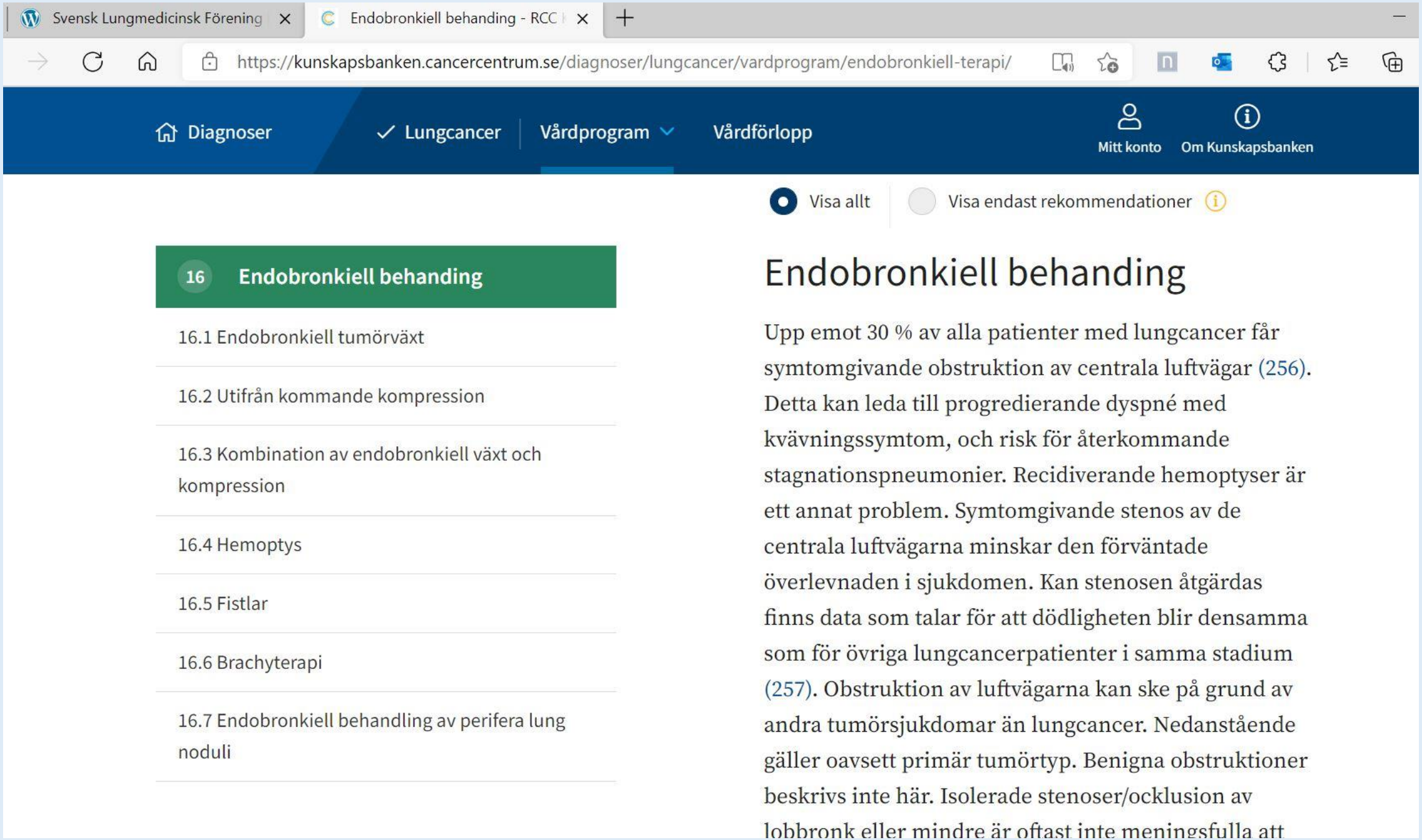
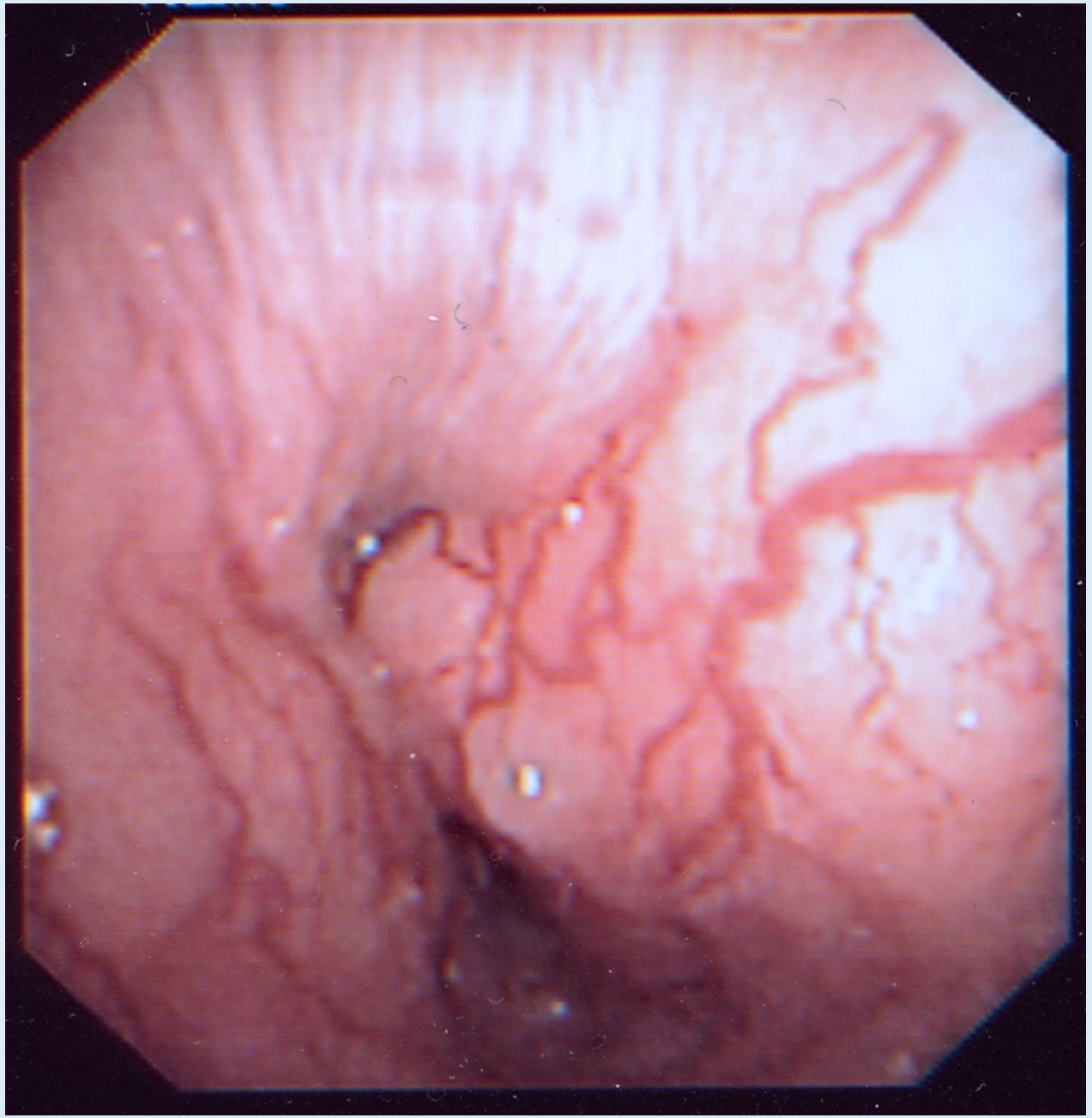
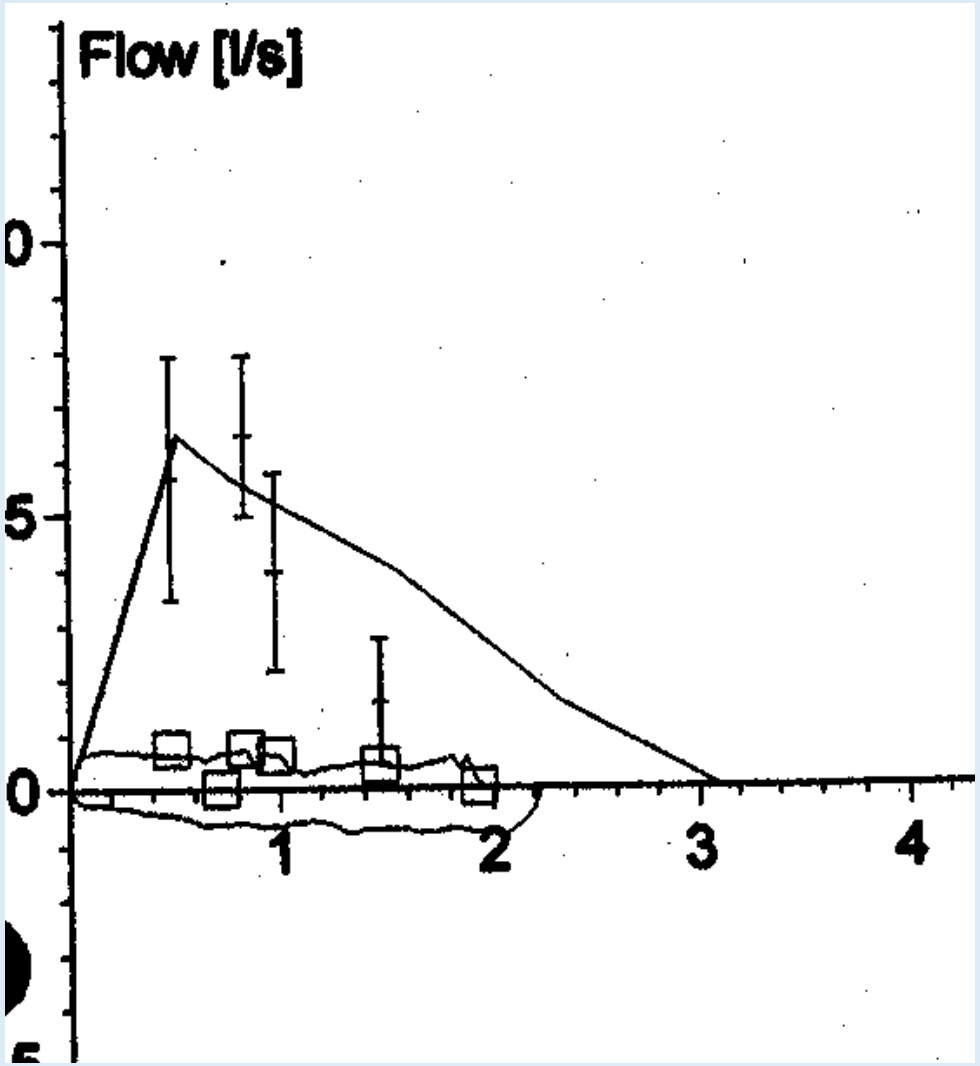
Endobronkiell terapi

