

# CASE REPORT

## TTS TRACHEAL AND BRONCHIAL STENTS

Written by Paul F. Fiedler

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## TTS TRACHEAL AND BRONCHIAL STENTS FOR BRONCHIAL CARCINOMA



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### MEDICAL HISTORY

A 65-year-old patient with a history of smoking, COPD and refractory pneumonia in the left lower lobe was referred to the Lüdenscheid Clinic from an external hospital. Due to refractory pneumonia, a CT thorax examination was performed. There was a high degree of suspicion of airway obstruction due to bronchial carcinoma with postoperative pneumonia. Therefore, an indication for rigid bronchoscopy to confirm the diagnosis was made, along with, if possible, recanalisation.

### FINDINGS

As a result of the bronchoscopy, an endoluminal tumour occlusion of the entire left lower lobe bronchus was found (Image 1). Unfortunately, just a few minutes after the start of the examination, there was insufficient oxygenation due to jet ventilation in pneumonia and COPD, so the patient had to be re-intubated using flexible bronchoscopy. Under this, oxygenation was then stable.

Endoscopically and laterally, pertaining to the CT thorax, recanalisation was possible. Cryorecanalisation was therefore performed. This was executed without complications using a 1.7 cryoprobe via the flexible tube (Image 2). After cryorecanalisation had been performed, segment S6 on the left was fully ventilated successfully. However, a considerably more difficult finding presented in further distal regions. Ultimately, it was necessary to remove the tumour in such a way that allowed segment 10 to be visible again to the left of the tumour stenosis. Segments 8 and 9 on the left were not visible, as the tumour had destroyed the remaining anatomical structures. Given the endoscopic findings and due to severe pneumonia with oxygenation disorder and currently only flexible intubation, the decision was made to place a stent, specifically a TTS stent with a diameter of 12 mm and a length of 20 mm, to reopen segment 10 permanently. For this purpose, the stent was inserted through a therapeutic bronchoscope with a 2.8-mm channel, and the marking was placed proximally to the tumour under visual observation (Image 3).



Image 1



Image 2



Image 3

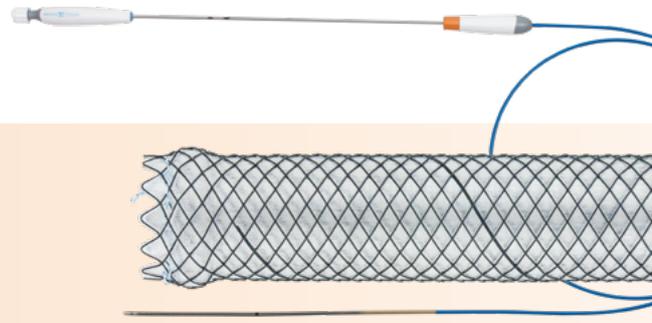


Image 4



Image 5

The stent was then pushed forward until the yellow marking appeared and ultimately appropriately released while slowly retracting the insertion instrument (Image 4). The metallic guidewire of the stent could be easily removed without dislocating the stent. Endoscopic images showed an excellent fit (Image 5).

## FOLLOW-UP

After recovery from pneumonia and completion of the staging as well as in the course of significantly improved oxygenation, the patient was able to undergo uniportal sleeve-lobeotomy at the Lüdenschaid Clinic and was no longer oxygen dependent upon discharge. In the first follow-up, the patient was still tumour-free.

## PRODUCT EVALUATION

As an interventional pulmonologist, one often wishes to treat peripheral tumour stenoses with a stent. As a rule, an experienced pulmonologist can easily place the stent in the periphery under fluoroscopy. In most cases, the main difficulty is the removal of the insertion system through the positioned stent. In particular, in cases with a smaller stent diameter or more distally angled airways, dislocation occurs in the previously properly positioned stent.

The TTS stent offers several advantages here: The distal portion of the insertion instrument is just a guidewire with a slight widening at the distal end. Removal almost always occurs without difficulties. If the distal end catches on the positioned stent, smaller peripheral stents can easily be secured in place with the bronchoscope, and the wire can be removed.

An additional advantage is the uncomplicated placement under visual observation without fluoroscopy. Depending on the setting, this can save examination time and minimise X-ray exposure.

The slightly lower radial force of the TTS stent compared to conventional stents is notable. In the first seconds after release, this often appears too low. Ultimately, full deployment here takes longer than conventional stents. Overall, however, particularly when used in the relatively more sensitive lung periphery, the radial force seems to have been optimally chosen to avoid excessive granulation tissue. In summary, for the Lüdenschaid Clinic, TTS stents are not a replacement for conventional tracheal and bronchial stents, but a useful addition to and expansion of the portfolio, specifically in the periphery of the bronchial system.

### PRODUCT INFORMATION

- Excellent positional stability
- High radial force
- Resistant and elastic silicone covering
- High radiopacity, but no X-ray required
- Integrated guidewire with atraumatic end
- No rigid bronchoscopy required

Source: MICRO-TECH Europe GmbH

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