A prospective cohort study

JESPER ROED SØRENSEN <sup>(1)</sup>, JF LAURIDSEN <sup>(2)</sup>, H DØSSING <sup>(1)</sup>, N NQUYEN <sup>(3)</sup>, L HEGEDÜS <sup>(4)</sup>, SJ BONNEMA <sup>(4)</sup>, AND C GODBALLE <sup>(1)</sup>

- 1) Department of ORL Head & Neck Surgery, Odense University Hospital
- 2) Department of Nuclear Medicine, Odense University Hospital
- 3) Department of Radiology, Odense University Hospital
- 4) Department of Endocrinology and Metabolism, Odense University Hospital

### Background:

A large goiter may cause compression of the trachea and lead to respiratory insufficiency. We aimed at investigating the effects of thyroidectomy on tracheal anatomy and airflow in patients with benign nodular goiter, employing a prospective observational study.

### Methods:

Magnetic resonance images (MRI) of the neck and respiratory flow-volume curves, including both in- and expiration, were performed prior to and six months following surgery. The evaluated tracheal dimensions included the smallest cross-sectional area of the trachea (SCAT), tracheal narrowing, and tracheal deviation. Effect sizes (ES) were calculated as mean change divided by standard deviation at baseline. ES of 0.2-0.5 were defined as small, 0.5-0.8 as moderate, and values >0.8 as large.

### Results:

Sixty-five patients completed all examinations. Median goiter volume was 58 mL (range, 14-642 mL) before surgery with surgical removal of median 43 g (range, 8-607 mL). Six months post-surgery, tracheal narrowing and deviation were diminished by median 26% (ES=0.67), and 33% (ES=0.73), respectively, while SCAT increased by 17% (ES=0.61). Correspondingly, each 10% decrease in goiter volume resulted in an increase of 6.0% in SCAT ( $p<0.001$ ), and a decrease of 1.0% in tracheal narrowing ( $p<0.001$ ). Concomitantly, a small improvement was seen in forced inspiratory flow at 50% of forced vital capacity (FIF50%) (ES=0.32).

### Discussion:

In patients with symptomatic benign nodular goiter, thyroidectomy leads to substantial improvement in tracheal compression, but only minor improvements in tracheal airflow. This information is pertinent when counselling patients before choice of treatment.

1. Forfatters email: [jesper.roed.sorensen@rsyd.dk](mailto:jesper.roed.sorensen@rsyd.dk)

## Is parotid saliva sterile on entry to the oral cavity?

STINE A SCHRØDER <sup>(1)</sup>, A BARDOW <sup>(2)</sup>, S EICKHARDT-DALBØGE <sup>(3)</sup>, H K JOHANSEN <sup>(4)</sup>, P HOMØE <sup>(5)</sup>

1. Department of Otorhinolaryngology, Nordsjaellands University Hospital, Hillerød
2. Department of Oral Medicine, Dental School of Copenhagen, University of Copenhagen
3. Costerton Biofilm Center, Department of Immunology and Microbiology, Faculty of Health and Medical Sciences, University of Copenhagen
4. Department of Clinical Microbiology, Rigshospitalet, University Hospital of Copenhagen
5. Department of Otorhinolaryngology and Maxillofacial Surgery, Zealand University Hospital, Køge

### **Introduction:**

Saliva collected from the oral cavity contains >10<sup>8</sup> bacteria per ml but it is unknown if saliva is sterile when collected directly from the ducts of the major salivary glands. The objective of this study was to investigate if parotid saliva is sterile on entry to the oral cavity and thus prior to contamination by oral bacteria.

### **Method:**

Forty healthy volunteers were included in sterile parotid saliva collection. Parotid saliva was collected using a sterile Lashley cup, placed over the papilla of the Stensen's duct as well as sterile tubes and syringes for collection. All collections were followed by collection of a positive control sample where some of the sterile obtained parotid saliva had been exposed to the contralateral mucosal membranes. All samples, parotid saliva as well as the positive controls, were cultivated and 10 randomly selected parotid saliva samples underwent polymerase chain reaction (PCR) analyses.

### **Results:**

In 33 of 40 parotid saliva samples there were no cultivable bacteria, whereas bacteria were cultivated in all positive control samples. In eight of 10 PCR samples no bacterial DNA was detected. The most frequent bacteria in the remaining non sterile parotid saliva samples and positive control samples were non-haemolytical streptococci and the coagulase negative staphylococci.

### **Discussion:**

The procedure for obtaining sterile saliva was complex and we suggest that the bacteria positive samples were due to contamination. The present study indicates that parotid saliva is sterile on entry to the oral cavity.

1. Forfatters email: [stine.eva.attrup.schroeder@regionh.dk](mailto:stine.eva.attrup.schroeder@regionh.dk)

## The compensatory enlargement of the remaining thyroid lobe following hemithyroidectomy is small and has no impact on symptom relief

FREDERIK S PUSTELNIK\*, C GRØNBÆK\*, H DØSSING, SJ BONNEMA, L. HEGEDÜS, C. GODBALLE, JR SØRENSEN

\* Contributed equally to the manuscript and share the first authorship

1: Department of ORL Head & Neck Surgery, Odense University Hospital, J.B. Winsløvs vej 4, 5000 Odense C, Denmark

### Background:

According to previous studies, hemithyroidectomy results in 25-30% hypertrophy of the remaining thyroid lobe. However, this estimate is inaccurate due to imprecise methods, high inter- and intraobserver variability, or lack of blinding of the measurements. It is unknown whether growth of the remaining hemi-thyroid interferes with the improvement in symptoms after surgery for goiter. We aimed to quantify the compensatory enlargement of the remaining thyroid lobe in 44 patients undergoing hemithyroidectomy, and to evaluate whether this growth interferes with the relief in goiter symptoms.

### Methods:

Outcomes were measured before and six months after hemithyroidectomy. Thyroid volumes were determined using Magnetic Resonance Imaging (MRI) and goiter symptoms were evaluated by the 0-100 points Thyroid specific Patient-Reported-Outcome (ThyPRO) questionnaire. The inclusion period was November 1st 2014 to April 30th 2016. Thyroid volumes were measured by two independent, blinded observers to reduce risk of biased observations. Inter- and intraobserver variability were visualized by Bland-Altman plots. Paired t-test was used for comparing goiter symptoms before and after surgery. Linear mixed model was used for analyzing correlations between symptom relief and postoperative thyroid growth.

### Results:

After hemithyroidectomy, the remaining thyroid lobe was enlarged by mean 1.8 mL (95% CI [1.6;2.1],  $p < 0.001$ ), corresponding to 17% (95% CI [11.6;21.7]). Goiter symptoms improved by 27.4 points (95% CI [21.2;33.7],  $p < 0.0001$ ) after surgery, without being affected by the compensatory thyroid growth.

### Discussion:

Using blinded measurements of the remaining hemi-thyroid we found smaller postoperative thyroid growth compared to previous studies. The postoperative compensatory hypertrophy had no impact on symptom relief.