Stefan Barath

241010


Svensk Lungmedicinsk Förening
Endobronkiell behanding - RCC
https://kunskapsbanken.cancercentrum.se/diagnoser/lungcancer/vardprogram/endobronkiell-terapi/
Diagnoser
Lungcancer
Vårdprogram
Vårdförlopp
Mitt konto
Om Kunskapsbanken
Visa allt
Visa endast rekommendationer
16 Endobronkiell behanding
16.1 Endobronkiell tumörväxt
16.2 Utifrån kommande kompression
16.3 Kombination av endobronkiell växt och kompression
16.4 Hemoptys
16.5 Fistlar
16.6 Brachyterapi
16.7 Endobronkiell behandling av perifera lung noduli
Endobronkiell behanding
Upp emot 30 % av alla patienter med lungcancer får symtomgivande obstruktion av centrala luftvägar (256). Detta kan leda till progredierande dyspné med kvävningssymtom, och risk för återkommande stagnationspneumonier. Recidiverande hemoptyser är ett annat problem. Symtomgivande stenos av de centrala luftvägarna minskar den förväntade överlevnaden i sjukdomen. Kan stenosen åtgärdas finns data som talar för att dödligheten blir densamma som för övriga lungcancerpatienter i samma stadium (257). Obstruktion av luftvägarna kan ske på grund av andra tumörsjukdomar än lungcancer. Nedanstående gäller oavsett primär tumörtyp. Benigna obstruktioner beskrivs inte här. Isolerade stenoser/ocklusion av lobbronk eller mindre är oftast inte meningsfulla att





- FVC 1,93 l (62,5%)
- FEV1 0,72 l (27,2%)
- PEF 43 l/min (11,1%)

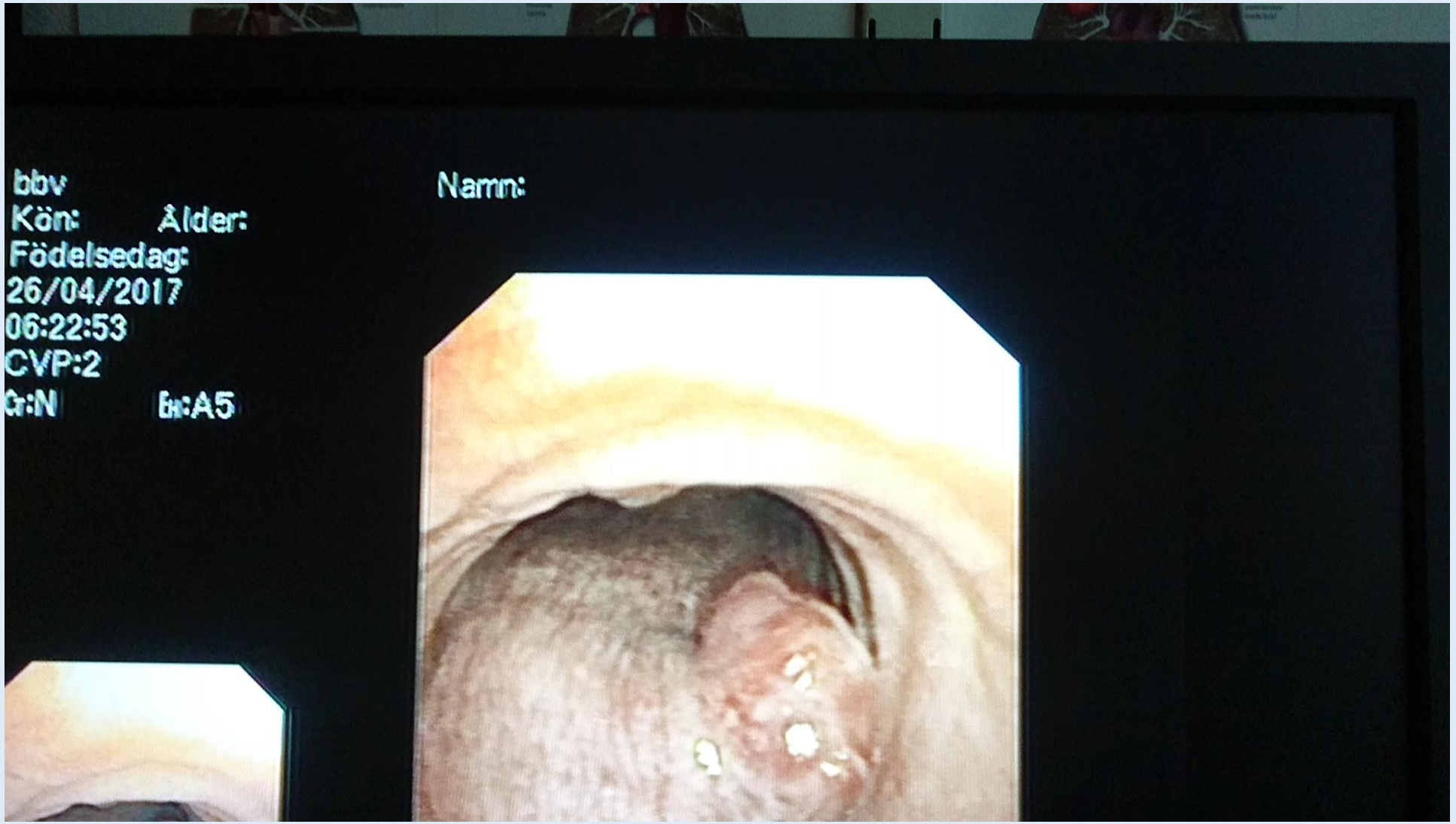
Sjukdomstillstånd i centrala luftvägar

- Övre luftvägssjukdom feltolkas ofta som nedre (stridor, pip och väs)
- Slätröntgen av torax är opålitlig när det gäller centrala tumörer
- CT thorax (tomosyntes) bronkoskopi
- Flöde-volymkurvor är inte heller pålitliga
- Tidig diagnos viktigt
- Endobronkiell terapi kan ge ökad livskvalite


Patient-ID:
Patientnamn:
Kön:
03/05/2017
14:23:22
CVP:94
D.F:94
■■■/■■■(93/94)
Eh:A1 Cm:1

Central luftvägsobstruktion-klinik

- Obsruktivitet
- Recividerande infektionerStridor
- Pip (expiratoriskt och inspiratoriskt)
- Symtom kommer *sent*: ansträngningsdyspné först när trakeallumen är <8mm – vilodyspné <5mm
- Respiratorik insuff
- Spirometrin påverkas också sent

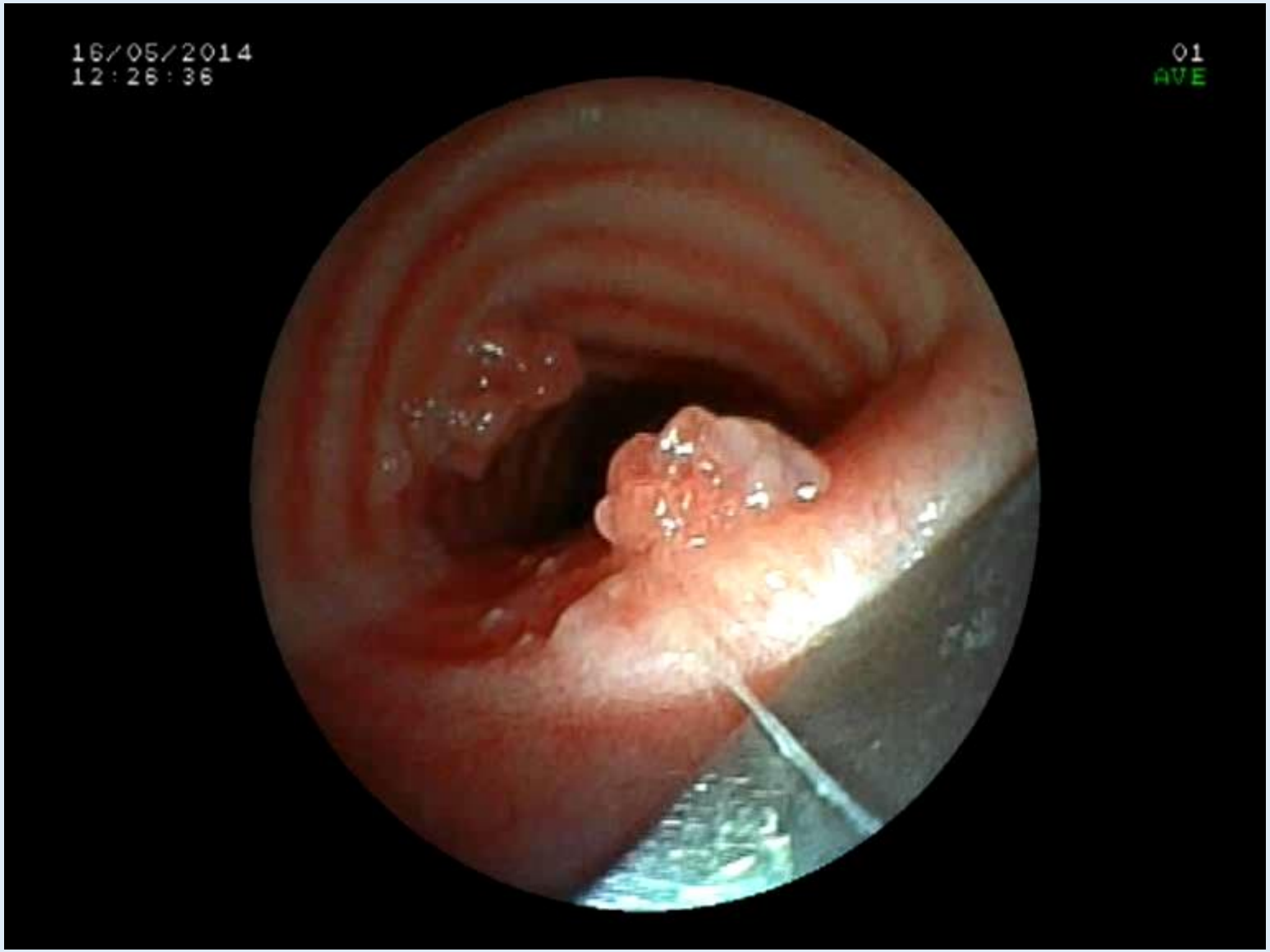

bbv
Kön:
Ålder:
Födelsedag:
26/04/2017
06:22:53
CVP:2
G:N
Namn:

