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Change of a tracheostomy cannula using a Bonfils semirigid fibroscope: case report

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Key points

Difficult airway management in pediatric patients is always a topic of great interest and sometimes can have dramatic consequences even in cases apparently simple to manage. The use of new devices for tracheal intubation, now available also for pediatric and neonatal patients, requires adequate training but results essential if the traditional intubation by the "old laryngoscope" become difficult or impossible

Abstract

We report the case of a 4-year-old female patient who needed an emergency change of tracheostomy cannula; Bonfils semirigid fibroscope was employed.

Keywords: tracheostomy; Bonfils; pediatric

Case Report

The young patient (4 year old) was suffering from the Prader-Willi syndrome and was seriously affected by both obesity and psychomotor impairment.

The girl was tracheotomized at two years of age and, given the clinical picture of chronic repiratory insufficiency, she was treated with nocturnal home ventilation. The patient was hospitalized for fever and recurrence of acute respiratory failure that led to oxygen-dependence and ventilotherapy > 12 hours.

Radiography of the thorax showed medial apical pneumonia of the right lung. The start of antibiotic therapy saw an improvement in the clinical picture and no further oxygen-dependence.

During hospitalization, the tracheostomy cuffed cannula (cannula 4) came out and the staff tried unsuccessfully to replace it.

Despite various attempts with small calibre cannulas, replacement was impossible due to partial obstruction of the tracheal stoma.

The patient rapidly developed hypercapnia and a need for oxygen, therefore, she was transferred to reanimation.

The flexible fibroscopy carried out through the tracheal stoma showed the presence of vegetation that marked the trachea, deflecting the tracheocutaneous fistula. The airways below appeared free. An attempt to position the cannula using a flexible fibroscope failed despite the optimal vision of the airways. This was due to the resistance offered by granulomatous tissue and the deflected tracheocutaneous fistula.

At this point, it was decided to use a Bonfils semirigid fibroscope (Figure 1), which allowed easy transit of a 5 Fr cannula.

Discussion

Fibre optic instruments have allowed great improvements in the control of the airways[1].

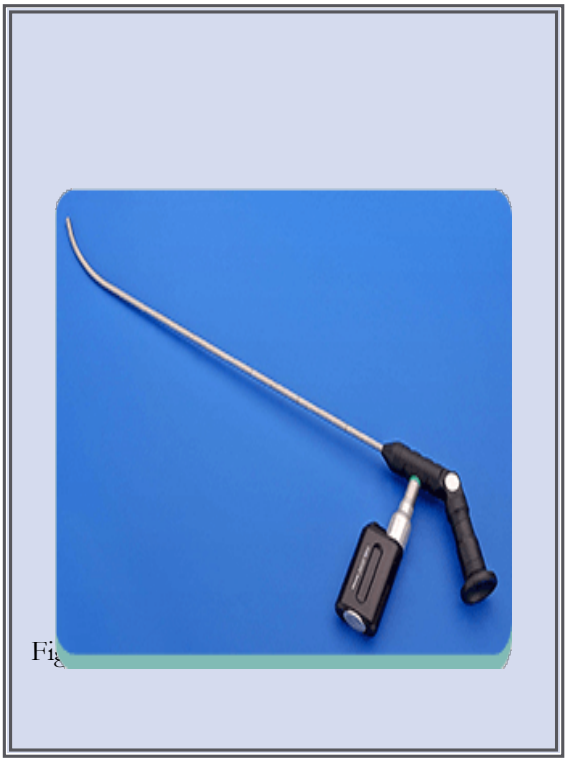
In particular, semirigid fibroscopes, like the Bonfils, have shown their efficacy since their introduction into clinical practice, even in pediatric age[2-3].

In this case, the use of Bonfils allowed us to move the vegetation without trauma and to straighten the tracheocutaneous fistula allowing the surprisingly easy introduction of a larger cannula, compared with the results obtained previously with the flexible fibroscope.

A change of cannula in patients under chronic ventilation has always been a delicate moment[4].

Even though the procedure is relatively simple in expert hands, the presence of vegetation or stenosis can lead to extremely difficult and often unpredictable situations.

Owing to its rigidity and safety, and thanks to the possibility of delivering a flow of fresh gas, Bonfils seems an optimal instrument to keep on hand in order to improve efficacy and safety when a change of a tracheostomy cannula is required.



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