1. Forfatters email: casper.gronbek@gmail.com

## Genetic Characterization of Adenoid Cystic Carcinoma of the Minor Salivary Glands: A Potential Familial Occurrence in First-Degree Relatives

HANI I CHANNIR <sup>(1)</sup>, T VAN OVEREEM HANSEN <sup>(2)</sup>, S ANDREASEN <sup>(1)</sup>, CW YDE <sup>(2)</sup>, K KISS <sup>(3)</sup>, BW CHARABI <sup>(1)</sup>

1. Øre-næse-halskirurgisk og Audiologisk Klinik, Rigshospitalet
2. Enhed for Genomisk Medicin, Rigshospitalet
3. Patologifdelingen, Rigshospitalet

### **Introduction:**

Adenoid Cystic Carcinoma (AdCC) is a malignant salivary gland tumor. To date, no cases of AdCC in first-degree relatives have been reported in the literature.

### **Methods and Results:**

We present a 50-year-old female (Case 1) and this patients' father (Case 2), both of whom were diagnosed with AdCC of the minor salivary glands. Histology of Case 1 demonstrated a tubulocribriform AdCC whereas Case 2 primarily was an AdCC of solid type.

Both cases harbored the MYB-NFIB gene fusion as demonstrated by FISH and RNA-sequencing. After filtering and selection of putative deleterious variants, whole exome sequencing identified 18 germline variants in common between Case 1 and Case 2. However, none of the variants were associated with AdCC or other head and neck cancers.

### **Discussion:**

To our knowledge, we present the first potential case of familial AdCC. The presented genetic data may contribute to further investigations of the underlying genetic mechanisms for AdCC susceptibility.

1. Forfatters email: Hani.Ibrahim.Channir.02@regionh.dk

## Incidence and survival trends in oral cancer in Denmark between 1980 and 2014

KIRSTINE KS KARNOV <sup>A</sup>, C GRØNHØJ <sup>A</sup>, DH JENSEN <sup>A</sup>, I WESSEL <sup>A</sup>, BW CHARABI <sup>A</sup>, L SPECHT <sup>B</sup>, A KJAER <sup>C</sup>, C VON BUCHWALD <sup>A</sup>

A Department of Otorhinolaryngology, Head and Neck Surgery and Audiology, Rigshospitalet

B Department of Oncology, Rigshospitalet, University of Copenhagen.

C Department of Clinical Physiology, Nuclear Medicine & PET and Cluster for Molecular Imaging, Rigshospitalet and University of Copenhagen

### **Background:**

Oral carcinomas (OCs) make up a significant proportion of head and neck carcinomas (HNCs) and are an important cause of morbidity and mortality globally. The purpose of this population-based study was to determine trends in incidence and survival in OC in the Danish population from 1980 to 2014.

### **Methods:**

This study covered all patients registered in the nationwide Danish Cancer Registry (DCR) in the period 1980–2014. Age-adjusted incidence rate (AAIR) per 100,000 and annual percentage change (APC) were evaluated. Also, 5-year overall survival was calculated with Cox regression analysis in relation to location, gender, age, and calendar year at diagnosis.

### **Results:**

Altogether, 8,299 patients with oral cancer were identified, 5,062 (61%) of whom were males and 3,237 (39%) were females. The median age at diagnosis was 63 years. The AAIR of patients with OC increased from 1.9 per 100,000 in 1980 to 3.5 per 100,000 in 2014, and we observed a significant increase in 5-year overall survival of 12 percentage points (a relative increase of 38%) from the period 1980–1984 to 2005–2009. Women were found to have a better prognosis than men.

### **Conclusion:**

We found an unexpected increase in the age-standardised incidence of OC during the last 30 years in Denmark, and also an improvement in survival. The 5-year overall survival was significantly better in recent years even when we adjusted the analysis for relevant covariates.

1. Forfatters email: Karnov1@hotmail.com



## Calcium elektroporation af hoved-hals cancer

CHRISTINA CAROLINE PLASCHKE<sup>(1)</sup>, HH JOHANNESSEN<sup>(2)</sup>, BM FISCHER<sup>(2)</sup>, A KJÆR<sup>(2)</sup>, J GEHL<sup>(3)</sup>, I WESSEL<sup>(1)</sup>

1. Department of Otorhinolaryngology, Head & Neck Surgery and Audiology, Copenhagen University Hospital Rigshospitalet

2. Department of Clinical Physiology, Nuclear Medicine & PET and Cluster for Molecular Imaging, Rigshospitalet and University of Copenhagen

3. Center for Experimental Drug and Gene Electrotransfer, Department of Oncology, Herlev and Gentofte Hospital, University of Copenhagen

### Introduktion

Elektroporation er en behandling, der ved hjælp af elektriske pulser gør cellemembraner midlertidigt permeable, således ellers impermeable molekyler kan passere ind i cellerne. Behandlingen bliver i dag kombineret med kemoterapi (elektrokemoterapi), og er vist effektivt på kræftsvulster i hud og slimhinde.

I dette forsøg kombineres elektroporation med calcium i stedet for kemoterapi. Celleforsøg, dyreforsøg og et pågående klinisk studie på hudtumorer har vist fine resultater med calcium elektroporation uden bivirkninger. Vi ønsker at teste calcium elektroporation på slimhindetumorer hos palliative hoved-hals cancerpatienter, for at dokumentere sikkerhed og tumorrespons.

### Metode

Studiet er et fase I klinisk forsøg, hvor der samlet inkluderes 6 patienter med recidiv af hoved-hals cancer uden yderligere kurative behandlingsmuligheder. Behandlingen foregår i general anæstesi med injektion af calciumchlorid og efterfølgende elektroporation. Primære effektmål er sikkerhed målt ved CTCAE, calcium-blodprøver og smerte score. Sekundære effektmål er tumorrespons målt på PET-MR skanning, biopsier, klinisk foto samt livskvalitet spørgeskemaer (EORTC QLQ-C30 og QLQ-H&N35).

### Resultat

4 patienter er foreløbigt inkluderet og behandlet, hvoraf 3 er nået til skannings evaluering. Der er ikke registreret nogen alvorlige bivirkninger (SAE) efter CTCAE og ingen tilfælde af hypercalciæmi. Tumorrespons har på PET-MR vist 1 patient med partiel remission (PR) og 2 patienter med stabil sygdom (SD).

### Diskussion

Foreløbige resultater demonstrerer at calcium elektroporation kan udføres uden alvorlige bivirkninger eller hypercalciæmi. Ved fortsatte positive resultater vil behandlingen kunne sammenlignes med elektrokemoterapi, for at vurdere om calcium muligvis kan erstatte kemoterapien ved lokal tumorbehandling med elektroporation.