Orsaker

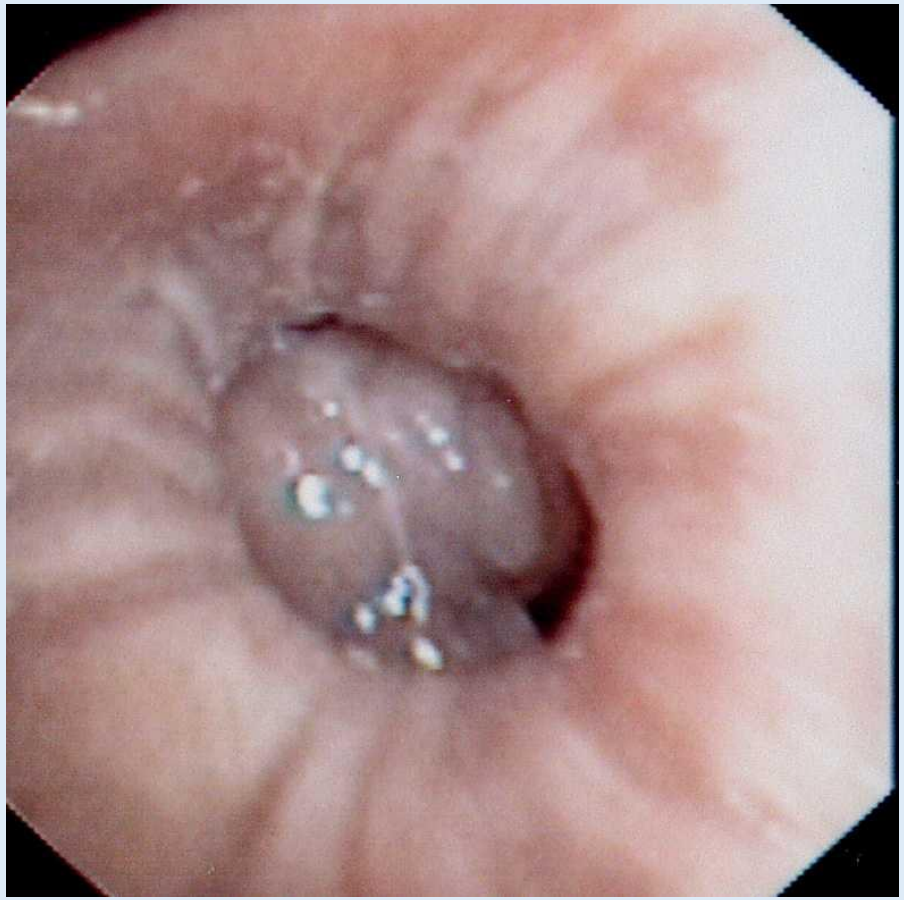
- Malignitet
  - Bronkialcancer
  - Lungmetastaser (ca. coli, njur-ca., malignt melanom, ca. uteri, ca. cervix, sarkom, etc.)
  - Intratorakala tumörer (ca. esofagus, ca. thyreoidea, lymfom)

Sarkoidos?

HPV

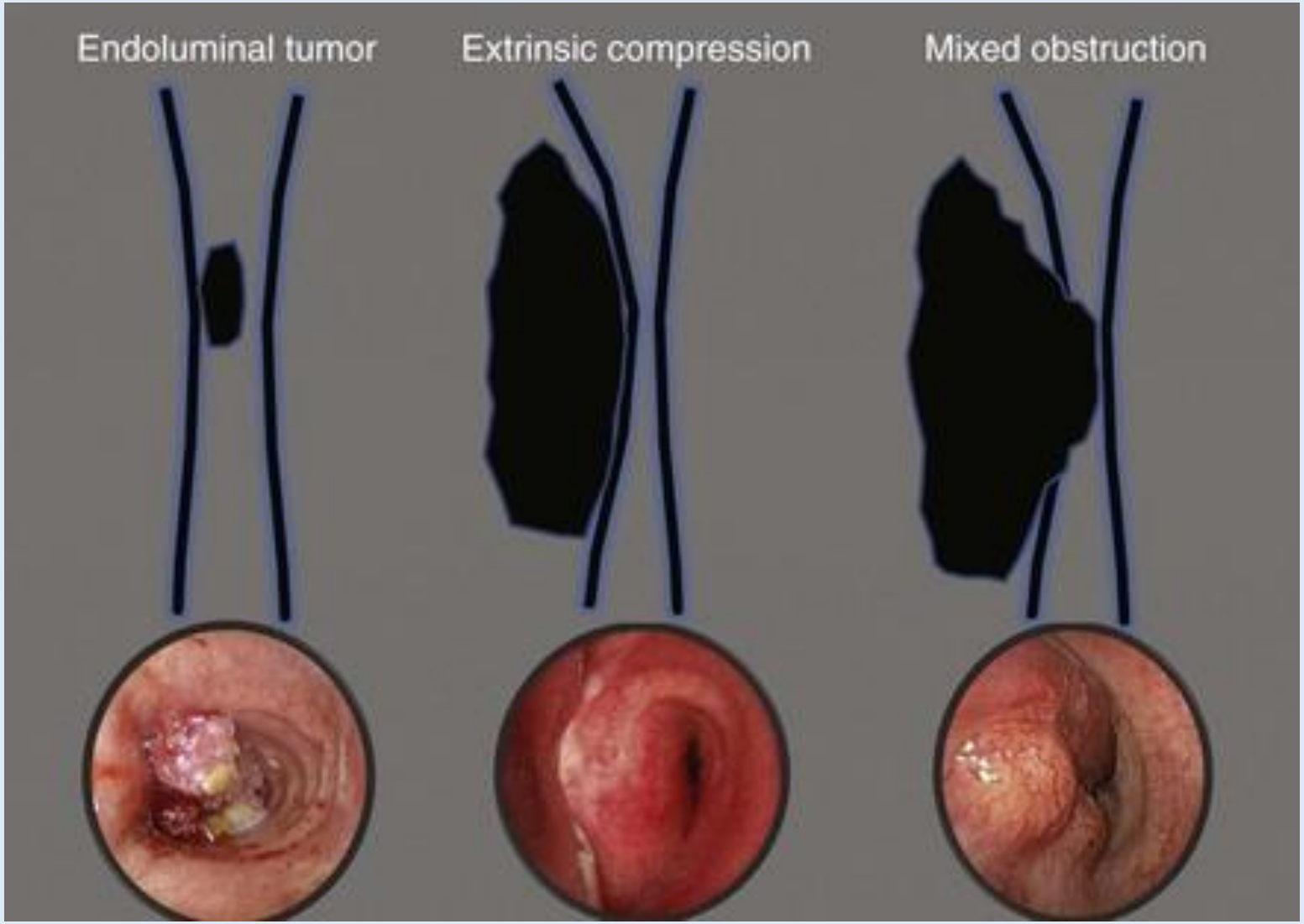


Hamartom




LUNG CT Thick Axials 2.5mm
C: -450.0, W: 1500.0
DFoV: 237 mm
Pos: 258.05
120 kV / mA
2.5 mm / 55/ 1.375
Tilt: 0°
600 ms /HE

Val av modalitet beror på typ av obstruktion



Debulking

- Laser
- Diatermi
- Argon Plasma Coagulation (APC)
- Kryo
- Brachyterapi
- Fotodynamisk terapi
- Mekanisk debulking med stelt bronkoskop

