



Venezia, Italy
5-8 December, 2007
HOTEL NH LAGUNA PALACE

Pedersen M (2007). Coughing and voice disorders in rhinitis and asthma the role of allergy and medication. *XIIIth Congress of the International Rhinological Society, Venice 2007. Round Table.*

12th Congress of the International Rhinological Society Venice 2007

– Round table –

Use of steroids and antibiotics in rhinology today.

What are the most useful drugs?

What are the indications, resistance and complications?



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Coughing and voice disorders in rhinitis and asthma the role of allergy and medication

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Till now two Cochrane reviews showed no evidence of treatment of vocal nodules and pharyngo-laryngeal reflux.

A European project on advanced voice assessment includes also better trials of laryngeal treatments (COST 2103).

In a study we implemented results of LTAS of reading the standard text 'The North wind and the Sun' and intonation of an /ah/ for four seconds in a statistical setting.

In the larynx the arytenoids regions and not only the vocal chords are often severely affected. A comparison is made between the acoustical analysis and oedema of the larynx, especially the arytenoids.

The treatment of allergies and infections in the larynx resulted in changed values of the harmonics in the LTAS between 2500-4000 Hz (prob>ChiSq log-rank 0.0025, Wilcoxon 0.0153).



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THE CLINICAL USE OF LONG TIME AVERAGE SPECTROGRAMS (LTAS)

XVI Annual PVSF/UCLA Voice Conference Los Angeles 2007

Mette Pedersen MD Ear-Nose-Throat specialist PhD (Cost 2103)

Cochrane review:

SURGICAL VERSUS NON-SURGICAL INTERVENTIONS FOR VOCAL CORD NODULES

Pedersen M, McGlashan J update 2007 (Cost 2103)

Cochrane review:

ACID REFLUX TREATMENT FOR HOARSENESS

Hopkins C, Yousaf U, Pedersen M 2006



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Allergies were diagnosed by medical history and tests of inhalation allergens, other allergies and food additives, also genetic intolerance to cow milk.

Infections were diagnosed with swabs and blood examinations.

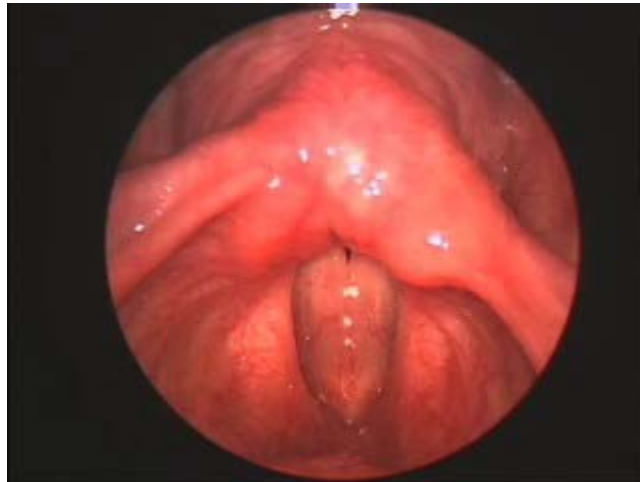
Reflux patients were diagnosed with oesophagoscopy and gastroscopy

Treatment included steroids inhalors (without lactose), anti-histamines, antibiotics, acid pump inhibitors, environment corrections including diet and others.

Oedema of the arytenoids



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Other aspects



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- **Lactose intolerance**
- **(inhalers of steroid** all with lactose except spirocort (pulmicort and other local names) and bricanyl
- Is inherited recessively , localised C/C-13910 genotype for the 3 kb upstream LCT gene, is associated with 100% lactose intolerance (Annual review of genetics, 2003,37:197-219 and others)
- **A cohort study** of 314 clients prospectively in the clinic with laryngeal complaints, a routine examination for three months March-May 2007:
- 34 patients had C/C lactose intolerance with swollen arytenoids grade 2-5 **(12%)**