1. Forfatters email: caroline@dadlnet.dk

## Elektrokemoterapi af hoved-hals cancer recidiv hos inoperable patienter som har modtaget strålebehandling (DAHANCA 32)

CHRISTINA CAROLINE PLASCHKE<sup>(1)</sup>, HH JOHANNESSEN<sup>(2)</sup>, RH HANSEN<sup>(3)</sup>, HW HENDEL<sup>(4)</sup>, K KISS<sup>(5)</sup>, J GEHL<sup>(6)</sup>, I WESSEL<sup>(1)</sup>

1. Department of Otorhinolaryngology, Head & Neck Surgery and Audiology, Copenhagen University Hospital Rigshospitalet
2. Department of Clinical Physiology, Nuclear Medicine & PET and Cluster for Molecular Imaging, Rigshospitalet and University of Copenhagen
3. Department of Radiology, Copenhagen University Hospital Herlev
4. Department of Nuclear Medicine, Copenhagen University Hospital Herlev
5. Department of Pathology, Copenhagen University Hospital Rigshospitalet
6. Center for Experimental Drug and Gene Electrotransfer, Department of Oncology, Herlev and Gentofte Hospital, University of Copenhagen

### Introduktion

Elektrokemoterapi er en etableret behandling af hud-cancer og -metastaser, der fører til høje responsrater efter én behandling. Det er en lokal tumorbehandling, som benytter elektriske impulse til midlertidigt at skabe permeabilitet i cellemembranen, hvorved kemoterapi kan få adgang til cellens indre og forårsage celledød. Vi undersøger elektrokemoterapi som palliativ behandling til recidiv af hoved-hals cancer hos patienter, der er inoperable og tidligere har modtaget strålebehandling.

### Metode

Dette er et klinisk fase II studie inkluderende patienter med recidiv af hoved-hals cancer uden yderligere kurative behandlingsmuligheder. Patienterne bliver behandlet i generel anæstesi med systemisk bleomycin (15.000 IU/m<sup>2</sup>) og lokal applikation af elektriske pulser (sekvenser a 8 pulser, 100µs, 1 kV/cm mellem elektroder). Primære effektmål er tumorrespons målt efter RECIST kriterier på CT-skanninger 8 uger efter behandling. Sekundære effektmål er tumor respons på biopsier, MR- og FDG-PET-skanninger, sikkerhed og toksicitet, smerte score og livskvalitets spørgeskemaer (EORTC QLQ-C30 og QLQ-H&N35).

### Resultater

19 patienter er foreløbigt behandlet og evaluerbare for toksicitet og sikkerhed. 18 patienter er evaluerbare efter RECIST kriterierne. Af disse havde 2 (11%) fuldstændig remission (CR), 8 (44%) havde partiel remission (PR), hvilket fører til en samlet respons på 10 ud af 18 (55%). 7 (39%) patienter havde stabil sygdom (SD) og 1 (6%) i progression (PD). Smerte score ændrede sig ikke fra baseline til evaluering; kun dysfagi blev væsentligt påvirket efter behandling i CTCAE og EORTC QLQ-H&N35

### Diskussion

Elektrokemoterapi er en anvendelig, lokal kræftbehandling. I denne patientgruppe uden yderligere kurative behandlingsmuligheder til rådighed, har vi fundet en samlet tumor responsrate på 55%, med begrænsede bivirkninger.

1. Forfatters email: caroline@dadlnet.dk

## Etablering af vækstmønsteret og lokaliseringen af HPV E6/E7 onkogener i oropharyngeale planocellulære karcinomer

HANI I CHANNIR <sup>(1)</sup>, K KISS <sup>(2)</sup>, N RUBEK <sup>(1)</sup>, J ANDERSEN <sup>(2)</sup>, JBGEOGENSEN, BW CHARABI <sup>(1)</sup>, C VON BUCHWALD <sup>(1)</sup>, CB LAJER <sup>(1)</sup>

1. Øre-næse-halskirurgisk og Audiologisk Klinik, Rigshospitalet
2. Patologiafdelingen, Rigshospitalet
3. Patologiafdelingen, Aarhus Universitetshospital

### Introduktion:

Tilstedeværelsen af aktiv- og persisterende human papillomavirus (HPV) kan påvises ved metoden RNA in-situ hybridisering (RNAscope®), der betragtes som ”golden standard” inden for HPV-test. Formålet med dette studie var, at udføre en detaljeret beskrivelse af ekspresionen af HPV E6 og E7 virale onkogener i relation til vækstmønsteret af planocellulært oropharyngealt karcinom.

### Metode:

Vi indsamlede formalinfikseret og paraffinindstøbt væv fra en robotkirurgisk behandlet kohorte bestående af 26 patienter med planocellulært karcinom lokaliseret i palatine- eller linguale tonsiller, hvoraf 16 patienter havde halsmetastaser. Påvisning af HPV E6/E7 mRNA blev udført med både manuel og automatiseret farvning ved metoden RNAscope®, med anvendelse af en 7-valent højrisiko HPV-probe (HPV-typer: 16, 18, 31, 33, 35, 52 og 58). In-situ ekspresion af HPV E6/E7 mRNA blev vurderet i relation til vækstmønsteret i både primær tumorer og metastaser, herunder i tumorbvæv, dysplastisk epitel samt i omgivende vævsstrukturer.

### Resultater:

Karcinomerne i de palatine- og linguale tonsiller var karakteriseret ved at udgå fra kryptepithelet, med et non-keratiniserende vækstmønster der invaderede det lymfoide tonsilvæv. Ekspresion af HPV E6/E7 mRNA var positiv i tumorbvæv og dysplastisk epitel i 24/26 primær tumorer og i 15/16 metastaser. Der var ingen ekspresion i det normale overfladeepitel eller i de omgivende non-neoplastiske vævsstrukturer.

### Diskussion:

Dette studie viser at planocellulære karcinomer lokaliseret i de palatine- og linguale tonsiller har et karakteristisk vækstmønster og en signifikant sammenhæng med ekspresionen af de aktive HPV onkogener E6 og E7.

1. Forfatters email: Hani.Ibrahim.Channir.02@regionh.dk

## Rekonstruktion af bløddele i mundhule og svælg med lokale lapper og ikke-vitalt materiale efter tumorablation. En oversigt

THOMAS FRISCH

ØNH kirurgisk og Audiologisk klinik, Rigshospitalet

### **Introduktion:**

Mundhulens funktionelle, sociale og kosmetiske betydning gør reetablering af vævsforholdene efter ablation vigtig. Kendskab til forskellige rekonstruktive muligheder og deres begrænsning bliver derfor centralt i den tumorkirurgiske planlægning.

### **Materiale/metode:**

Overblik gives på baggrund af eksisterende litteratur og egen erfaring. Med lokale lapper menes i denne sammenhæng lapper høstet i mund og svælg.

### **Resultater:**

Valg af rekonstruktionsteknik baseres på både ablationsdefektens topografi og størrelse og den ønskede funktionelle gevinst. Hertil kommer afhængighed af det omgivende vævs muligheder for at levere den nødvendige lap, både hvad angår vævskvalitet og kvantitet. Forskellige lokale rekonstruktive teknikker gennemgås i dette perspektiv.