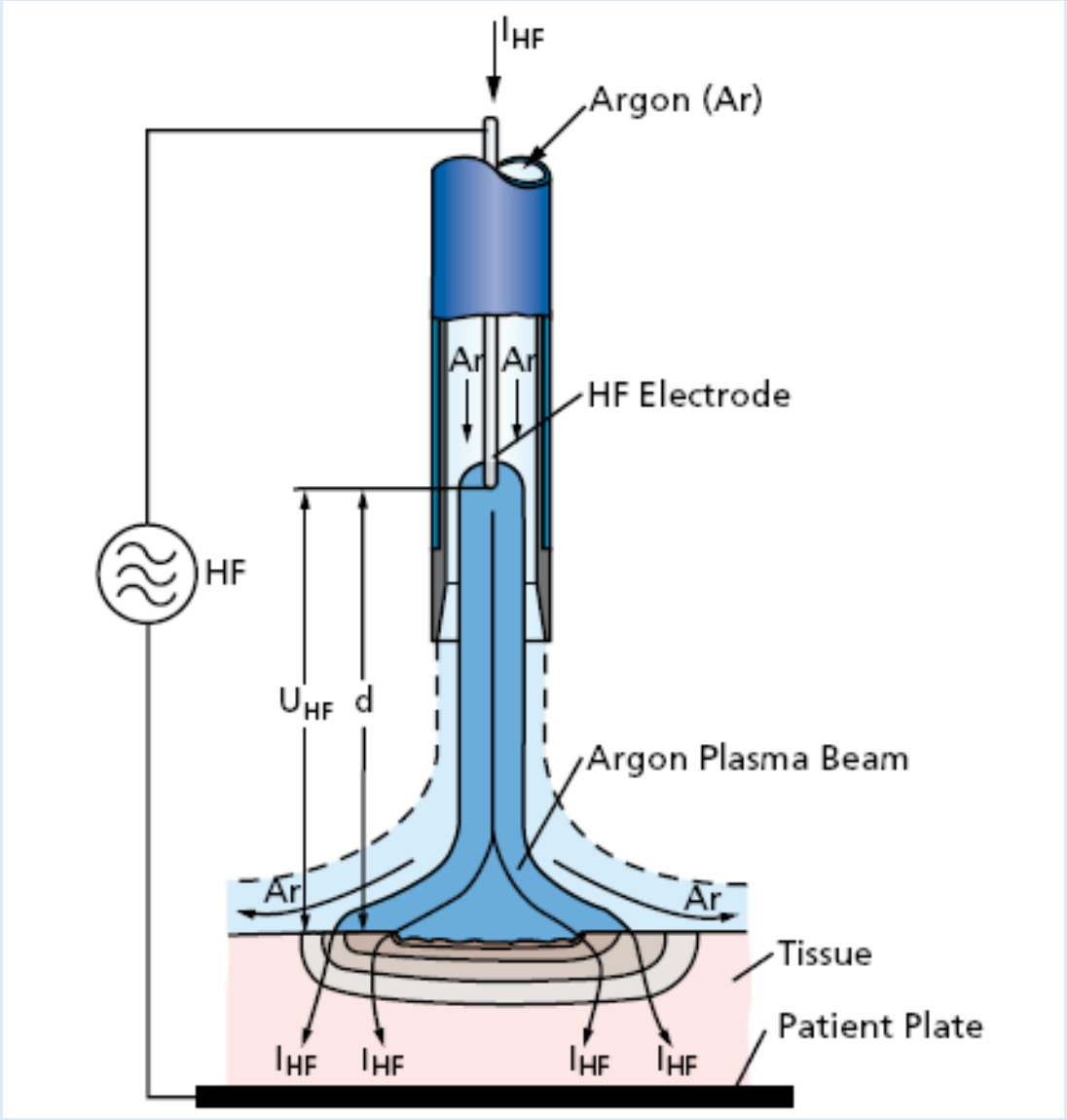
Argon Plasma Coagulation

- Varm teknik
- Blödningskontroll
- Koagulering
- Rekanalisering

Argon Plasma Coagulation

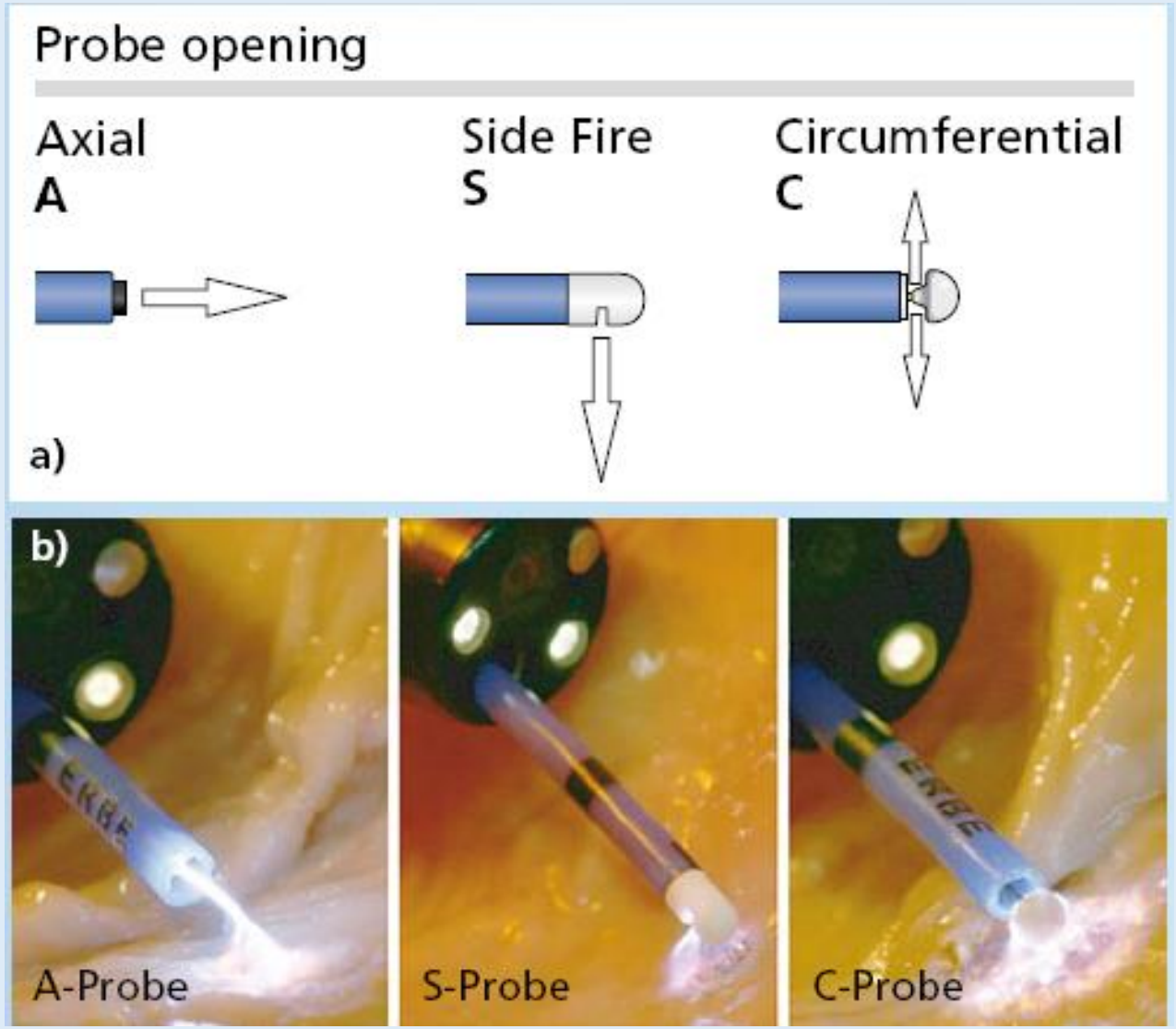
- Monopolär diatermi
- “non contact”
- Energin överförs via joniserad argongas
- Till skillnad från laser som följer de optiska lagarna, följer APC elektrofysikaliska lagar
- Energin överförs vid lägst resistans
- Ju högre resistans desto lägre energi överförs vilket gör APC självlimiterande