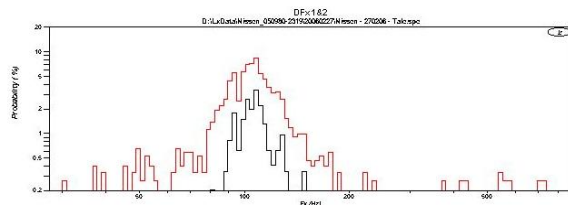
Other aspects: newer methods for RCTs



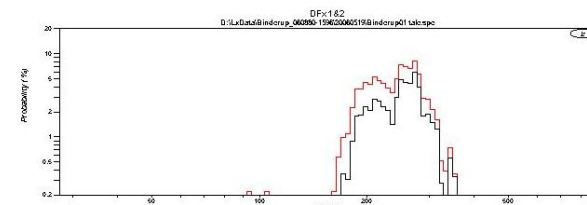
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Sustained tone Qx%		Reading of a text Qx%		Sustained tone Qx%		Reading of a text Qx%	
Arytenoid 1	19 (12-26) range	35 (30-40) * <i>p</i> 0,042 ←	before	17 (12-22) range	44 (40-48) * <i>p</i> *0,015		
Arytenoids 2-5	18 (15-20) range	41 (39-42) difference	after	14 (9-19) range	37 (33-41) difference ←		
Sustained tone Fx%		Reading of a text Fx%		Sustained tone Fx%		Reading of a text Fx%	
Arytenoids 1	1,9 (1-6) range	13 (8-19) * <i>p</i> ,03 ←	before	4.5 (1.8-7.2)	22 (19-26)		
Arytenoids 2-5	5,3 (3,7-5,8) range	19(18-21) difference	after	3 (0.3-5.7)	17 (14-22)		
Cohesion factor:35 normals (arytenoids 1)vs 314 abnormals				Cohesion factor before and after treatment arytenoids score 2-4			

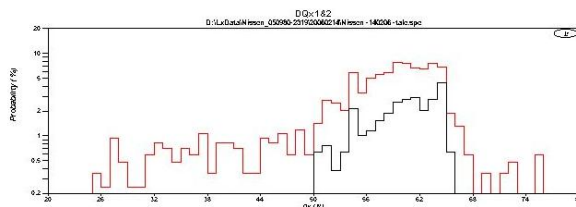
Arytenoids score 4, Fx % cohesion factor before treatment



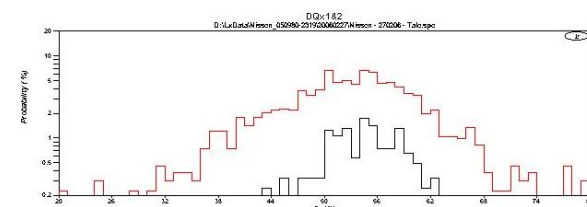
after treatment



Arytenoids score 4, Qx % cohesion factor before treatment



after treatment



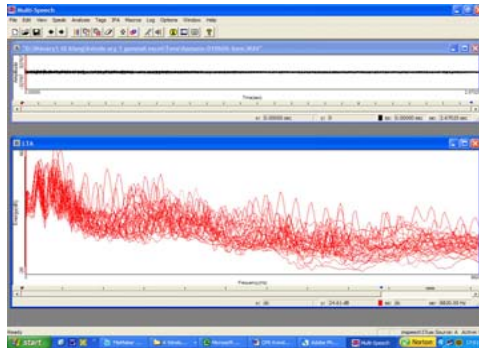
LTAS



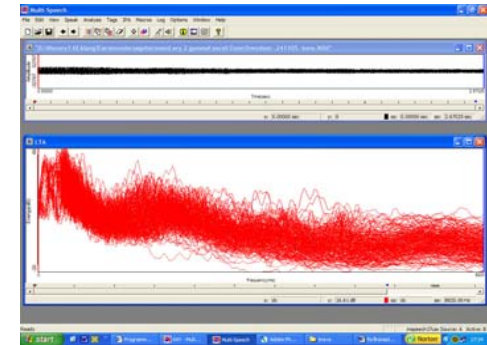
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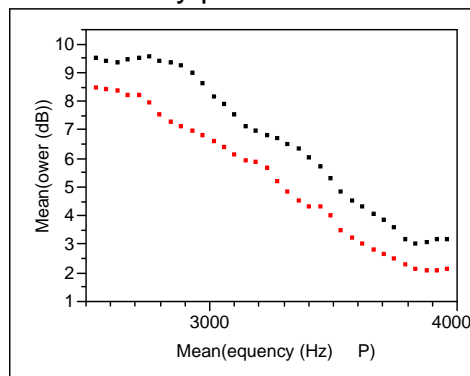
shows the normals visual score 1 related to LTAS



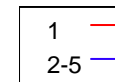
abnormal arytenoids visual score 2-5 related to LTAS



Product-Limit Survival Fit Survival Plot 1 vs 2-5 for the overlay plot of 2.500–4.000Hz



Product-Limit Survival Fit
Survival Plot



Tests Between Groups 1 and 2-5 arytenoids reading of a standard text showed a significant difference.