### **Diskussion:**

De forskellige lokale rekonstruktive teknikker vil blive afvejede over for hinanden i forhold til gevinst og mén for patienten på baggrund af eksisterende litteratur og egen erfaring.

1. Forfatters email: [thomas.frisch@regionh.dk](mailto:thomas.frisch@regionh.dk)

## Rekonstruktion med kindlapper efter kirurgisk ablation af mundhulekræft

MILAD TABATABAI, J MELCHORS, T FRISCH

Øre-næse-halskirurgisk og Audiologisk Klinik, Rigshospitalet

### Introduktion

Der er ca. 300 nydiagnosticerede mundhulekræftpatienter årligt i Danmark, og inciden- sen er svagt stigende. Kirurgisk ablation af tumor udgør en vigtig del af behandlingen. Med en anbefalet resektionsrand på 1 cm er der ofte indikation for rekonstruktion med henblik på at genopnå naturlig funktion og udseende. Vi har hos nogle af disse patienter foretaget rekonstruktion med en kindlap, hovedparten stilet på arteria facialis (facial artery myomucosal (FAMM)-lap), og ønsker med dette studie at afdække resultater og komplikationer.

### Metode

Patienter blev retrospektivt inkluderet ved at udtrække relevante operationer fra vores Klinik i perioden 2008 til 2014. Der blev på baggrund af journalcontinuationer indsamlet oplysninger om patient, herunder risikofaktorer og kormobiditeter, cancer, operation og postoperative komplikationer ved ambulante opfølgninger i Øre-næse-halskirurgisk og Audiologisk Klinik, Rigshospitalet og/eller onkologisk regi. Studiet blev accepteret ved Datatilsynet og Sundhedsstyrelsen.

### Resultater

Databehandlingen er ikke afsluttet. Der blev foretaget ca. 105 rekonstruktioner med FAMM-lap. Indikationen var hyppigst planocellulært karcinom lokaliseret til mund- bunden. Vi så en lav forekomst af nekroser eller direkte kirurgiske laprelaterede kompli- kationer og en betragtelig forekomst af funktionelle komplikationer i form af trismus, nedbinding af tungen og/eller synkebesvær. Ca. en tredjedel af patienterne blev postoperativt henvist til strålebehandling.

### Diskussion

Her præsenteres et stort materiale, som viser, at FAMM-lappen hos de fleste patienter kan udføres med acceptabel indheling. Opgørelsen viser dog også en betragtelig forekomst af funktionelle komplikationer, nogle formentlig relaterede til omfanget af ablationen. Vi foreslår, hvordan træning af mundåbning samt tungebevægelser måske kan mindske disse. Endelige data præsenteres.

1. Forfatters email: milad.tabatabai.kashani@regionh.dk

# Poster oversigt

# Poster præsentationer

Nr. 1

Aneurismatisk Knoglecyste i Sinus Maxillaris  
Annegrete Aalkjær Danielsen, MM Jensen og V Iyer

Nr. 2

Behandling af recidiverende posterior epistaxis  
Søren Bro, J Bille, K Petersen

Nr. 3

Focused Parathyroidectomy – Local or General Anesthesia?  
Ali Abdul-Hussein Abood, L Rolighed

Nr. 4

Er det forsvarligt at foretage hemithyreoidectomi som samedagskirurgisk procedure?  
Henrik Lunde Petersen, T Lutz, S Nielsen

Nr. 5

Sinogenic intracranial complication in a 11-year-old girl receiving immunosuppressive treatment for CRMO  
- a case-report.  
Mikkel Kofoed, P Darling, A Kjeldsen

Nr. 6

Recurrent angioedema associated with pharmacological inhibition of dipeptidyl peptidase-IV  
Thorbjørn Hermanrud, A Bygum, E Rye Rasmussen

Nr. 7

Surgery: Is it any good for goiter?  
Jesper R Sørensen, T Watt, H Døssing, Per Cramon, L Hegedüs, SJ Bonnema, C Godballe

Nr. 8

Cochlear implantation in Pendred syndrome and non-syndromic enlarged vestibular aqueduct - Clinical challenges, surgical results and complications  
Kristianna Mey, M Bille and P Cayé-Thomasen

Nr. 9

Forstørret vestibulær akvædukt hos 10 år gammel pige  
Simon Mylius Rasmussen og IR Johansen

Nr. 10

Value of PET/CT in diagnosing malignancy in adults with a lateral cystic neck mass  
Anita Petersen, H Jacobsen, AW Jørgensen

Nr. 11

Treatment regime for patients admitted to an ENT department due to epistaxis  
Jacob Galili, T Ovesen

## Poster præsentationer

Nr. 12

Profylaktisk thyroidektomi – hvornår?

Søren Grønlund Nielsen, SR Larsen, MF Nielsen, AL Frederiksen, C Godballe, JS Mathiesen

Nr. 13

Anstrengelsesudløst laryngeal obstruktion

Karin Jeppesen og CS Mehlum

Nr. 14

Efficacy of Hyperbaric Oxygen Therapy in Necrotizing Fasciitis: A Systematic Review

Jens F Thrane & T Ovesen

Nr. 15

Bone-anchored hearing aid - conventional BAHA vs. BAHA Attract. Patient reported outcome” -a retrospective study

Lina I. Danielsson, J. H. Wanscher

Nr.16

Clinical characteristics and management of patients admitted with Infectious mononucleosis -When kissing leads to surgery

Christian Danstrup, T Klug



# Poster abstracts

### Aneurismatisk Knoglecyste i Sinus Maxillaris

ANNEGRETE AALKJÆR DANIELSEN, RESERVELÆGE ØNH, MARGARAT MALGORZATA JENSEN, SPECIALLÆGE, ØNH, VICTOR IYER, SPECIALLÆGE, NUKLEARMEDICIN

Aalborg Universitetshospital

Vores case beskriver en primær aneurismatisk knoglecyste i sinus maxillaris hos en 50-årig kvinde. Vi konsulterede første gang patienten i vores cancer ambulatorium i maj 2016. Patienten var i udredning for reumatoid artrit og havde i den forbindelse fået foretaget en SPECT-CT, der overraskende viste en tumorsuspekt forandring i højre sinus maxillaris, hvorfor hun blev henvist til os. Patienten havde haft uspecifikke symptomer gennem fire år med tåreflåd, muskelspændinger i ansigt og nakke samt en fornemmelse af ændret lyd ved tale. MR af ansigtsskelet viste multicystisk proces med væskespejl i nær samtlige større cyster. Patient blev opereret med endoskopisk resektion. Histologi stadfæstede den sjældne diagnose aneurismatisk knoglecyste. Ved den én måned postoperative kontrol sås intet recidiv.