Argon Plasma Coagulation



Argon Plasma Coagulation

Argon Plasma Coagulation

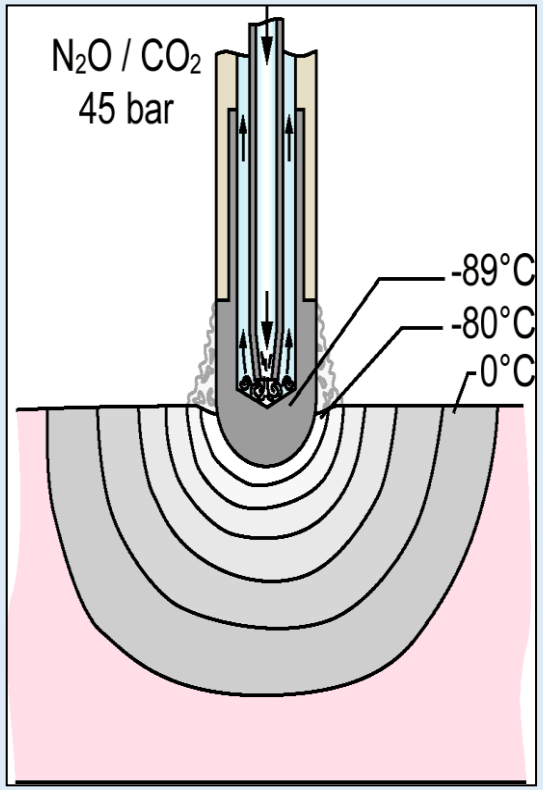



16/05/2014
12:33:36
03
AVE


02/01/2014
13:27:05
00
AVE

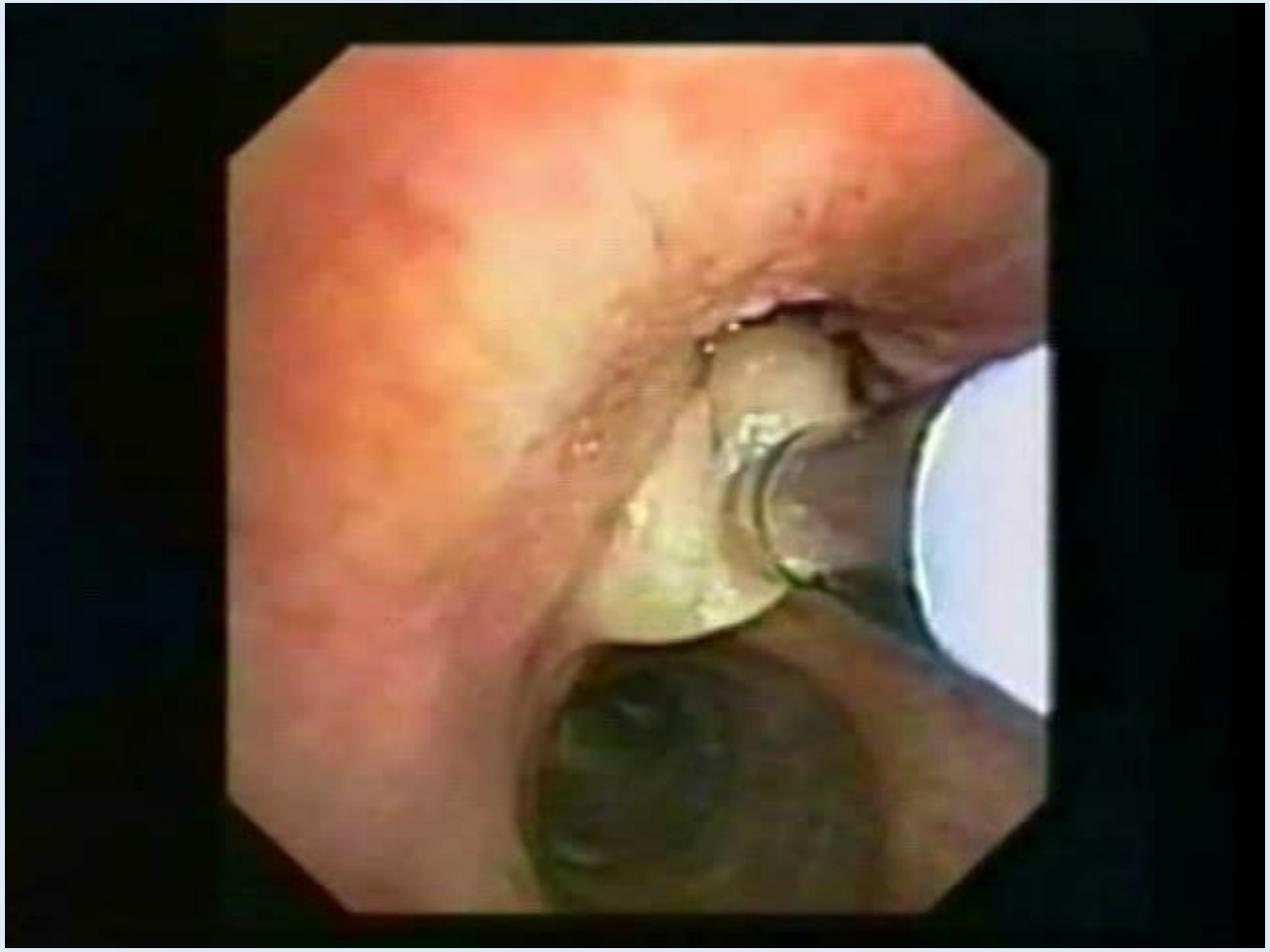
Kryo

Joule-Thomson Effekten



Kryon fungerar genom Joule-Thomson principen. Trycksatt gas expanderar genom en smal passage vilket ger ett snabbt fall i temperatur ner till – 89 C. Omkringliggande vävnad fryser därmed fast i proben.

Djupet av frysningen begränsas av brosket i de centrala luftvägarna. Hur djupt effekten når indikeras av den ytliga spridningen som är synlig.



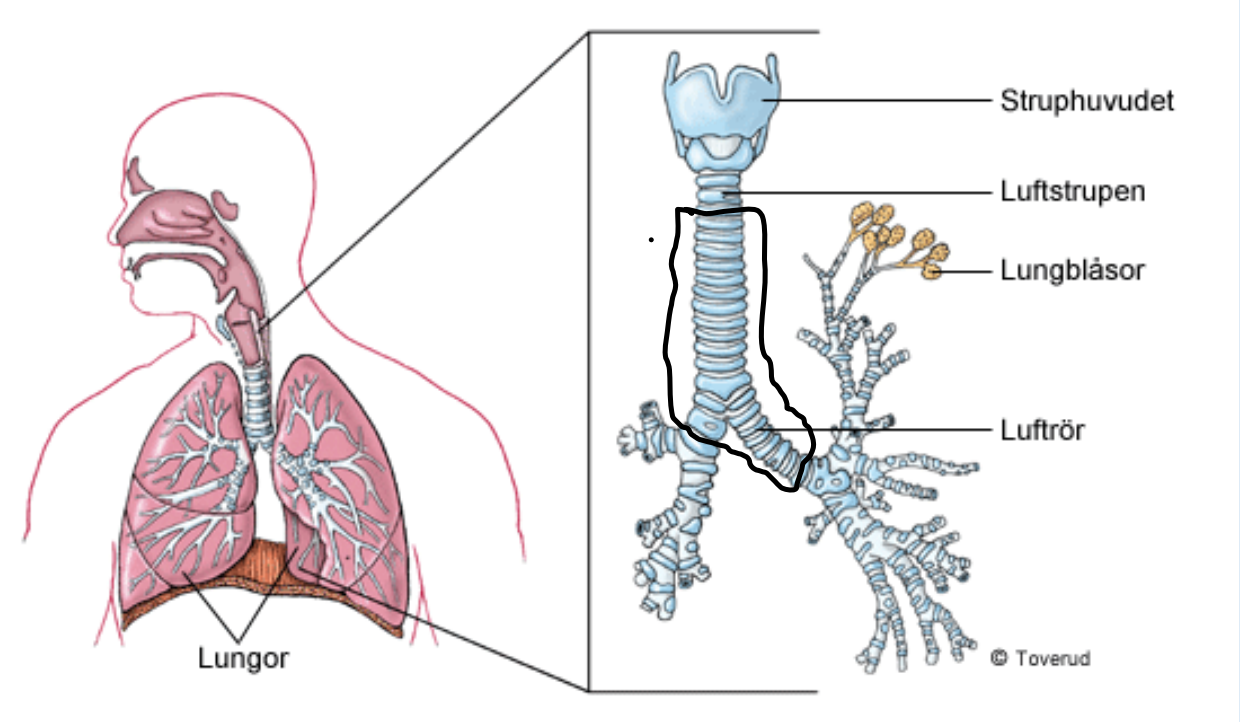
Olika typer av stent

- Otäckt metallstent; ex Palmaz
- Täckt metallstent; metallnät + plastfilm
- Silikon stent
- Rak stent
- Y-stent
- Koniska stent
- Nitinol stent metallblandning med självexpanderande minne

Indikation för Stent

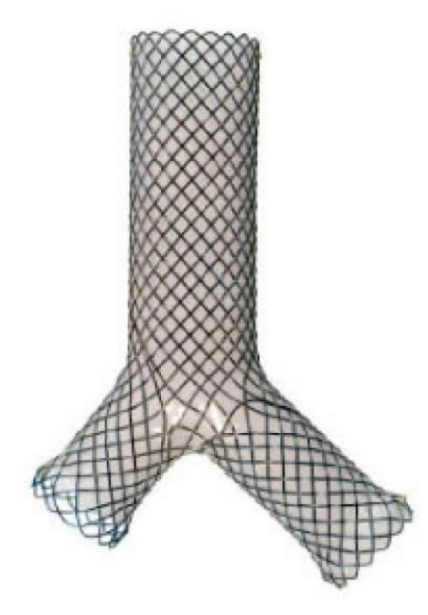
- Förträngning i trachea – huvudbronker.
- Först debulking och dilatation med ballongkateter
- Sedan insättning av stent
- Täcka fistel

Stent område



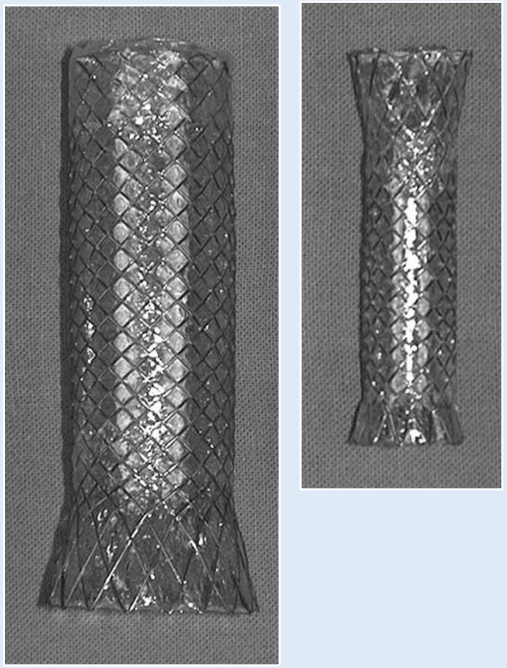
Metallstent

Y stent metall



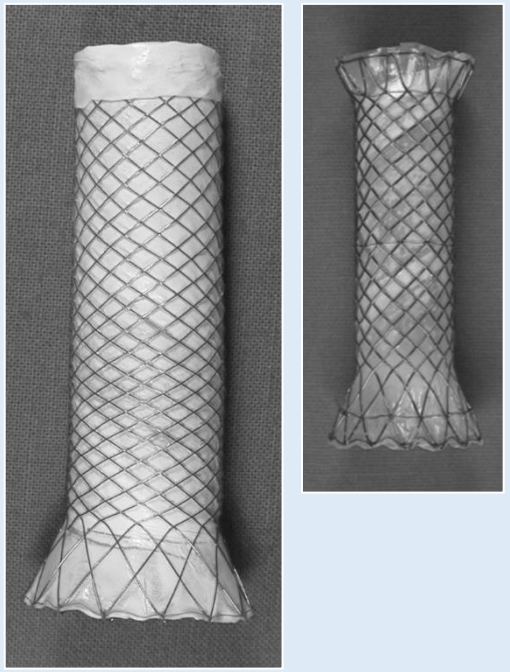
Täckta Nitinol-stentar

Trachea Bronchus



Polyurethane

Trachea Bronchus



PTFE (Teflon)

