Pulmonology
## Contents

### Contents of the folder

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>85402-100</td>
<td>Leaflet ERBECRYO 2</td>
</tr>
<tr>
<td>85160-100</td>
<td>Leaflet VIO® 3</td>
</tr>
<tr>
<td>85800-133</td>
<td>User brochure pulmonology</td>
</tr>
<tr>
<td>85110-122</td>
<td>Flyer information channels</td>
</tr>
<tr>
<td>85820-083</td>
<td>USB card pulmonology</td>
</tr>
</tbody>
</table>

### Files on the USB card

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>85402-100</td>
<td>Leaflet ERBECRYO 2</td>
</tr>
<tr>
<td>85160-100</td>
<td>Leaflet VIO® 3</td>
</tr>
<tr>
<td>85135-100</td>
<td>Leaflet APC 3</td>
</tr>
<tr>
<td>85100-140</td>
<td>Leaflet FiAPC</td>
</tr>
</tbody>
</table>

### Application information

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>85800-133</td>
<td>User brochure pulmonology</td>
</tr>
<tr>
<td>85800-127</td>
<td>User brochure electrosurgery</td>
</tr>
<tr>
<td>85110-122</td>
<td>Flyer information channels</td>
</tr>
</tbody>
</table>

### Further information, URLs

<table>
<thead>
<tr>
<th>Description</th>
<th>URL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Erbe Website</td>
<td><a href="http://www.erbe-med.com">www.erbe-med.com</a></td>
</tr>
<tr>
<td>Microsite</td>
<td><a href="https://cryo.erbe-med.com/">https://cryo.erbe-med.com/</a></td>
</tr>
<tr>
<td>Erbeplus academy / Further education</td>
<td><a href="https://de.erbe-med.com/de-en/education/">https://de.erbe-med.com/de-en/education/</a></td>
</tr>
<tr>
<td>Videos on pulmonology</td>
<td><a href="http://www.medical-videos.com">www.medical-videos.com</a></td>
</tr>
</tbody>
</table>
**Cryosurgery**

**ENDOBRONCHIAL BIOPSY**


The study compares cryobiopsy with forceps biopsy in 593 patients. At 95 %, the diagnostic yield for endobronchial cryobiopsies is significantly superior to the diagnostic yield of 85.1 % for endobronchial forceps biopsies. No bleeding or minor bleeding was reported more frequently with cryobiopsies than with forceps biopsies, severe bleeding did not occur more frequently with cryobiopsies.

**TRANSBRONCHIAL BIOPSIES**


Cryobiopsy has a diagnostic yield of 80 % for IPF, which could enable 80 % surgical biopsies for the diagnosis of IPF to be avoided. Conversely, the diagnostic yield of flexible forceps biopsies is merely 36.1 % for IPF. Surgical biopsies have a diagnostic yield of 89 %. The procedural mortality rate is 0.2 % for transbronchial cryobiopsies and 1.7 % for surgical lung biopsies. No recommendation was issued for or against forceps biopsies or cryobiopsies for the diagnosis of IPF.


In addition to latest information, the authors describe a possible procedure for the performance of transbronchial cryobiopsies. The article includes the recommendation of fluoroscopic guidance and a summary of the most frequently used methods, such as intubation, and the preference for or prophylactic use of a Fogarty balloon.

**RECANALIZATION**


Successful cryorecanalization was achieved in 72.5 % of 40 patients with stenosis. The restenosis rate was 12.8 %.


Retrospective study that included 225 patients. Successful cryorecanalization of tumors of various types was achieved in 91.1 % of cases.


Cryorecanalization/extraction enables the effective, safe, and economical treatment of endobronchial stenoses. 83 % of the stenosis in 60 patients could be recanalized partially (22 %) or completely (61 %).

**REMOVAL OF FOREIGN BODIES, BLOOD CLOTS AND MUCOUS PLUGS**


A total of 38 cryoextractions were performed in 30 patients. The indications for extraction included blood clots (26), mucous plugs (6), foreign bodies (4), and plastic bronchitis (2). Extraction was successful in 84.2 % of cases; in 24 / 26 (92 %) for blood clots, 4 / 6 (66.67 %) for mucous plugs, 2 / 4 (50 %) for foreign bodies, and 2 / 2 (100 %) for plastic bronchitis. There was only one complication (hypotony) related to sedation. The authors consider cryoextraction to be safe and effective.


An aspirated chewing gum was successfully extracted using a cryoprobe without complications and risks to the patient. The authors determined, that apparently all materials that contain water, can be extracted with the cryo technology.


An aspirated gold tooth was successfully extracted from the bronchus intermedius using a cryoprobe without complications and risks to the patient.

**DEVITALIZATION**


This systematic review evaluated the safety and efficacy of cryodevitalization. In total, 16 publications were included in the final assessment. Improved breathing was achieved with cryodevitalization in approximately 80 % of cases with a complication rate of 0 %–11 %. The authors found cryodevitalization to be a safe and effective procedure.
Electrosurgery

**RECANALIZATION**


These ATS Guidelines describe various methods for the treatment of exophytic tumors. Tumor recanalization with electrosurgery is considered a cost-effective procedure. In particular, the authors emphasize the need to keep the oxygen concentration within the airways as low as possible (<40%).


This review covers the application of coagulation probes, needle knives, hot biopsy forceps, and APC probes for the treatment of malignant airway obstructions. The reviewed studies found successful treatment of malignant airway obstructions in 53 % to 100 % of cases.

**HEMOSTASIS**


Bleeding is quickly controlled with contact coagulation.

**APC**

**RECANALIZATION**


Improvement in the symptoms that occurred before recanalization was achieved in 98 % (59/60) of cases. There were no complications related to APC.


The reviewed data revealed successful recanalizations in 67 % of cases with an additional 29 %, in which a minor reopening of the airways was possible.

**DEVITALIZATION**


This article describes the treatment of superficial squamous cell carcinoma with only a few cell layers. One of the advantages described is the ability to quickly ablate large areas with low penetration depth.


The treatment of tumorous endobronchial tuberculosis with APC was 100 % successful in combination with chemotherapy. The success rate was 85 % in the chemotherapy group without APC. The APC group experienced more rapid disease remission.

**HEMOSTASIS**


Reichle et al. describe successful control of bleeding in 118 out of 119 patients with the flexible as well as the rigid technique.


Morice et al. treated hemoptysis (coughing up blood) in a group of 56 patients with 100 % successful bleeding control for a follow-up period of up to 97 days. One of the success factors for patient selection: Bleeding should occur in the central lung region accessible with the bronchoscope.

Stand April 2019
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