1. Forfatters email: [adan@rn.dk](mailto:adan@rn.dk)

## Behandling af recidiverende posterior epistaxis

SØREN BRO, J BILLE, K PETERSEN

Øre-, næse-, halskirurgisk afdeling H  
Aarhus Universitets Hospital

Posterior bleeding accounts for 30% of the patients presenting with epistaxis at emergency wards and otorhinolaryngeal specialist departments. Traditional treatment with packing often leads to initial treatment failure and many patients experience recurrent bleeding within the following month. Recurrent posterior epistaxis should be treated with local electrocautery or endoscopic ligation of the sphenopalatine artery to reduce patient discomfort, hospital stay, risk of treatment failure and recurrence.

1. Forfatters email: [sorenbro@hotmail.com](mailto:sorenbro@hotmail.com)

## Focused Parathyroidectomy – Local or General Anesthesia?

ALI ABDUL-HUSSEIN ABOOD, L ROLIGHED

Øre-Næse-Hals-Afdeling H, Aarhus Universitetshospital

### **Introduction:**

In primary hyperparathyroidism, the main treatment is surgical intervention. Throughout many years, the golden standard for this intervention has been bilateral neck exploration. However, in 80-90% of the patients the disease is caused by a single hyper-secreting adenoma. A focused intervention can therefore be offered. The procedure can be performed in general- or in local anesthesia.

In this study we aimed to describe the differences between focused parathyroidectomy (PTX) in local (LA)- and general anesthesia (GA) in patients with primary hyperparathyroidism.

### **Methods:**

Systematic review. Search was performed in Pubmed and Embase. The endpoints of interest were surgical success, patient satisfaction and economics. Every original study treating either one of the endpoints of interest was included.

### **Results:**

Twenty-two studies were included. The total number of patients who underwent PTX in LA was n= 1704. Median cure rate was 97 % (IQR 5,8). Only 11 patients (0,6%) experienced complications to surgery. Median operation time was significantly shorter when the procedure was performed in LA, 56 min (IQR 44,1),  $p < 0,01$ . Sameday-discharge was achieved in 86,5 % (IQR 12,6) of the patients who underwent PTX in LA. Operation in LA seemed to be associated with less economic expenses. There was a tendency towards less adverse events postoperatively when the procedure was performed in LA.

### **Discussion:**

Parathyroidectomy in local anesthesia seems to be safe and effective. The economic expenses, operation time, hospital stay and postoperative adverse events all seem to be reduced compared with performing the procedure in general anesthesia.

1. Forfatters email: aliahab@outlook.dk

### Er det forsvarligt at foretage hemithyreoidectomi som sammedagskirurgisk procedure?

HENRIK LUNDE PETERSEN, T LUTZ, S NIELSEN

Øre-Næse-Hals Klinikken, Sygehus Sønderjylland

#### Introduktion

I det danske sundhedsvæsen har der længe været fokus på sammedagskirurgiske procedurer.

Internationale studier viser gode resultater af hemithyreoidectomier som sammedagskirurgisk procedure grundet nye teknologier som karforseglingsudstyr og nervestimulater.

Er det muligt at foretage hemithyreoidectomi som sammedagskirurgisk procedure i vores set-up på en bestemt patientgruppe, uden at se en stigning i komplikationerne og at gøre det på en tryk og forsvarlig måde?

Målet er at foretage 100 indgreb og opgøre komplikationsraten, samt patienttilfredsheden.

#### Metode

Patienten bliver henvist, der skrives journal, UL-skannes og tales med narkosen. Patienten møder fastende til operation og opereres af erfaren speciallæge. Efterfølgende observeres patienten i 8 timer og fiberskoperes inden hjemsendelse. Efter en uge: postoperativ kontrol, suturfjernelse + fiberskopi. Efter tre måneder: postoperativ kontrol + blodprøver + fiberskopi.

#### Resultater

Indtil videre har vi opgjort 50 ambulante hemithyreoidectomier som mødte kriterierne. Komplikationerne vi har opgjort er: Efterblødning, postoperative infektioner og postoperative recurrenspareser lige efter operationen og tre måneder efter.

35 spørgeskemaer blev tilbageleveret, hvor patienten vurderer på en VAS-skala, hvor meget smerte, kvalme og bekymring de har haft i forløbet.

Derudover spørger vi dem, om de ville gøre det igen som ambulante forløb.

Vores resultater sammenligner vi til sidst med de klassiske forløb, hvor patienterne var indlagt.

#### Foreløbig konklusion

Ingen tegn til større komplikationsrate hos hemithyreoidectomier som sammedagskirurgisk procedure i forhold til de klassiske indlagte forløb.

Patienterne er hovedsageligt tilfredse med den ambulante behandling.

1. Forfatters e-mail: henrik\_b\_petersen@hotmail.com

### Sinogenic intracranial complication in a 11-year-old girl receiving immunosuppressive treatment for CRMO - a case-report.

MIKKEL SEREMET KOFOED, P DARLING, A KJELDEN

Department of Otorhinolaryngology, Odense University Hospital, Denmark

#### **Introduction:**

Intracranial suppurations are a rare but dreaded complication to bacterial sinusitis. Symptoms upon presentation are varied and nonspecific such as headaches, fever and nausea. The introduction of radio-imaging and antibiotics has significantly decreased the incidence and mortality, but it remains to be an area with severe morbidity and lack of guidelines. Chronic Recurrent Multifocal Osteomyelitis (CRMO) is a rare autoinflammatory disease with sterile bone lesions.

#### **Objective:**

We wish to investigate the prevalence of intracranial complications, and to draw attention to this serious condition, the diagnosis and the treatment hereof.

#### **Results:**

We report an unusual course of sinusitis, with intracranial complications in a 11-year-old girl with CRMO and in TNF-blockade treatment. During a vacation in Croatia the patient developed an orbital abscess. After treatment in Croatia, the patient progressed to develop a subdural parafalcine empyema, which was diagnosed and treated in Denmark. The patient presented with mild and unspecific symptoms, that was initially thought to be sequelae after surgery. Only upon further examination, papilloedema was discovered, which led to imaging and the diagnosis. Long term antibiotic treatment was necessary due to complications with infectious osteomyelitis in the frontal bone.

#### **Conclusion:**

It is possible that the immunosuppressive treatment of CRMO have resulted in a more complicated course of a sinus infection, and furthermore made the recognition of intracranial complications harder, by suppressing the immune response. Sinogenic intracranial complications, with its varying clinical manifestations and morbidity, should be kept in mind in children presenting with unexplained neurological deficits or signs hereof.

1. Forfatters email: mikof12@student.sdu.dk

### Recurrent angioedema associated with pharmacological inhibition of dipeptidyl peptidase-IV

THORBJØRN HERMANRUD, A BYGUM, E RYE RASMUSSEN

Øre-, næse-, halskirurgisk og audiologisk afdeling, Rigshospitalet

#### **Background:**

Angioedema of the upper airways is a severe and potentially life-threatening condition. The incidence has been increasing in the past two decades, primarily due to increased use of medications inhibiting the degradation of vasoactive peptides such as bradykinin and substance P. Angiotensin-converting enzyme (ACE)-inhibitor related angioedema is well-known, but other pharmaceuticals, such as the new antidiabetic agent dipeptidyl peptidase-IV (DPP-IV)-inhibitor, can cause angioedema in a similar way (fig. 1).