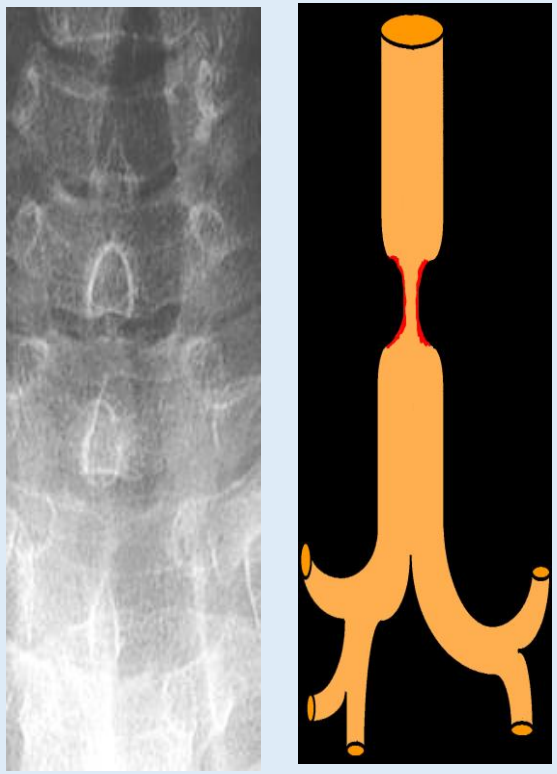
Silikon stent

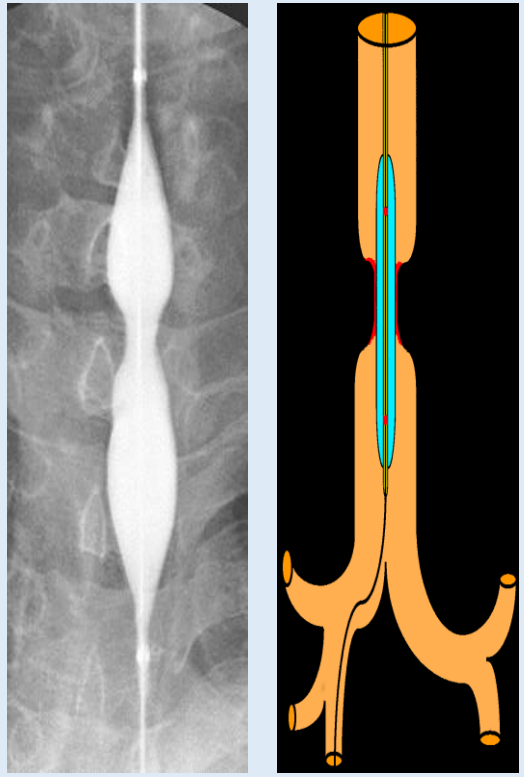
Insättningsteknik

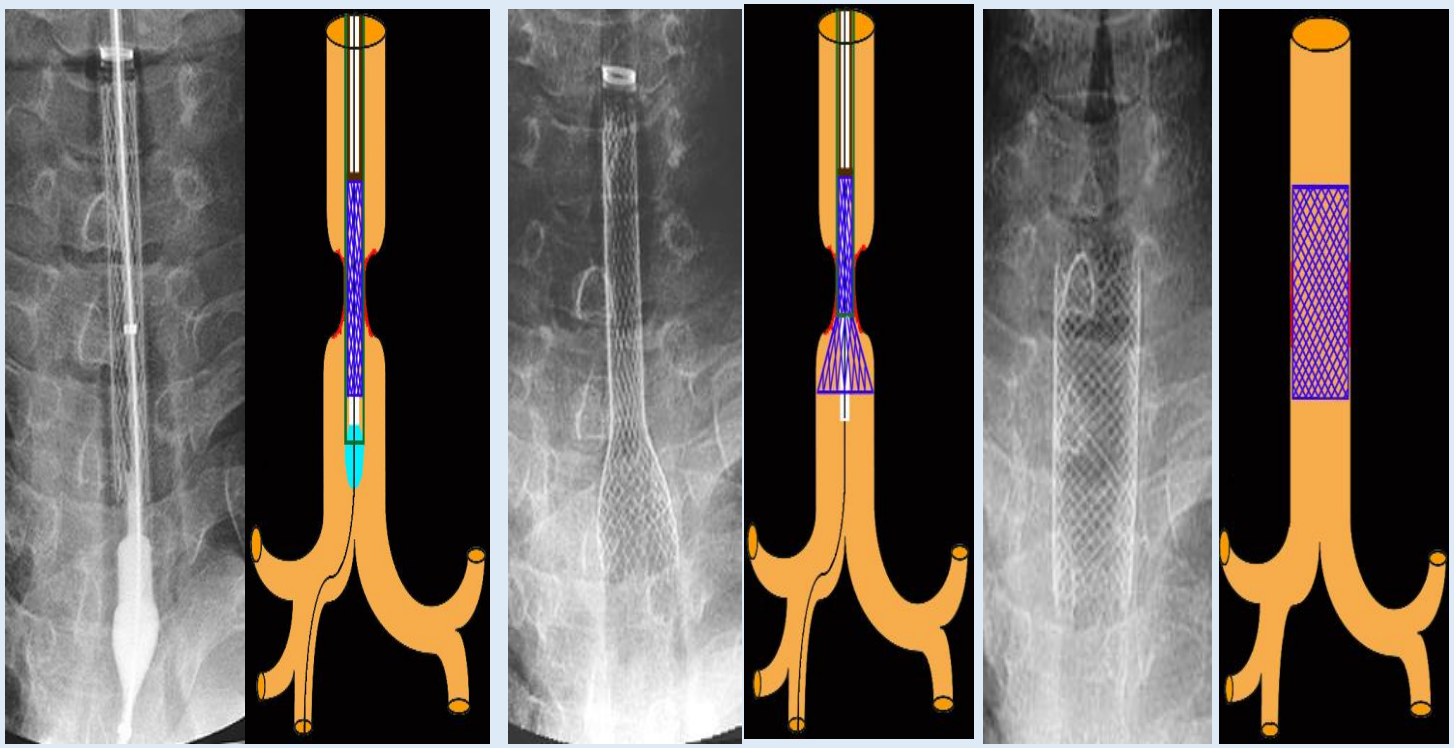
- Metall stent; införingshylsa i plast ner i luftväg via stelt rakt bronkoskop. Helst tillgång till rtg-genomlysning. Stentområde trachea, carina, huvudbronker.

- Silikon stent; Särskilt införingsrör i metall som laddas. Sätts ner genom rakt bronkoskop. Stentområde trachea, carina, höger huvudbronk. Kan anpassas med sax eller skalpell.