Test	ChiSquare	DF	Prob>ChiSq
Log-Rank	9,1651	1	0,0025 ←
Wilcoxon	5,8763	1	0,0153 ←

Other aspects: newer methods for RCTs



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Airflow measurement (Aerophone2) 30 normal singing students:

18 females & 12 males

MEAN FLOW RATE	Average	Lowest	Highest
Male	0,204	0,031	0,527
Female	0,178	0,106	0,318
Vital capacity			
Male	5,138	3,460	8,876
Female	3,723	2,615	4,219
Peakflow			
Male	10,993	8,880	19,920
Female	7,366	5,560	8,840

Average Fx (speech)	Average	Lowest	Highest
Male	127,898	106,560	171,05
Female	227,405	198,260	262,700
Jitter (Speech)			
Male	5,469	3,040	6,77
Female	5,448	2,620	7,550
Shimmer (Speech)			
Male	18,047	13,950	20,9
Female	13,389	11,460	17,030
Average Qx (Speech)			
Male	51,248	46,070	58,55
Female	49,239	39,990	57,460
Average Fx (sust.note)			
Male	140,048	116,040	169,4
Female	272,371	206,620	308,600
Jitter (Sust.note)			
Male	0,320	0,200	1,08
Female	0,541	0,140	2,080
Shimmer (Sust.note)			
Male	7,116	3,090	17,54
Female	8,227	2,010	18,690
Average Qx (Sust.note)			
Male	47,944	39,900	63,33
Female	46,032	37,650	60,940

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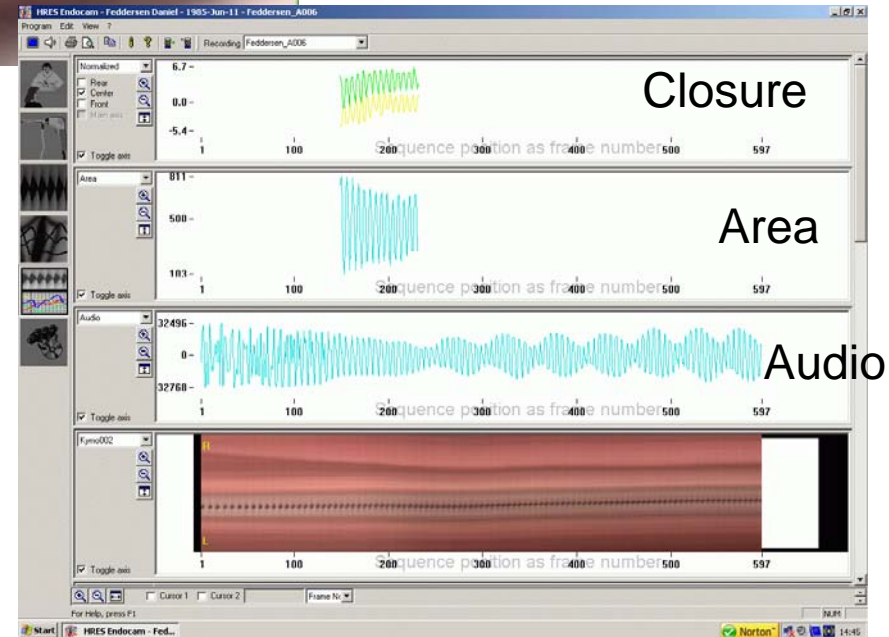
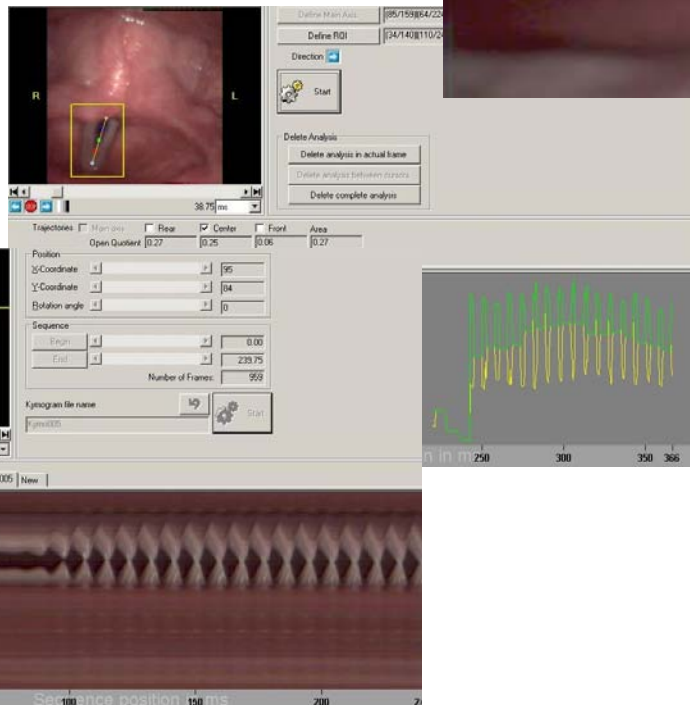
Richard Wolf Medical
Instruments Corporation