#### **Method:**

Case report

#### **Results:**

We here present a case of recurrent severe angioedema of the oral cavity, hypopharynx and larynx in a middle-aged male diabetic. The patient was hospitalised several times. Treatment with ACE-inhibitor was discontinued after the first hospitalisation, but this did not decrease the attack frequency or severity. Anti-allergic treatment proved ineffective. Complement levels were normal and allergy tests were negative. The angioedema episodes abruptly stopped after his DPP-IV-inhibitor therapy was discontinued.

#### **Conclusion:**

ACE is the major enzyme responsible for the degradation of bradykinin and substance P. DPP-IV plays a minor role in the degradation when ACE is fully functioning. When ACE is inhibited, as in patients treated with an ACE-inhibitor, DPP-IV is usually taking over. Concomitant ACE- and DPP-IV-inhibitor therapy thus leads to a potentially increased risk of angioedema, since they are the two major metabolizers of bradykinin and substance P.

1. Forfatters email: [thermanrud@gmail.com](mailto:thermanrud@gmail.com)

## Surgery: Is it any good for goiter?

JESPER ROED SØRENSEN <sup>(1)</sup>, T WATT <sup>(2)</sup>, H DØSSING <sup>(1)</sup>, PER CRAMON <sup>(2)</sup>, L HEGEDÜS <sup>(3)</sup>, SJ BONNEMA <sup>(3)</sup>, C GODBALLE <sup>(1)</sup>

1) Department of ORL - Head & Neck Surgery, Odense University Hospital, J.B. Winsløvs vej 4, 5000 Odense C, Denmark

2) Department of Endocrinology, Copenhagen University Hospital, Blegdamsvej 9, 2100 Copenhagen Ø, Denmark

3) Department of Endocrinology, Odense University Hospital, Klørvænget 6, 5000 Odense C, Denmark

### **Background:**

Using the thoroughly validated ThyPRO-questionnaire, we aimed at investigating changes in disease-specific quality of life (QoL) following surgical treatment in patients with benign non-toxic nodular goiter.

### **Method:**

Patients with goiter scheduled for thyroid surgery (n=106) and individuals from the general population (n=739) were studied. ThyPRO data before, three, and six months after surgery were compared with normative scores from the general population using a linear mixed model and t-tests. Effect sizes (ES) were calculated as mean change divided by standard deviation at baseline. ES of 0.2-0.5 were defined as small, 0.5-0.8 as moderate, and values > 0.8 as large.

### **Results:**

Before surgery, patients with goiter experienced poorer scores on all scales compared to the general population (p<0.01). Three months after surgery, moderate improvements were seen in Goiter Symptoms (ES: 1.26, p<0.001) and Overall QoL (ES: 0.56, p<0.001). Six months after surgery, moderate to large improvements were seen in Goiter Symptoms (ES: 1.52, p<0.001), Tiredness (ES: 0.60, p<0.001), Anxiety (ES: 0.54, p<0.001), and Overall QoL (ES: 0.74, p<0.001). At this time point, all scales had returned to levels as those found in the general population. The degree of Anxiety was in fact lower than in the general population.

### **Discussion:**

Using a thoroughly validated questionnaire, in an adequately powered study, we demonstrated that surgery profoundly improves QoL in patients with benign non-toxic nodular goiter. Our study may contribute important information for the patient as well as for the physician in guidance of choice of treatment, and what effects to expect as for various aspects of QoL.

1. Forfatters email: [jesper.roed.sorensen@rsyd.dk](mailto:jesper.roed.sorensen@rsyd.dk)



### Cochlear implantation in Pendred syndrome and non-syndromic enlarged vestibular aqueduct - Clinical challenges, surgical results and complications

KRISTINNA MEY<sup>(1)</sup>, BILLE M<sup>(1)</sup> AND CAYÉ-THOMASEN P<sup>(1,2)</sup>

(1) East Danish Center for Cochlear Implantation, Department of Otorhinolaryngology, Head & Neck Surgery, and Audiology, Copenhagen University Hospital Rigshospitalet/Gentofte Hospital

(2) Faculty of Health and Medical Sciences, University of Copenhagen

#### **Objective:**

To explore specific clinical issues, surgical results and complications of 80 cochlear implantations in 55 patients with Pendred syndrome (PS) or non-syndromic enlarged vestibular aqueduct (NSEVA).

#### **Background:**

Previous studies have focused either on unselected case series or on populations with mixed cochlear malformations. PS/NSEVA accounts for up to 10 % of congenital SNHL, rendering this a large group of cochlear implant candidates. The abnormal inner ear anatomy of these patients may be associated with a lower surgical success rate and a higher rate of complications.

#### **Study design:**

Retrospective review of patients' medical records and CT/MRI.

Setting: Tertiary referral center.

#### **Materials and methods:**

The files and CT/MRI images of 55 PS/NSEVA patients receiving 80 cochlear implantations from 1982-2014 were reviewed. Demographic data, surgical results, intraoperative incidents and postoperative complications were retrieved.

#### **Results:**

Complications occurred in 36% of implantations; 5% hereof major complications. Gushing/oozing from the cochleostoma occurred in 10% of implantations and was related to transient, but not prolonged postoperative vertigo.

#### **Conclusion:**

Intraoperative risk of gushing/oozing and postoperative vertigo are the primary clinical issues in PS/NSEVA patients regarding CI. Nonetheless, the surgical success rate is high and the major complication rate is low; similar to studies of unselected series of CI recipients.

1. Forfatters email: Kristiannamey@gmail.com

### Forstørret vestibulær akvædukt hos 10 år gammel pige

SIMON MYLIUS RASMUSSEN OG IR JOHANSEN

Øre-næse-halsklinikken, Sønderborg, Sygehus Sønderjylland

#### **Baggrund**

Forstørret vestibulær akvædukt er en malformation i det indre øre, hvis prævalens er dårligt belyst, men skønnes at være til stede hos 1-12% af sensorineuralt hørehæmmede individer.

#### **Sygehistorie**

10 årig pige blev set akut pga. pludseligt høretab på højre øre. Patienten oplevede pludseligt at miste hørelsen, mens hun var ude at gå en tur.

To uger forinden havde patienten haft et hovedtraume. Patienten havde to år tidligere oplevet sudden deafness på venstre øre. I modtagelsen fremtrådte patienten med svært nedsat hørelse og kommunikerede ved hjælp af skrift. Der blev gjort MR- og CT-skanning af cerebrum, hvor det konstateredes at der var forstørret vestibulær akvædukt, uændret siden 2013. Ved måling af Auditory Brainstem Respons (ABR) fandtes imidlertid tegn på hørest. Patienten blev viderehenvist til Odense Universitetshospital, hvor ABR viste at patientens hørelse var forværret yderligere. Patienten blev herefter henvist til Aarhus Universitetshospital og blev behandlet med cochlear implant.