Teknik vid inläggande av trachealstent

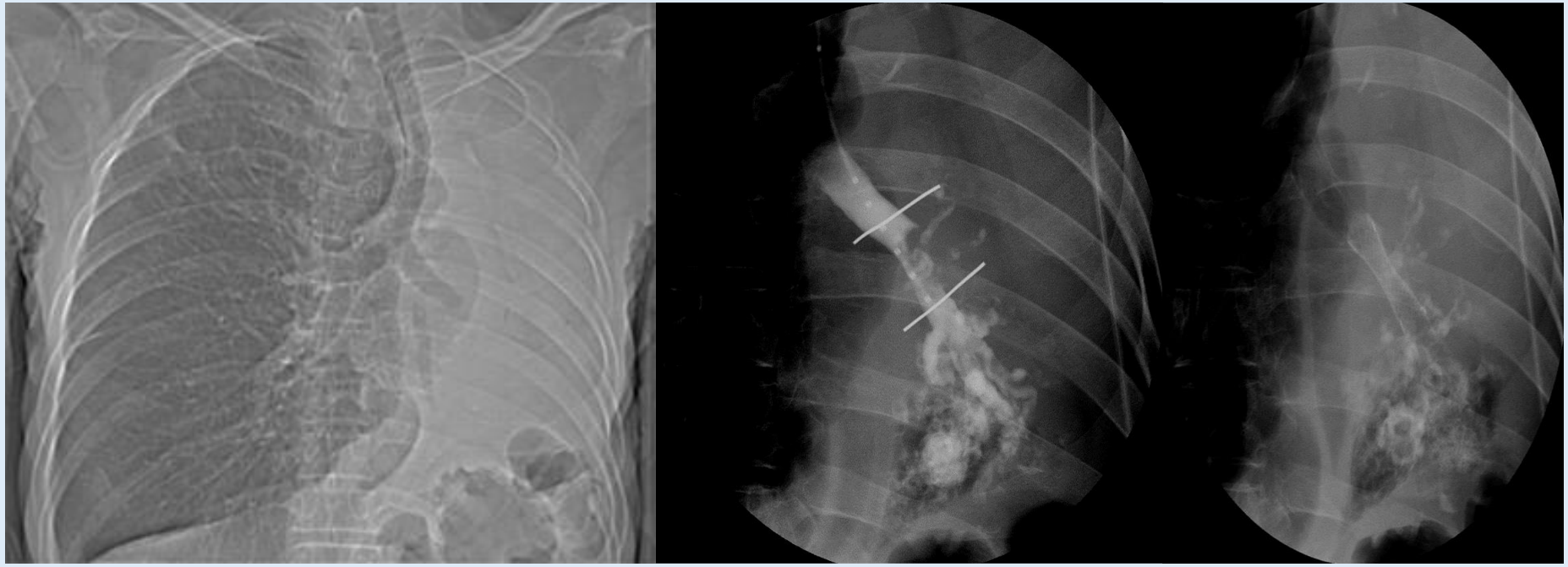






Bronchial Stent

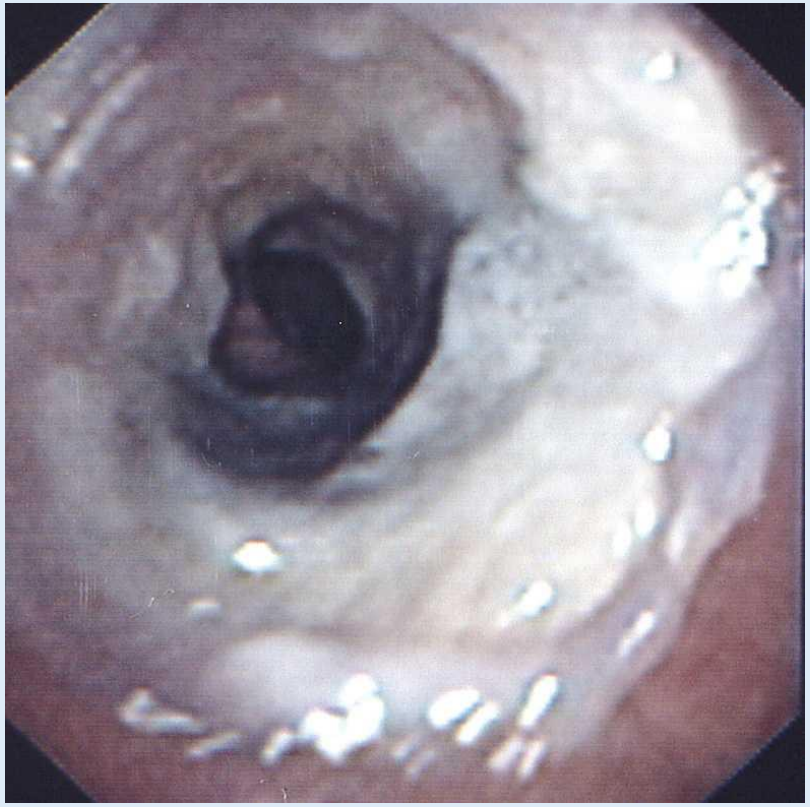
Lungcancer

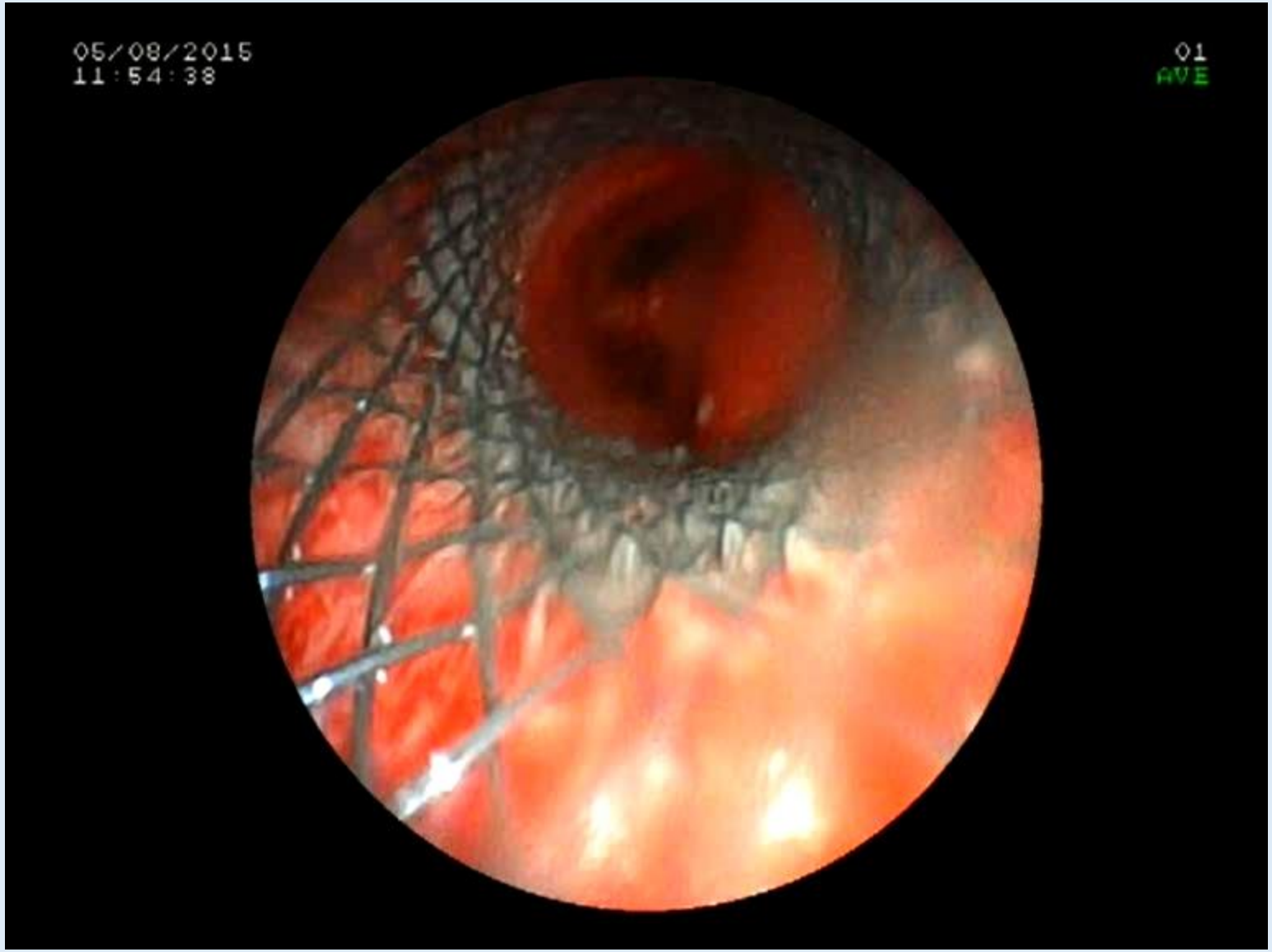


Komplikationer

- Slembildning; inhalation av nebuliserat NaCl 5 ml x 4
- Migrering
- Svårigheter att hosta
- Perforation
- Beläggning, dålig andedräkt
- Stent fraktur

Stentobstruktion




05/08/2015
11:54:38
01
AVE

Avveckling av stent

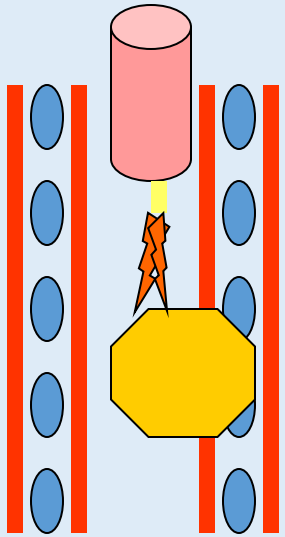
- Otäckt stent svårt att ta bort
- Täckt metall stent och silikon lätt att ta bort
- Y stent i metall svårt att ta bort

Intervention med stelt bronkoskop

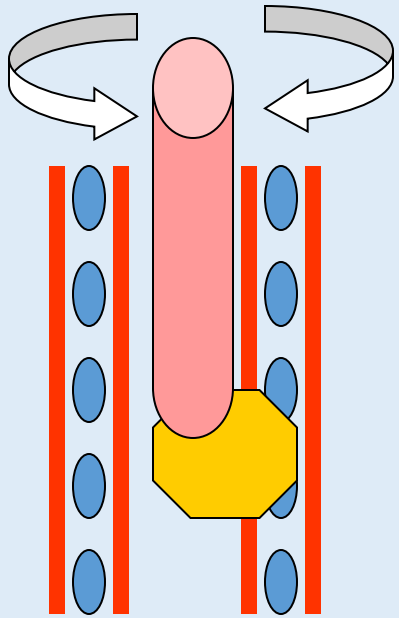
- Stora tumörmassor
- Centrala tumörer(trakea)
- Marginalpatienter, när man förväntar sig problem
- Vid (sub)total ocklusion
- Stentinläggning
- När man behöver tillgång till luftvägen för större/flera instrument

Debulkering med tuben

Koagulering med varm teknik



Debulkera, vrid och tryck



Klarar man sig med flexibelt skop?

- Små tumörer
- Perifera lesioner
- Delvis öppet
- Metallstentar?

Timely Airway Stenting Improves Survival in Patients With Malignant Central Airway Obstruction

Syed S. Razi, MD, Robert S. Lebovics, MD, Gary Schwartz, MD, Manu Sancheti, MD, Scott Belsley, MD, FACS, Cliff P. Connery, MD, FACS, and Faiz Y. Bhora, MD, FACS

Divisions of Thoracic Surgery and Otolaryngology, St. Luke's-Roosevelt Hospital Center, Columbia University College of Physicians and Surgeons, New York, New York

Background. The survival of patients with malignant central airway obstruction is very limited. Although airway stenting results in significant palliation of symptoms, data regarding improved survival after stenting for advanced thoracic cancer with central airway obstruction are lacking.

Methods. Fifty patients received a total of 72 airway stents for malignant central airway obstruction over a two-year period at a single institution. The Medical Research Council (MRC) dyspnea scale and Eastern Cooperative Oncology Group (ECOG) performance status were used to divide patients into a poor performance group (MRC = 5, ECOG = 4) and an intermediate performance group (MRC ≤4, ECOG ≤3). The SPSS version 16.0 (SPSS Inc, Chicago, IL) and Microsoft Excel (Microsoft, Redmond, WA) were used to analyze the data. Survival curves were constructed using the Kaplan-Meier survival analysis method and a log-rank test was used to compare the survival distributions among different groups.

Results. Successful patency of the airway was achieved in all patients with no procedure-related mortality. Stenting resulted in significant improvement in MRC and ECOG performance scores ($p < 0.01$). Significantly improved survival was observed only in patients in the intermediate performance group compared with patients in the poor performance group ($p < 0.05$).

Conclusions. Airway stenting resulted in significant palliation of symptoms in both groups as evaluated by MRC dyspnea scale and ECOG performance status. Compared with historic controls, a significant survival advantage was seen only in the intermediate performance group. We postulate that timely stenting of the airway, before the morbid complications of malignant central airway obstruction have set in, results in improved survival.