High-Speed movie



Overview

Closure

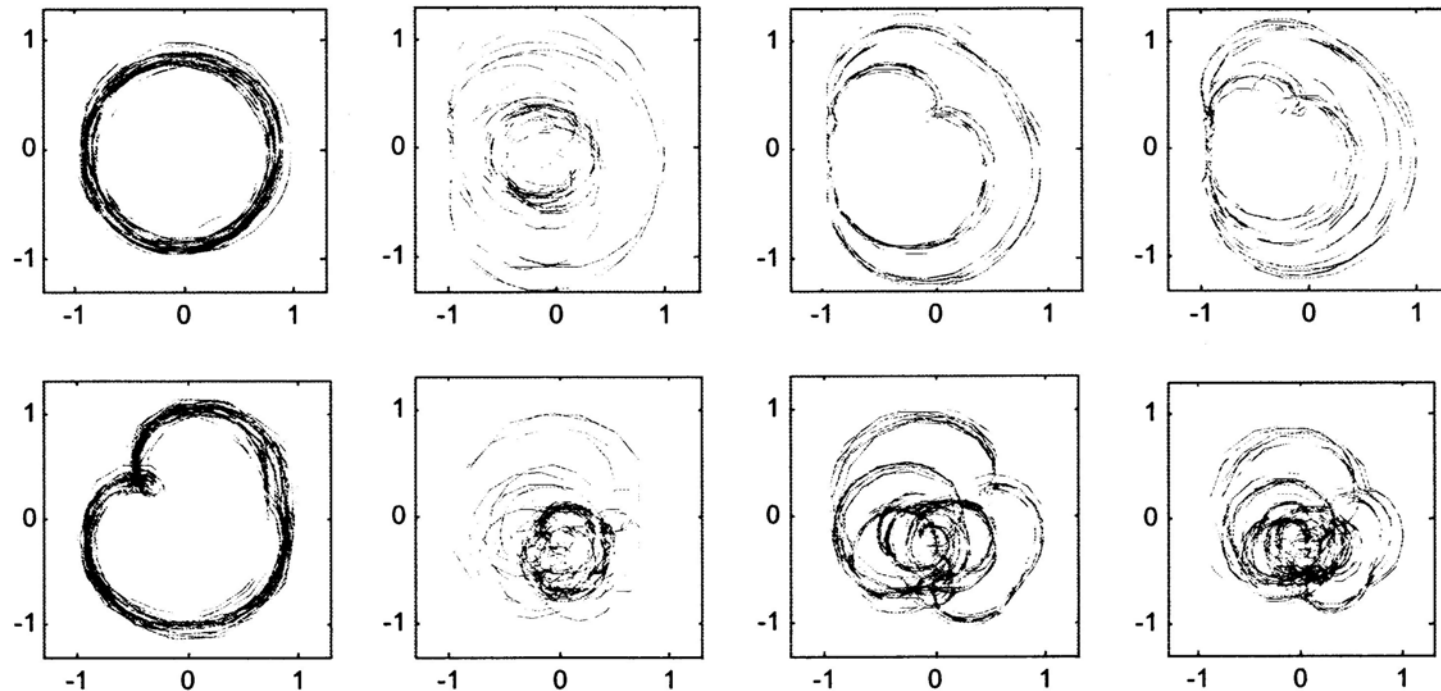


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Quantitative acoustical plots from sound samples (Nyquist plots)



(Yan et al. 2005, 2006; J. Voice)



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- As mentioned at other round tables at this conference
- **coughing related to voice disorders should be treated after the mucosa models in rhinology – except for a very small part of the larynx: the vocal chords**
- **because the mucosa in the larynx is part of the upper airways.**



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- **A paradigm shift** for the causes and treatments of coughing and voice disorders are related to new understanding of the role of allergy, infection and medication.
- **The paradigm shift is based on new measurements usable for**
- **Randomized Controlled Trials.**



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