#### **Diskussion**

Denne kasuistik indeholder centrale elementer som stemmer overens med gældende teori, fx ses der et sensorineuralt høretab forudgået af hovedtraume. Den er et eksempel på, hvor vigtigt det er at foretage CT-skanning hos børn med pludseligt sensorineuralt høretab efter hovedtraume, idet en forstørret vestibulær akvædukt vil kunne konstateres og nødvendige forholdsregler tages.

1. Forfatters email: [simon.mylus.rasmussen@rsyd.dk](mailto:simon.mylus.rasmussen@rsyd.dk)

### Value of PET/CT in diagnosing malignancy in adults with a lateral cystic neck mass

ANITA PETERSEN, H JACOBSEN, AW JØRGENSEN

Øre Næse Hals-Kirurgisk Afdeling, Aalborg Universitetshospital

#### **Introduction:**

A solitary cystic lateral neck mass in adults over 40 years of age has traditionally caused a diagnostic challenge as both the benign branchial cleft cyst and the malignant cystic lymph node metastasis may appear clinically similar. The objective of this study was to investigate the clinical usefulness of PET/CT in correctly distinguishing a benign cystic mass from a cystic neck lymph node metastasis.

#### **Materials and methods:**

Medical records from consecutive patients with the diagnoses: branchial cleft cyst, neck metastasis, oropharyngeal cancer, tonsil cancer, cancer of the base of the tongue and thyroid carcinoma on patients 40 years or older, were collected identifying patients presenting with a lateral cystic neck lesion. All journals were retrospectively reviewed identifying and comparing PET/CT results with histology results from the removed lateral cystic neck mass.

#### **Results:**

A total of 59 patients were eligible for final inclusion. 11 cases were malignant. All were male with a significant higher age than the overall population. Sensitivity of PET/CT was 73%. Specificity was 75%. The positive predictive value of PET/CT was 40% and the negative predictive value was 92%.

#### **Conclusion:**

PET/CT is a useful diagnostic tool in the work-up for patients over 40 years of age, especially in those with a negative PET/CT result. The older male patient seems at higher risk of malignancy. The PET/CT in this patient group need to be assessed with supplemental imaging, cytological test and clinical examination.

1. Forfatters email: [anita.p.dk@gmail.com](mailto:anita.p.dk@gmail.com)

### Treatment regime for patients admitted to an ENT department due to epistaxis

JACOB GALILI, T OVESEN

Department of Otorhinolaryngology, Hospitalsenheden Vest, Denmark

#### **Introduction:**

The aim of this study was to describe the population of patients with epistaxis admitted to an ENT department in order to evaluate the incidence of re-bleeding after nasal packing and the subsequent effect of Endoscopic Sphenopalatine Artery Ligation (ESPAL).

#### **Method:**

A retrospective study was performed including consecutive patients admitted to the ENT department at the Regional Hospital, Holstebro from January 1st 2011 until December 31st 2015 with the diagnosis "epistaxis". A total of 517 patient files were reviewed.

Inclusion criteria for this study were all patients admitted with epistaxis.

Exclusion criteria were epistaxis due to trauma, post-operative bleeding, cancer or hemorrhagic diathesis and children under 18 years of age.

#### **Results:**

Preliminary results will be presented and discussed.

1. Forfatters email: [jacob@galili.dk](mailto:jacob@galili.dk)

## Profylaktisk thyroidektomi – hvornår?

SØREN GRØNLUND NIELSEN <sup>1</sup>, SR LARSEN <sup>2</sup>, MF NIELSEN <sup>3</sup>, AL FREDERIKSEN <sup>4</sup>, C GODBALLE <sup>1</sup>, JS MATHIESEN <sup>1,5</sup>

1 Department of ORL Head & Neck Surgery, Odense University Hospital, Sdr. Boulevard 29, DK-5000 Odense, Denmark

2 Department of Pathology, Odense University Hospital, Sdr. Boulevard 29, DK-5000 Odense, Denmark

3 Department of Endocrinology, Odense University Hospital, Sdr. Boulevard 29, DK-5000 Odense, Denmark

4 Department of Clinical Genetics, Odense University Hospital, Sdr. Boulevard 29, DK-5000 Odense, Denmark

5 Institute of Clinical Research, University of Southern Denmark, Winsløwparken 19, DK-5000 Odense, Denmark

### **Introduktion:**

Alderen for profylaktisk thyroidektomi ved arvelig medullær thyroideacancer afhænger af den tilgrundliggende mutation i REarranged during Transfection (RET) proto-onkogenet. Mutationerne inddeles af American Thyroid Association i tre internationalt gældende kategorier: moderat, høj og højest. Den anbefalede alder for profylaktisk thyroidektomi for kategorierne høj og højest er hhv. indenfor 1. og 5. leveår, mens den anbefalede alder for kirurgi hos patienter med mutationer i moderat kategorien, er når tumormarkøren calcitonin er forhøjet.

Vi præsenterer den første etnisk danske familie med RET L790F mutationen og evaluerer den fænotypiske præsentation ift. American Thyroid Associations kategorier.

### **Metode:**

Genetisk familieopsporing.

### **Resultater:**

En 70-årig index case med en multifokal T1b(15mm)N0M0 medullær thyroideacancer og 46-årig søn med multifokal T1a(1mm)N0M0 medullær thyroideacancer.

### **Konklusion:**

De præliminære data tyder på at den arvelige medullær thyroideacancer debuterer sent i livet hos patienter med RET L790F mutationen. Dette stemmer godt overens med kategoriseringen af denne mutation i moderat kategorien.

1. Forfatters email: Soren.Gronlund.Nielsen@rsyd.dk

## Anstrengelsesudløst laryngeal obstruktion

KARIN JEPPESEN OG C. S. MEHLUM.

Øre-Næse-Halskirurgisk Afdeling Odense Universitetshospital

### **Introduktion:**

Der er kommet mere fokus på anstrengelsesudløst laryngeal obstruktion (EILO) som differentialdiagnose til anstrengelsesudløst astma (EIA). Prævalensen hos en almen teenagepopulation er i tidligere studier beskrevet op til 7,1% og helt op til 35% hos atleter med uforklaret anstrengelsesudløst åndenød.

Vi ønskede at bestemme prævalensen af EILO i en selekteret population bestående af patienter med anstrengelsesudløst åndenød som efter lungemedicinsk udredning og eventuel behandling stadig har uforklarede symptomer.

### **Metode:**

EILO diagnosticeres ved en CLE-test (continuous laryngoscopy exercise test) hvorved graden af EILO kan bedømmes ved en Maat-score. Data fra gennemførte CLE-tests er gennemgået retrospektivt og demografiske forhold, testresultater og behandlingstiltag er analyseret vha. deskriptiv statistik.