(Ann Thorac Surg 2010;90:1088–93)

PLOS ONE

RESEARCH ARTICLE

Indications of airway stenting for severe central airway obstruction due to advanced cancer

Hiroaki Nagano[1☯¤*], Tomoo Kishaba[1☯], Yuichirou Nei[1‡], Shin Yamashiro[1‡], Hiroaki Takara[2‡]

1 Department of Respiratory Medicine, Okinawa Chubu Hospital, Okinawa, Japan, 2 Department of Radiology, Okinawa Chubu Hospital, Okinawa, Japan

☯ These authors contributed equally to this work.
¤ Current address: 281 Miyazato, Uruma-City, Okinawa Pref, Japan
‡ These authors also contributed equally to this work.
* hiroakinoko322violin@gmail.com

Thoracic Cancer

Open Access

Thoracic Cancer ISSN 1759-7706

ORIGINAL ARTICLE

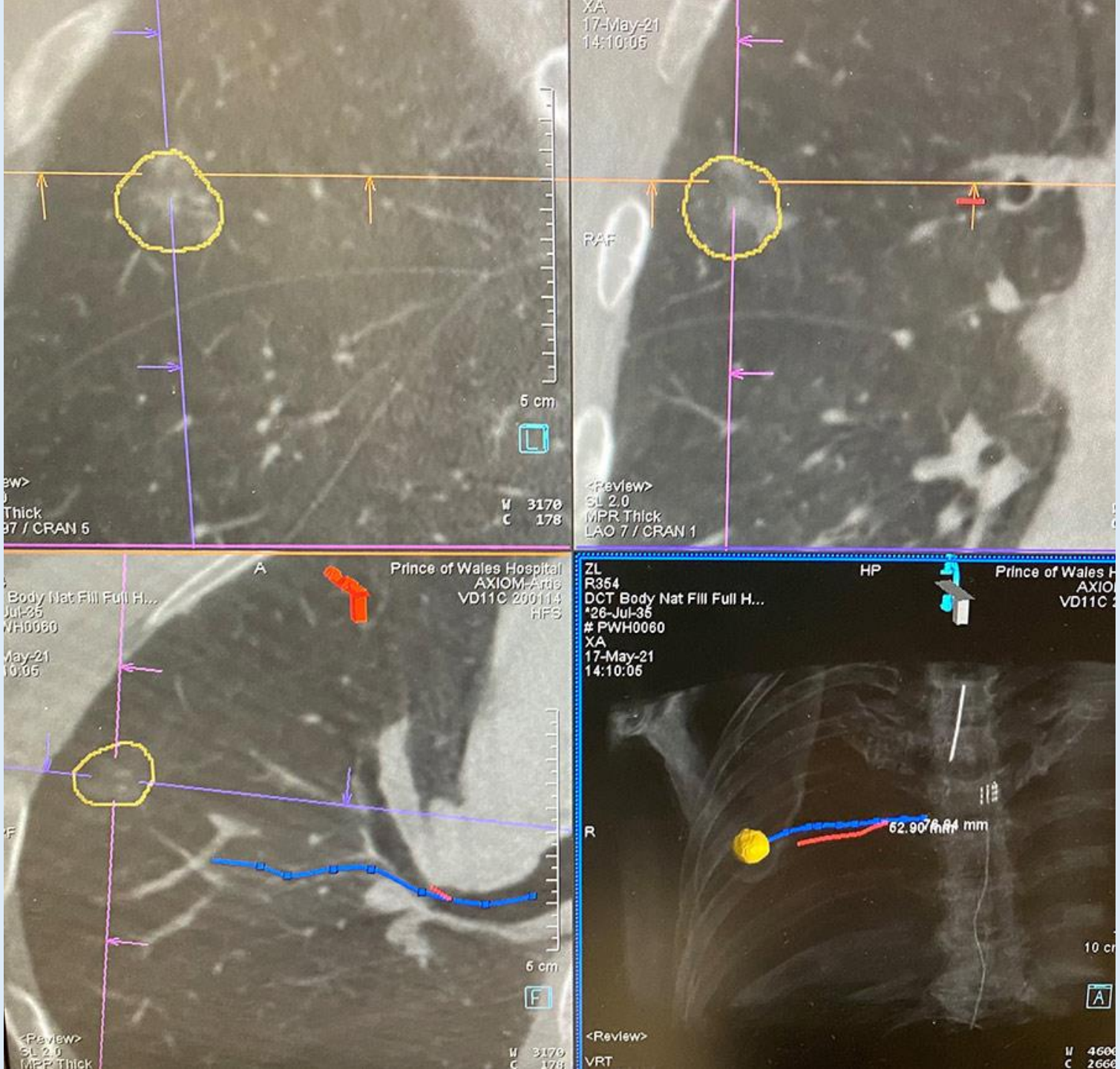
Clinical outcomes and survival following placement of self-expandable metallic stents for central airway stenosis and fistula

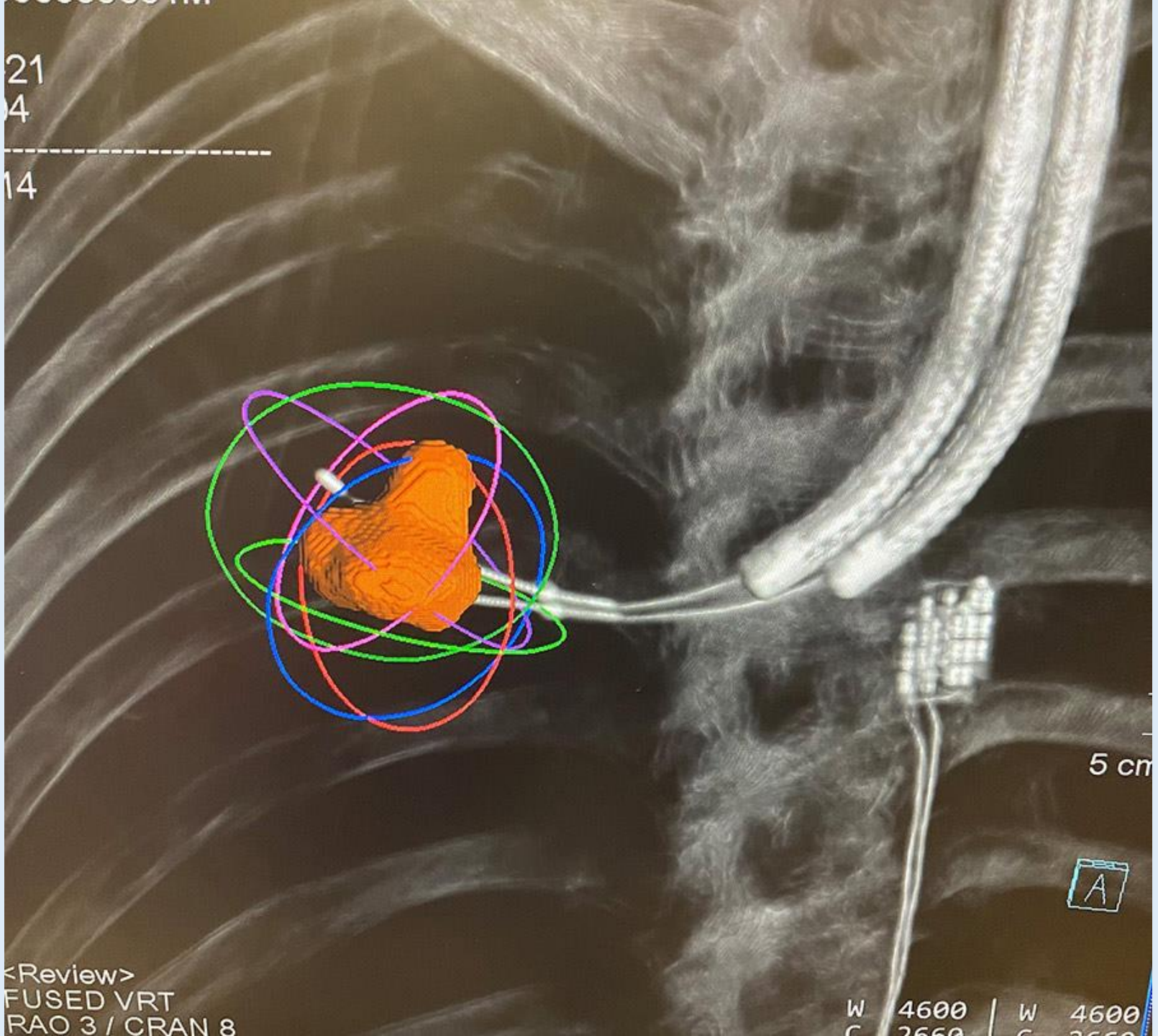
Katsuo Usuda[1], Shun Iwai[1], Aika Yamagata[1], Yoshihito Iijima[1], Nozomu Motono[1], Yutaka Takahara[2], Shohei Shinomiya[2], Taku Oikawa[2], Shiro Mizuno[2] & Hidetaka Uramoto[1]

1 Department of Thoracic Surgery, Kanazawa Medical University, Ishikawa, Japan

2 Department of Respiratory Medicine, Kanazawa Medical University, Ishikawa, Japan

Ablationsterapi


6 cm
W 3170
C 178
RAF
<Review>
SL 2.0
MPR Thick
LAO 7 / CRAN 1
A
Prince of Wales Hospital
AXIOM-Artis
VD11C 200114
HFS
6 cm
ZL
R354
DCT Body Nat Fill Full H...
26-Jul-35
PWH0060
XA
17-May-21
14:10:05
HP
R
62.90 mm
<Review>
VRT


21
14
5 cm
A
<Review>
FUSED VRT
RAO 3 / CRAN 8
W 4600
W 4600

Original Article

Transbronchial microwave ablation of lung nodules with electromagnetic navigation bronchoscopy guidance—a novel technique and initial experience with 30 cases

Joyce W. Y. Chan[1], Rainbow W. H. Lau[1], Jenny C. L. Ngai[2], Carita Tsoi[3], Cheuk Man Chu[3], Tony S. K. Mok[4], Calvin S. H. Ng[1]

Results: Total of 30 lung nodules from 25 patients were treated. Mean nodule size was 15.1 mm, and bronchus directly leads to the nodules (bronchus sign positive) in only half of them. Technical success rate was 100%, although some nodules required double ablation for adequate coverage. Mean minimal ablation margin was 5.51 mm. The mean actual ablation zone volume was –21.4% compared to predicted, likely due to significant tissue contraction ranging from 0–43%. There was no significant heat sink effect. Mean hospital stay was 1.73 days, and only 1 patient stayed for more than 3 days. Complications included pain (13.3%), pneumothorax requiring drainage (6.67%), post-ablation reaction (6.67%), pleural effusion (3.33%) and hemoptysis (3.33%). After median follow up of 12 months, none of the nodules had evidence of progression.

Conclusions: Bronchoscopic transbronchial microwave ablation is safe and feasible for treatment of malignant lung nodules. Prospective study on clinical application of this novel technique is warranted.

Keywords: Microwave ablation; transbronchial ablation; lung cancer; electromagnetic navigation bronchoscopy; hybrid operating room

Submitted Dec 03, 2020. Accepted for publication Feb 09, 2021.
doi: 10.21037/tlcr-20-1231
View this article at: http://dx.doi.org/10.21037/tlcr-20-1231

Tack!


No one hates winter like someone who has a motorcycle sitting in their garage.