### **Resultater:**

Der blev foretaget 207 CLE-tests i perioden 2010-2016, heraf havde 81 patienter EILO svarende til en prævalens på 39%.

Af disse havde 14% EILO i en grad så de blev tilbudt operation, 42% blev henvist til logopæd og de resterende fik træningsvejledning.

### **Diskussion:**

Med en prævalens på 39% understøtter det EILO er en relevant differentialdiagnose til EIA i en selekteret population.

1. Forfatters email: [jacobsenkarin@hotmail.com](mailto:jacobsenkarin@hotmail.com)

## Efficacy of Hyperbaric Oxygen Therapy in Necrotizing Fasciitis: A Systematic Review

JENS F THRANE <sup>(1)</sup> & T OVESEN<sup>(2)</sup>

(1) Department of Otorhinolaryngology, Aalborg University Hospital, Denmark

(2) Institute of Clinical Medicine, Aarhus University, Denmark

### Introduction

Necrotizing Fasciitis (NF) is a rare condition and a potentially life threatening infectious disease. Aggressive surgical debridement, intravenous antibiotics and hemodynamic support is the mainstay of the treatment. Adjuvant Hyperbaric Oxygen Therapy (HBOT) is advocated by some, but the treatment modality remains controversial. No RCT-studies exist, and evidence on the effect of HBOT in NF is sparse. The aim of this study is to evaluate quantity and quality of the existing literature on the subject.

### Methods

We conducted a systematic review of the literature on HBOT in NF.

Five major databases were searched using a structured search strategy including Mesh terms and variations of “Necrotizing Fasciitis”, “Fournier Gangrene” and “Hyperbaric Oxygen Treatment”.

Case series were assessed using The Modified Delphi Technique on 11 specified criteria and a narrative synthesis was conducted. A meta-analysis is pending.

### Results

We identified 663 studies on the subject. 18 comparative studies with a total of 1074 patients were found eligible for inclusion. Preliminary data show poor performance on Delphi criteria in the majority of studies.

A meta-analysis on the efficacy of HBOT on mortality is in progress.

### Discussion

The literature on HBOT in NF consist primarily of case reports and case series. The majority of the studies are underpowered and poorly designed. Considering patient safety and optimizing treatment for NF, the role of HBOT is in need of conclusive explication. We provide recommendations for the design of future case control studies and strongly endorse a multi- centre randomized clinical trail.

1. Forfatters email: thrane@me.com

### "Bone-anchored hearing aid - conventional BAHA vs. BAHA Attract. Patient reported outcome" - a retrospective study

LINA I. DANIELSSON, J. H. WANSCHER

Afd F, Odense Universitetshospital, Odense

#### **Introduktion:**

Bone-anchored hearing aid (BAHA) er et høreapparat som stimulerer cochlea med vibrationer igennem et lille implantat i tindingebensknoglen. Implantatet fastgøres enten med skrue (konventionel BAHA) eller med magnet forankring (BAHA Attract). Der er på afdeling F, Odense Universitets Hospital, tidligere undersøgt patienttilfredshed ved konventionel BAHA ved brug af Satisfaction with Amplification in Daly Living (SADL). Spørgeskemaet SADL er kendt og benyttet til måling af patient rapporteret outcome hos patienter med forskellige typer af høreapparater.

Det forestående studie vil sammenligne patient tilfredsheden ved konventionel BAHA med BAHA attract.

#### **Metode:**

Studiet er et klinisk retrospektiv outcome studie med brug af spørgeskema. Der er anvendt SADL som er oversat og valideret på dansk. Der er udsendt brev indeholdende information, spørgeskema og skriftlig informeret samtykke. SADL score for BAHA Attract sammenlignes med resultater fra tidligere undersøgelse af konventionel BAHA.

#### **Resultat:**

Fra den tidligere undersøgelse findes SADL score fra 65 patienter opereret med konventionel BAHA. Der er i perioden 01.06.2014 – 01.03.2016 opereret 24 med BAHA Attract. Heraf opfylder 22 inklusion kriterierne og 5 blev ekskluderet. Samlet blev 17 inkluderet i undersøgelsen og fik tilsendt spørgeskemaet SADL.

Der foreligger endnu ikke resultater idet undersøgelsen og dataindsamlingen fortsat er igang.

#### **Diskussion:**

Vores hypotese antager at der ingen forskel er i SADL score for patienter der har fået konventionel BAHA sammenlignet med patienter der har fået attract BAHA. Resultatet fra Spørgeskemaundersøgelse vil belyse dette nærmere.

1. Forfatters email: linadanielsson@gmail.com



### Clinical characteristics and management of patients admitted with Infectious mononucleosis

- When kissing leads to surgery -

CHRISTIAN DANSTRUP, T. KLUG

Øre-næse-halskirurgisk afdeling H, Aarhus Universitetshospital, Nørrebrogade 44, 8000 Aarhus C

#### **Introduktion**

Infectious mononucleosis (IM) is a common viral infection caused by the Epstein-Barr Virus (EBV). More than 90% of all adults will eventually become EBV antibody-positive.

The disease is usually self-limiting without sequelae but the transient hyperplasia of the lymphoid tissues in Waldeyer's tonsillar ring can cause life-threatening upper airway obstruction (1%). Furthermore, bacterial superinfection secondary to the initial viral infection is common and peritonsillar abscess (PTA) occasionally develop.

Treatment of IM is commonly symptomatic and do not require admission. However, patients suspected to have suppurative complications (e.g. PTA), respiratory distress, or dehydration are often referred to Ear- nose- and throat (ENT) departments.

We aimed to describe patients with IM in terms of demographics, bacterial culture findings, surgical and medical management, and complications.

#### **Method**

All patients with Infectious Mononucleosis, who were admitted to the Department of Otorhinolaryngology – Head and Neck Surgery at Aarhus University hospital between 2001-2015 were included in the study. The diagnosis was based on atypical lymphocytosis and/or a positive antibody-test.

#### **Results**

257 patients were included. There were 58% males and 42% females with a mean age of 17,5 years. Mean length of stay was 3 days

58 patients underwent surgical interventions. A peritonsillar abscess was suspected in 65,5% and compromised airways suspected in 32,8%

45,1% had antibiotics prescribed prior to admission, 65,8% during admission and 36,2% upon discharge.

44 patients received corticosteroids during admission.

#### **Discussion**

Despite of being a common disease, descriptions of patients with IM admitted to ENT departments are rare.

1. Forfatters email: christian.danstrup@gmail.com



**Adding value to business**

**STORZ**  
**KARL STORZ — ENDOSKOPE**

**NOVAX**  
— FORDI GLADE KUNDER BETYDER ALT!



**otometrics**

**a division of natus.**



**INFORM**

STAY SPECIAL

**M&D**

Næste DSOHH årsmøde  
12.-13. april 2018  
på Hotel Nyborg Strand